*Psychiatria Danubina, 2017; Vol. 29, Suppl. 3, pp 323-332* *Conference paper*


# PERSONALITY DISORDERS FEATURES IN A SAMPLE OF WOMEN WITH PERINATAL DEPRESSION IN PERUGIA, ITALY

**Emanuela Lucarini[1], Luigi Attademo[1], Patrizia Moretti[1], Giulio Spollon[1], Sandro Elisei[2], Roberto Quartesan[1] & Alfonso Tortorella[1]**

*[1]Division of Psychiatry, Clinical Psychology and Rehabilitation, Department of Medicine, University of Perugia, Perugia, Italy*
*[2]Istituto Serafico, Assisi, Italy*

## *SUMMARY*

***Background:*** *Antepartum depression (APD) and postpartum depression (PPD) are a significant public health problem. Aim of the study was to determine which personality disorders features could be found in women with APD and PPD compared to women without perinatal depression.*

***Subjects and methods:*** *The Edinburgh Postnatal Depression Scale and the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) were administered during peripartum to a sample of 54 women recruited at the Obstetrics and Gynaecology Unit, Perugia (Italy).*

***Results:*** *Results were grouped according to the EPDS ranges 0-8 and ≥9, and to the MMPI-2 scores on each clinical scale. Women with APD had high scores on the MMPI-2 Hypomania, Cynicism, and Antisocial Practices scales; women with early onset PPD (detected in the first week after childbirth) had high scores on the Paranoia and Low Self-Esteem scales; women with late onset PPD (detected up to three months after childbirth), had high scores on the Fears, Obsessiveness, and Depression scales.*

***Conclusions:*** *Based on the high scores of specific MMPI-2 scales, our study would suggest that: cluster B personality features may represent a vulnerability factor for APD; passive-aggressive personality features may be a vulnerability factor for early onset PPD; cluster C personality features may act as a vulnerability factor for late onset PPD.*

***Key words:*** *personality disorders - antepartum depression - postpartum depression - perinatal depression - MMPI-2 – EPDS – Italy*

* * * * *

## INTRODUCTION

Perinatal psychiatric disorders, especially perinatal depression, cross-cut cultures and countries (Lee 2004, Adewuya 2005, Gavin 2005, Klainin 2009, Sawyer 2010, Le Strat 2011, Gupta 2013, Santos 2013, Poçan 2013, Deng 2014) and are a significant public health problem (Gavin 2005), impacting on the affected mother (Nicholson 2006, Sadat 2014), the baby (Murray 1997, Murray 1999, Righetti-Veltema 2002, Grace 2003, Wan 2009, Grigoriadis 2013, Kawai 2017, Abdollahi 2017) and its psychological development (Korhonem 2012, Glasheen 2013, Pearson 2013, Betts 2015, Sanger 2015), and the whole family (Lovestone 1993, Zelkowitz 2001, Paulson 2006, Beestin 2014, Leach 2016). They are clinically classified according to the onset period, i.e. pregnancy or postpartum psychiatric disorders (Paschetta 2014). Most frequent pregnancy psychiatric disorders are anxiety (e.g. panic attacks and phobias) (Wenzel 2005, Ross 2006, Ayers 2008, Coelho 2011, Rubertsson 2004) and depressive disorders (Robertson 2004, Heron 2007, Munk-Olsen 2012, Castro 2016, NICE 2014), often combined in the mixed anxiety-depressive disorder (Austin 2004, Nareen 2011, Falah-Hassani 2017); however, feeding and eating disorders (Cardwell 2013, Easter 2013, Watson 2013, Coker 2015), such as anorexia (Eagles 2012) and bulimia nervosa (Morrill 2001), are also common. Antepartum depression (APD) may occur throughout pregnancy, but it is usually observed at 4-6 months; it is defined as a non-psychotic depressive episode of different severity, beginning in, or extending into, pregnancy (NICE 2014, National Guideline Clearinghouse 2012). After childbirth, postpartum depression (PPD) (Gavin 2005), obsessive-compulsive disorder (Abramowitz 2003, Chaudron 2011, McGuinness 2011, Speisman 2011, Russell 2013), or (less frequently) postpartum psychosis (Chaudron 2003, Spinelli 2009, Upadhyaya 2014) can occur. PPD is generally defined as a non-psychotic depressive episode of different severity beginning in, or extending into, the first postnatal year (NICE 2014, National Guideline Clearinghouse 2012); it occurs most frequently 2-4 months after delivery, but late onsets have been reported (Goodman 2004). Indeed, in DSM-IV (APA 1994) a "postpartum onset" specifier could be applied to a depressive episode only if symptoms began within four weeks of childbirth; now, in DSM-5 (APA 2013), the specifier has been changed to "peripartum onset," and the time frame of symptom onset includes also pregnancy. Furthermore, postnatal depressive symptoms appear to be strongly correlated to antenatal ones (Robertson 2004, NICE 2014, Beck 2002, Milgrom 2008, Marino 2012).

The prevalence of APD ranges from 8.5% to 11% (Gavin 2005, Gaynes 2005, Banti 2011, Fisher 2012). In a meta-analysis of 109 articles, the prevalence of PPD ranged from 6.5% to 12.9% in the year after childbirth, and 19.2% of women with PPD had a major depressive episode in the first three months postpartum (Gavin 2005). Perinatal depressive episodes may arise in different clinical forms; for example, as dysthymic forms with anxiety and compulsive symptoms, or as

major depression, sometimes with depressive delusions with most experiences and thoughts focusing on maternity and childcare (Benvenuti 2002).

Attempts to identify the risk factors and clinical features of APD and PPD have yielded little information on the risk factors for APD (Bowen 2006, Witt 2010, Kelehr 2012), as PPD was principally investigated (APA 1994, APA 2013, O'Hara 2014). Generally, the PPD risk factors include the biological and the psychosocial ones. The main biological risk factors for PPD include gonadotropic hormone fluctuation (Bloch 2000, Bloch 2006, Skalkidou 2012, Stowe 1995) maternity blues (Reck 2009, Grussu 2013), and obstetrical complications (Robertson 2004, Vigod 2010, Seng 2011, Meltzer-Brody 2017). As regards the psychosocial risk factors, interestingly, APD emerged as a major psychosocial factor (Robertson 2004, Milgrom 2008, O'Hara 1996, Webster 2000, Witt 2011, Elisei 2013) together with antepartum anxiety (Wenzel 2005, Ross 2006, Coehlo 2011, Robertson 2004, Austin 2004, Nareen 2011, Falah-Hassani 2017, O'Hara 2014), a personal history of previous depressive episodes (Robertson 2004, O'Hara 2014, O' Hara 1996, Webster 2000, Silverman 2017) or of PPD (O'Hara 2014, O' Hara 1996, Webster 2000, Silverman 2017), a family history of psychiatric disorders (Upadhyaya 2014, O'Hara 2014, O' Hara 1996, Tebeka 2016), the presence of certain personality traits/disorders (Akman 2007, Josefsson 2007, Newman 2007, Uguz 2009, Meuti 2014, Iliadis 2015, Smith-Nielsen 2016, Maliszewska 2016), a history of conflict with the spouse and/or parents (Benvenuti 2002, O'Hara 2014, Bliszta 2008, Dennis 2006) social and psychological stress (O'Hara 2014,Yelland 2010, Reid 2015) traumatic events during the past year (Banti 2011, O'Hara 2014, Kettunen 2016) and the young age of the mother (Benvenuti 2002, O'Hara 2014, Fleming 2015).

As far as we are concerned, a small number of studies have deeply investigated the correlation between personality disorder features and PPD (Smith-Nielsen 2016). In this field, cluster C personalities (avoidant, dependent, and obsessive-compulsive personality disorders) emerged as possible risk factors for the new onset of PPD (Akman 2007, Uguz 2009, Meuti 2014). Also women with borderline personality disorder appear to be at greater risk of developing PPD (Newman 2007). PPD was also associated with personality dimensions such as shyness, need of approval, emotional fragility, less control of impulsivity, separation anxiety, and high sense of responsibility; women with PPD were also found to be less tolerant, less empathetic, and more absent-minded than women without PPD (Iliadis 2015, Maliszewska 2016).

The aim of the present study was to determine which personality disorders features could be found in women with APD and PPD, compared to women without APD and PPD, in order to promote preventive strategies and to improve treatment in this field.

# SUBJECTS AND METHODS

## Subjects

From January to July 2012, questionnaires were administered to a sample of women attending the Prenatal Day Hospital in the Obstetrics and Gynaecology Unit, Santa Maria della Misericordia Hospital, Perugia, Italy. Inclusion criteria were age over 18 years, and agreement and written informed consent; the only exclusion criterion was the inability to speak, understand and write Italian.

## Methods and Experimental Design

The Edinburgh Postnatal Depression Scale (EPDS) (Boyd 2005) and the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) (Butcher 1989) were used.

The EPDS is a 10-item self-assessment questionnaire investigating the presence and the severity of perinatal depression (Cox 1987, Gibson 2009). Usually the EPDS scores for the screening of PPD are so interpreted: 0-8 healthy (absent PPD), 9-12 "possible PPD" (as baby blues), 13-14 "probable PPD" (as minor PPD), and ≥15 "probable PPD" (as major PPD) (Gibson 2009, Eberhard-Gran 2001, Gaynes 2005). In our study, the cut-off 9 of the Italian validation (Carpinello 1997, Benvenuti 1999) was considered indicative of PPD. The questionnaire was validated in an Italian version and has a high level of validity, reliability, and internal consistency. As in other studies (Murray 1990, Choi 2012, Töreki 2013), the EPDS has been validated as a screening tool for APD in pregnant women, with both cut-off point for "probable depression" of 9 and 14.

The MMPI-2 is an objective, non-projective, standardized psychometric test of adult personality and psychopathology (Gregory 2007). It is one of the most commonly used questionnaires for evaluating the main personality traits (Gregory 2007), exploring a spectrum of personality traits in subjects who are not necessarily affected by psychopathological disorders. Composed of 567 true/false items, and divided into 10 clinical scales and 15 content scales, it detects psychopathological behavioral patterns according to clinical and statistical criteria (Hathaway 1995, Butcher 1996). Clinical scales are: Hs (hypochondria), D (depression), Hy (hysteria), Pd (psychopathic deviation), Mf (masculinity-femininity), Pa (paranoia), Pt (psychoastenia), Sc (schizophrenia), Ma (hypomania), Si (social introversion). Content scales are: Anx (anxiety), Frs (fears/phobias), Obs (obsessiveness), Dep (depression), Hea (health concerns), Biz (bizzarre mentation), Ang (anger), Cyn (cynicism), Asp (antisocial practices), Tpa (type A), Lse (low self-esteem), Sod (social discomfort), Fam (family problems), Wrk (work interference), Trt (negative treatment indicators). A T-score ≥65 is high and generally indicates a pathological state; T-scores between 41 and 64 (medium score), especially when close to 60, may show a specific personality tendency;

and T-scores ≤40 (low score) are expression of a better adjustment than medium and high scores (Friedman 2001, Keiller 1993). MMPI-2 has been widely standardized on Italian population samples, and many studies confirmed its usefulness and effectiveness in normal and pathological cohorts; furthermore, Italian profiles can be compared with those of other countries and cultures (Hathaway 1995, De Fidio 2005). There is no maximum time to complete the test; the subject has to be at least 18 years old, in possession of a sufficient cultural level to understand the questionnaire items. The MMPI-2 interpretative procedures were automatically analyzed using the "Panda" software (Pancheri 1999).

Figure 1 illustrates the experimental design. Tests were administered at three time-points during pregnancy and postpartum. To identify all women with APD, EPDS was administered during the last trimester of pregnancy (simply stated as EPDS Pre) in the Prenatal Medicine Day Hospital. To identify all women with an early onset of PPD, EPDS was administered in the first week (simply stated as EPDS FW) after delivery at the Obstetrics and Gynaecology Unit; socio-demographic and obstetrical data were collected in the first week too. To follow up women who had already been diagnosed as depressed and to identify patients with late onset depression, EPDS was administered up to three months after delivery (simply stated as EPDS FU) at the women's homes; at the same time, the MMPI-2 was also administered as the most convenient time and venue for mothers to compile the long MMPI-2 questionnaire.

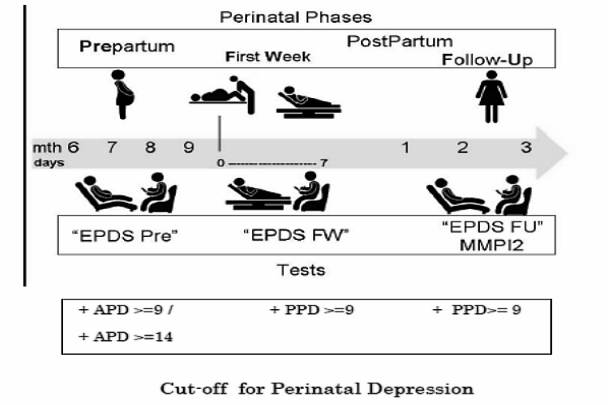


**Figure 1.** Test administration time-points in the study. EPDS Pre was administered during the Prepartum (last trimester), EPDS FW was administered during the First Week after delivery, EPDS FU and MMPI-2 were administered during the Follow-Up, until three months after delivery

### Data Analysis and Statistics

Since variable distribution parameters in the study population were unknown, non-parametrical tests for independence i.e. the Mann-Whitney U Test and Spearman's correlation (Kendall 1948, Gibbons 1985) were used instead of the more common T-test and Pearson's correlation coefficient. In the present study, independent variables were the EPDS results which were collected at three different time-points. We also analyzed the presence or absence of perinatal depression as another independent variable (positive or negative EPDS independently of administration time). For this purpose, women were divided into two groups according to EPDS cut-off of 9. Group 1 included women without depression, i.e. with scores ranging from 0 to 8 for EPDS administered during the prepartum, and with scores from 0 to 8 for EPDS administered during the postpartum first week and the follow-up. Group 2 included women with perinatal depression, i.e. with EPDS scores ≥9 during prepartum, and/or with scores ≥9 during the postpartum first week or the follow-up. The results of the MMPI-2 clinical and content scales were analyzed in both groups. Scores on the MMPI-2 clinical and content scales were considered as continuous, non-independent variables. Scores on the MMPI-2 scales were stratified into three groups: "Low" for scores ≤40 (simply stated as "1"), "Medium" for scores ranging from 41 to 64 (simply stated as "2"), and "High" for scores ≥65 (simply stated as "3"). All statistics were performed using STATISTICA Statsoft Inc. Statistical significance was set at $p<0.05$.

### Ethical Standards

This study was approved by the Umbria region's ethics committee (CEAS, Comitato Etico delle Aziende Sanitarie dell'Umbria) and was performed in accordance with the ethical standards laid down in the Declaration of Helsinki of 1975, as revised in 1983. All persons gave written informed and voluntary consent prior to inclusion in the study. Details that might disclose the identity of subjects under study have been omitted.

## RESULTS

In the Prenatal Medicine Outpatients Unit, 284 (81%) of the 352 women who were contacted resulted eligible (based on the inclusion criteria); 85 of the eligible candidates (30%) agreed to take part in the study. Reasons for refusing to participate were: a) lack of time or of interest in the study protocol, b) belief they would never get depressed, and c) partner's resistance. Tests were completed, including follow-up at the third month postpartum, by 54/85 enrolled women (63.5%). The main reason for dropping out was the lack of time to complete the longer test, the MMPI-2. Socio-demographic features and delivery details are reported in Table 1.

Analysis of the prevalence conducted in the first week after delivery (EPDS FW) showed that 11% of the subjects presented a probable PPD, among which 5.5% being in form of minor depression (EPDS score 13-14), and 5.5% of major depression (EPDS scores ≥15); 30% of the evaluated women had developed a possible PPD

**Table 1.** Socio-demographic data and details of delivery in the study cohort

| | |
|---|---|
| Mean age (years) | 32.9 |
| Education (%) | |
| Primary School | 1.9 |
| Secondary School | 42.5 |
| Graduate | 53.7 |
| Post-graduate | 1.9 |
| Employment Status (%) | |
| Employee | 51.9 |
| Self-employed | 5.4 |
| Freelance professional | 27.8 |
| Manager | 1.9 |
| Student | 1.9 |
| Unemployed | 11.1 |
| Nazionality (%) | |
| Italian | 90.7 |
| Foreign | 9.3 |
| Romanian | 40 |
| Other | 60 |
| Marital status (%) | |
| Married | 74.1 |
| Co-habiting | 22.1 |
| Divorced | 1.9 |
| Single | 1.9 |
| Primipara (%) | 44.4 |
| Delivery details (%) | |
| Natural | 55.6 |
| Medically assisted | 44.4 |
| Caesarian Section | 57.7 |
| Vacuum delivery | 3.8 |
| Analgesics during labour | 23.1 |
| Induced by drugs | 15.4 |

(EPDS scores 9-12). Analysis of the prevalence at three months after delivery (EPDS FU) showed that a total of 16.7% of the women had a probable PPD, among which 9.3% being in form of minor depression, and 7.4% of major depression; 24.1% of the evaluated women had an a possible PPD. The prevalence of PPD was higher in women with APD, measured to have EPDS Pre test score ≥9. Also in women with EPDS Pre score ≥14, the percentage of subjects developed PPD was higher, but not statistically significant. For a detailed description of the prevalence data, see a previous study by Elisei et al. Table 2 reports the results of the Mann-Whitney U independent test between the two groups (range 0-8 for non-depressed women, and ≥9 for depressed) for EPDS administered at the three time-points and the related clinical and content MMPI-2 scales. Only significant correlations are shown. Table 2 does not show the results of correlation between EPDS Pre with the cut-off of 14 and the clinical and content MMPI-2 scales, as the Mann-Whitney U test cannot be applied when one group is small in number. The same links emerged with the Spearman R Correlation test.

MMPI-2 scores are shown in Cartesian distribution to illustrate how both the correlation and significant differences between EPDS and MMPI-2 values are present at the same time (Figure 2).

**Table 2.** P values of Mann-Whitney U Test and Spearman R Correlation for EPDS (PRE, FW, FU, erinatal depression) and the clinical and content MMPI-2 scales

| | Mann-Whitney U Test | Spearman Correlation |
|---|---|---|
| | *Cut-off group independence* | *Correlation* |
| PRE | MA (0.029), CYN (0.042), ASP (0.050), WRK (0.013), TRT (0.024). | MA (0.30), CYN (0.28), ASP (0.27), WRK (0.34), TRT (0.31). |
| FW | PA (0.021), LSE (0.017), WRK (0.011); TRT (0.002). | PA (0.32), LSE (0.33), WRK (0.35); TRT (0.42). |
| FU | FRS (0.006), OBS (0.010), DEP (0.025), WRK (0.013), TRT (0.024). | FRS (0.38), OBS (0.36), DEP (0.31), WRK (0.34), TRT (0.31). |
| Perinatal depression | | FRS (0.36), OBS (0.33), DEP (0.30), WRK (0.39), TRT (0.39). |

PRE: administered during the last trimester; FW: administered in the first week after delivery; FU: administered up to three months after delivery; MA: masculinity-femininity; CYN: cynicism; ASP: antisocial practices; WRK: work interference; TRT: negative treatment indicators; PA: paranoia; LSE: low self-esteem; FRS: fears/phobias; OBS: obsessiveness

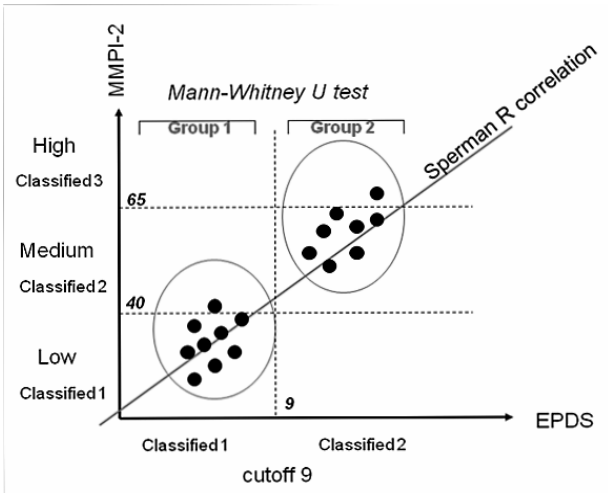


**Figure 2.** EPDS and MMPI-2 values plotted against significant MMPI-2 variables.

Finally, just for example, in Figure 3 we show the Obs (obsessiveness) content scale distribution histograms with percentage frequencies on the left, number of patients on the right, and different distribution frequencies in the Low (L), Medium (M) and High (H) scores of MMPI-2: non-depressed women (EPDS 0-8) are not present in the High (H) score group, while depressed women (EPDS ≥9) are disappeared in the L score group. These findings demonstrate that non-depressed women show low Obs content scale values and that depressed women show medium-high Obs content scale values. Similar distribution histograms can be constructed with all clinical and content MMPI-2 scales that resulted significant.

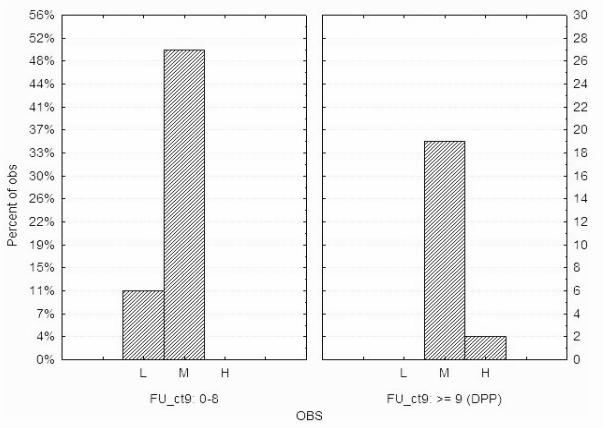


**Figure 3.** Distribution histograms of Obsessiveness (Obs) MMPI-2 content scale with EPDS ranges 0-8 (non-depressed women) and ≥9 (depressed women).

## DISCUSSION

The results of the present study show that: a) women with APD (i.e. with EPDS Pre ≥9) present high scores on Ma (hypomania), Cyn (cynicism), and Asp (antisocial practices) scales; b) women with early onset PPD (i.e. with EPDS FW ≥9) have high scores on Pa (paranoia), and Lse (low self-esteem) scales; and c) women with late onset PPD (i.e. with EPDS FU ≥9) show high scores on Frs (fears/phobias), Obs (obsessiveness), and Dep (depression) scales.

The link between high scores on MMPI-2 Ma, Cyn, and Asp scales, and APD describe a "dysphoric depression" profile (Meuti 2014) (characterized by dysphoria, hyperactivity, narcissism, excessive anger, hostility, irritability, suspiciousness, manipulativity, emotional immaturity, and interpersonal susceptibility), which is often found in subjects with borderline personality disorder (BPD) and, more generally, in patients with cluster B personalities. Relationship between BPD and perinatal depression has been described in literature (Newman 2007, Meuti 2014, Niolu 2014). These cluster B personalities pregnant women have difficulty to the reorganization of identity and relationship that would be required during pregnancy and motherhood (Fonagy 2004). These pregnant women or mothers experience difficulties in understanding the others' emotional states and have oscillations between states of hostility, anger, helplessness, and dissociative withdrawal which put into question the sense of continuity of the self (Meuti 2014). Also theories that hypothesize that APD is linked to pregnant women's social and environmental problems (Robertson 2004, Niolu 2014, Lee 2000, Grussu 2009) may account for its correlation with Cyn and Asp. In fact, negative socio-environmental factors (such as a history of traumatic experience, abuse, neglect, domestic violence) could "generate" a character vulnerability that manifests in an abnormal response to pregnancy and childbirth.

The link between high scores on MMPI-2 Pa and Lse scales and early onset PPD describe a "negativistic depression" profile characterized by depression, anger, rigidity, distrust, susceptibility, sullenness, interpersonal sensitivity, hostility, suspiciousness, ideas of reference (or persecutory ideation in response to stressful situations), and feelings of unattractiveness, inadequacy, and low self-confidence; these features are frequently found in subjects with passive-aggressive (negativistic) personality traits/disorder. Passive-aggressives manifest their anger indirectly, deflecting it. Paranoid passive-aggressives use the mechanism of projection as a vehicle for the indirect expression of hostility to others in the form of blaming. They project their anger and self-blame onto others so that "I criticize myself" becomes "You criticize me" and "I blame and dislike you for that" (Kantor 2002). The new mother might experience the childbirth as a physically and psychologically shocking event which "forced" her to face the completely new reality of a baby to be taken care of. The mother affected by early onset PPD are unable of this responsibility, as to detach herself from everyday reality, of build an effective relationship with her child and respond to his needs. In some stressful situations, the mother may also develop transitory persecutory ideas and be convinced, for example, that the child is seriously ill.

Late onset PPD is rather different. In our study, it is linked to high scores on MMPI-2 Frs, Obs, and Dep scales. This link describe a "psychoastenic depression" profile (Meuti 2014) characterized by chronic depressive thoughts and cognition with feelings of inadequacy, uselessness, hopelessness, uncertainty, guilt or remorse, low self-confidence and stress coping ability, apathy, inhibition, anxiety, fears or phobias, ruminations about decisions and problems, and inability to control obsessional toughts. These features are frequently found in subjects with obsessive-compulsive/dependent personality traits/disorders, i.e. in cluster C personalities (Akman 2007, Uguz 2009, Meuti 2014, Niolu 2014). These women show a tendency to experience discomfort with respect to modification and relational identity that occur during the transition and the change of parenthood's role, experiencing feelings low self-esteem, associated with a low sense of autonomy, fatigue, rumination at the level of thought to counter the belief of "not being able" to face a new situation (Meuti 2014, Niolu 2014). This inability to change generates a "lack of identity" that can overwhelm patients with feelings of guilt and become the basis for recurring concerns (particularly about the health of the child) which could eventually lead to slipping into depressive conditions with psychasthenic features (Meuti 2014, Niolu 2014). From a similar psychopathological background, a postpartum obsessive-compulsive disorder could occur too, either as related to PPD (Niolu 2014) or as totally independent (Abramowitz 2003), often characterized by obsessive ideations and controlling compulsions about the health of the child (Gaynes 2005).

Several limitations of our study deserve brief mention. First, the small sample size suggests caution in the interpretation and generalizability of our results, and the low participation rate may limit the external validity of the study. Secondly, many personality features could not have been examined or explained even by complex instruments such as MMPI-2. Lastly, the reasons why we found high scores on MMPI-2 Wrk (work interference) and Trt (negative treatment indicators) scales have not been analyzed.

## CONCLUSIONS

In our understanding, perinatal depressive disorders are much more complex than previously thought. Personality traits and personality disorders features underlying the perinatal depression may represent the vulnerability mechanism with which the disorder itself is established, determining the clinical manifestation, course, and treatment response (Meuti 2014, Niolu 2014) . Despite the sample size is too small to draw any firm conclusions about the inferences of interest, our results preliminary would suggest that: a) cluster B personality structures, particularly BPD features, may represent a vulnerability factor for APD; b) passive-aggressive (negativistic) personality features may be a vulnerability factor for early onset PPD; and c) cluster C personality structures, particularly obsessive-compulsive/dependent personality disorder features, may act as a vulnerability factor for late onset PPD. In conclusion, future research will need to detect more deeply the personality structures and the psychopathological dynamics underlying perinatal depression and, more generally, perinatal psychiatric disorders, so as to promote focused and efficient preventive interventions, and to provide adequate and specific treatments.

***Acknowledgements:***

Special thanks should be referred to Gian Carlo Di Renzo, MD, PhD, Centre of Perinatal & Reproductive Medicine, Department of Obstetrics & Gynaecology, University of Perugia, for support and help in collecting study data.

***Conflict of interest:*** *None to declare.*

***Contribution of individual authors:***

Emanuela Lucarini: made substantial contributions to conception and designof the research project, to the analysis and interpretation of data, participated in drafting the article and in revising it critically for important intellectual content.

Luigi Attademo: made substantial contributions to conception and design of the research project, participated in drafting the article and in revising it critically for important intellectual content.

Giulio Spollon: made substantial contributions to the acquisition of data and participated in drafting the article.

Patrizia Moretti: made substantial contributions to conception and design of the research project, participated in revising the draft critically for important intellectual content.

Sandro Elisei: made substantial contributions to conception and design of the research project, participated in revising the draft critically for important intellectual content.

Roberto Quartesan: made substantial contributions to conception and design of the research project, participated in revising the draft critically for important intellectual content and gave the first approval of the version to be submitted.

Alfonso Tortorella: made substantial contributions to conception and design of the research project, participated in revising the draft critically for important intellectual content and gave final approval of the version to be submitted and any revised version.

## References

1. *Abdollahi F, Rezai Abhari F, Zarghami M: Postpartum Depression Effect on Child Health and Development. Acta Medica Iranica 2017; 55: 109-114.*
2. *Abramowitz JS, Schwartz SA, Moore KM, Luenzmann KR: Obsessive-compulsive symptoms in pregnancy and the puerperium: a review of the literature. Journal of Anxiety Disorders 2003; 17: 461-478.*
3. *Adewuya AYO, Ogunranti AB, Lawal AM: Prevalence of postnatal depression in Western Nigerian women: a controlled study. International Journal of Psychiatry in Clinical Practice 2005; 9: 60-64.*
4. *Akman C, Uguz F, Kaya N: Postpartum-onset major depression is associated with personality disorder. Comprehensive Psychiatry 2007; 48: 343-347.*
5. *American Psychiatric Association: Diagnostic and statistical manual of mental disorders, 4th edition. APA, Washington DC, 1994.*
6. *American Psychiatric Association: Diagnostic and statistical manual of mental disorders, 5th edition. APA, Arlington VA, 2013.*
7. *Austin MP: Antenatal screening and early intervention for "perinatal" distress, depression and anxiety: where to from here?. Archives of Women's Mental Health 2004; 7: 1-6.*

8. *Ayers S, Joseph S, McKenzie-McHarg K, Slade P, Wijma K: Post-traumatic stress disorders following childbirth: current issues and recommendations for future research. Journal of Psychosomatic Obstetrics and Gynecology 2008; 29: 240-50.*
9. *Banti S, Mauri M, Oppo A, Borri C, Rambelli C, Ramacciotti D et al.: From the third month of pregnancy to 1 year postpartum. Prevalence, incidence, recurrence and new onset of depression. Results from the Perinatal Depression-Research & Screening Unit study. Comprehensive Psychiatry 2011; 52: 343-351.*
10. *Beck CT: Revision of postpartum depression predictors inventory. Journal of Obstetric, Gynecologic, and Neonatal Nursing 2002; 31: 394-402.*
11. *Beeston L, Hugh-Jones S, Gough B: The impact of maternal postnatal depression on men and their ways of fathering: an interpretative phenomenological analysis. Psychology & Health 2014; 29: 717-735.*
12. *Benvenuti P, Ferrara M, Niccolai C, Valoriani V, Cox JL: The Edinburgh Postnatal Depression Scale: validation for an Italian sample. Journal of Affective Disorders 1999; 53: 137-141.*
13. *Benvenuti P: Psychopathology related to reproductive functions. In Cassano GB, Pancheri P, Pavan L, Pazzagli A, Ravizza L, Rossi R: Italian Textbook on Psychiatry, 2nd edition – Elettronic Edition. Elsevier-Masson Editors, Milan, 2002.*
14. *Betts KS, Williams GM, Naiman JM, Alati R: The relationship between maternal depressive, anxious, and stress symptoms during pregnancy and adult offspring behavioral and emotional problems. Depression and Anxiety 2015; 32: 82-90.*
15. *Bilszta JL, Tang M, Meyer D, Milgrom J, Ericksen J, Buist AE: Single motherhood versus poor partner relationship: outcomes for antenatal mental health. The Australian and New Zealand Journal of Psychiatry 2008; 42 : 56-65.*
16. *Bloch M, Rotenberg N, Koren D, Klein E: Risk factors for early postpartum depressive symptoms. General Hospital Psychiatry 2006; 28: 3-8.*
17. *Bloch M, Schmidt PJ, Danaceau M, Murphy J, Nieman L, Rubinow DR: Effects of gonadal steroids in women with a history of postpartum depression. The American Journal of Psychiatry 2000; 157: 924-30.*
18. *Bowen A, Muhajarine N: Antenatal depression. The Canadian Nurse 2006; 102: 26-30.*
19. *Boyd RC, Le HN, Somberg R: Review of screening instrument for postpartum depression. Archives of Women's Mental Health 2005; 8: 141-153.*
20. *Butcher JN, Dahlstrom WG, Graham J, Tellegen AM, Kaemmer B: The Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for Administration and Scoring. University of Minnesota Press, Minneapolis MN, 1989.*
21. *Butcher JN, Williams C: Fundamentals for the interpretation of MMPI2 and MMPI-A. Giunti Editors, Florence, 1996.*
22. *Carpinello B, Pariante C, Serri F, Costa G, Carta MG: Validation of the Edinburgh Postnatal Depression Scale in Italy. Journal of Psychosomatic Obstetrics and Gynecology 1997; 18: 280-285Cardwell MS: Eating disorders during pregnancy. Obstetrical & Gynecological Survey 2013; 68: 312-323.*
23. *Cardwell MS: Eating disorders during pregnancy. Obstetrical & Gynecological Survey 2013; 68: 312-323.*
24. *Castro Couto T, Cardoso MN, Brancaglion MY, Faria GC, Garcia FD, Nicolato R, De Miranda DM, Corr?a H: Antenatal depression: Prevalence and risk factor patterns across the gestational period. Journal of Affective Disorders 2016; 192: 70-5.*
25. *Chaudron LH, Nirodi N: The obsessive-compulsive spectrum in the perinatal period: a prospective pilot study. Archives of Women's Mental Health 2011; 13: 403-10.*
26. *Chaudron LH, Pies RW: The relationship between postpartum psychosis and bipolar disorder: a review. The Journal of Clinical Psychiatry 2003; 64: 1284-92.*
27. *Choi SK, Kim JJ, Park YG, Ko HS, Park IY, Shin JC: The simplified Edinburgh Postnatal Depression Scale (EPDS) for antenatal depression: is it a valid measure for pre-screening?. International Journal of Medical Sciences (electronic resource) 2012; 9: 40-46.*
28. *Coelho HF, Murray L, Royal-Lawson M, Cooper PJ: Antenatal anxiety disorder as a predictor of postnatal depression: a longitudinal study. Journal of Affective Disorders 2011; 129: 348-353.*
29. *Coker E, Abraham S: Body weight dissatisfaction before, during and after pregnancy: a comparison of women with and without eating disorders. Eating and Weight Disorders 2015; 20: 71-9.*
30. *Cox JL, Holden JM, Sagovsky R: Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. The British Journal of Psychiatry 1987; 150: 782-786.*
31. *De Fidio DI, Magnani E, Mambelli M, Sciruicchio V, Pancheri P: MMPI-2, comorbidity and correlations in users of territorial psychiatric and drug abuse services. Italian psychopathology Journal 2005; 11: 184-194.*
32. *Deng AW, Jiang TT, Luo YP, Xiong R, Chen WZ: Prevalence and risk factors of postpartum depression in Tianhe District of Guangzhou. Journal of Southern Medical University 2014; 34: 113-116.*
33. *Dennis CL, Ross L: Women's perceptions of partner support and conflict in the development of postpartum depressive symptoms. Journal of Advanced Nursing 2006; 56: 588-99.*
34. *Eagles JM, Lee AJ, Raja EA, Millar HR, Bhattacharya S: Pregnancy outcomes of women with and without a history of anorexia nervosa. Psychological Medicine 2012; 42: 2651-2660.*
35. *Easter A, Bye A, Taborelli E, Corfield F, Schmidt U, Treasure J et al.: Recognising the symptoms: How common are Eating Disorders in Pregnancy?. European Eating Disorder Review 2013; 21: 340-4.*
36. *Eberhard-Gran M, Eskild A, Tambs K, Opjordsmoen S, Samuelson SO: Review of validation studies of Edinburgh Postnatal Depression Scale. Acta Psychiatrica Scandinavica 2001; 104: 243-249.*
37. *Elisei S, Lucarini E, Murgia N, Ferranti L, Attademo L: Perinatal depression: a study of prevalence and of risk and protective factors. Psychiatria Danubina 2013; 25 Suppl 2: 258-262.*
38. *Falah-Hassani K, Shiri R, Dennis CL: The prevalence of antenatal and postnatal co-morbid anxiety and depression: a meta-analysis. Psychological Medicine 2017; 17: 1-13.*
39. *Fisher J, De Mello MC, Patel V, et al: Prevalence and determinants of common perinatal mental disorders in women in low and lower middle-income countries: a systematic review. Bulletin World Health Organization 2012; 90: 139-49.*

40. Fleming N, O'Driscoll T, Becker G, Spitzer RF: Adolescent Pregnancy Guidelines. Journal of Obstetrics and Gynaecology Canada 2015; 37: 740-756.
41. Fonagy P, Gergely G, Jurist EL, Target M: Mentalization, affective regulation and self-development. Raffello Cortina, Milano, 2004.
42. Friedman AF, Levak RW, Nichols DS, Webb JT: Psychological Assessment With the MMPI-2. Routledge, London, 2001.
43. Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T: Perinatal depression: a systematic review of prevalence and incidence. Obstetrics and Gynecology 2005; 106: 1071-1083.
44. Gaynes BN, Gavin N, Meltzer-Brody S, Lohr KN, Swinson T, Gartlehner G et al.: Perinatal depression: prevalence, screening accuracy and screening outcomes. Evidence report/technology assessment 2005; 119: 1-8.
45. Gibbons JD: Nonparametric Statistical Inference, 2nd edition. M. Dekker, New York, 1985.
46. Gibson J, McKenzie-McHarg K, Shakespeare J, Price J, Gray R: A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. Acta Psychiatrica Scandinavica 2009; 119 : 350-364.
47. Glasheen C, Richardson GA, Kim KE, Larkby CA, Swartz HA, Day NL: Exposure to maternal pre- and postnatal depression and anxiety symptoms: risk for major depression, anxiety disorders, and conduct disorder in adolescent offspring. Development and Psychopathology 2013; 25: 1045-1063.
48. Goodman JH: Postpartum depression beyond the early postpartum period. Journal of Obstetric, Gynecologic, and Neonatal Nursing 2004; 33: 410-420.
49. Grace SL, Evindar A, Stewart DO: The effect of postpartum depression on child cognitive development and behavior: a review and critical analysis of the literature. Archives of Women's Mental Health 2003; 6: 263-74.
50. Gregory RJ: Psychological Testing: History, Principles, and Applications, 5th edition. Pearson, Boston MA, 2007.
51. Grigoriadis S, VonderPorten EH, Mamisashvili L, Tomlinson G, Dennis CL, Koren G et al.: The impact of maternal depression during pregnancy on perinatal outcomes: a systematic review and meta-analysis. Journal of Clinical Psychiatry 2013; 74: 321-41.
52. Grussu P, Quatrano RM: Prevalence and risk factors for a high level of postnatal depression symptomatology in Italian women: a sample drawn from ante-natal classes. European Psychiatry 2009; 24: 327-333.
53. Grussu P, Quatraro RM: Maternity blues in Italian primipara women: symptoms and mood states in the first fifteen days after childbirth. Health Care for Women International 2013; 34: 556-76.
54. Gupta S, Kishore J, Mala YM, Ramji S, Aggarwal R: Postpartum depression in north Indian women: prevalence and risk factors. Journal of Obstetrics and Gynaecology of India 2013; 63: 223-229.
55. Hathaway SR, McKinley JC: Minnesota Multiphasic Personality Inventory-2. Handbook. University of Minnesota Press, Minneapolis. (Trad. it. Pancheri P, Sirigatti S: Minnesota Multiphasic Personality Inventory-2. Giunti Editors, Florence, 1995.)
56. Heron J, Robertson Blackmore E, McGuinness M, Craddock N, Jones I: No" latent period" in the onset of bipolar affective puerperal psychosis. Archives of Women's Mental Health 2007; 10: 79-81.
57. Iliadis SI, Koulouris P, Gingnell M, Sylvén SM, Sundström-Poromaa I, Ekselius L et al.: Personality and risk for postpartum depressive symptoms. Archives of Women's Mental Health 2015; 18: 539-46.
58. Josefsson A, Larsson C, Sydsjö G, Nylander PO: Temperament and character in women with postpartum depression. Archives of Women's Mental Health 2007; 10:3-7.
59. Kantor M: Indirect anger – Its Manifestations. In Kantor M: Passive-aggression: A Guide for the Therapist, the Patient, and the Victim, 33-50. Greenwood, Westport CT, 2002.
60. Kawai E, Takagai S, Takei N, Itoh H, Kanayama N, Tsuchiya KJ: HBC Study Team. Maternal postpartum depressive symptoms predict delay in non-verbal communication in 14-month-old infants. Infant Behavioral Development 2017; 46: 33-45.
61. Keiller SW, Graham JR: The meaning of low scores on MMPI-2 clinical scales of normal subjects. Journal of Personality Assessment 1993; 61: 211-223.
62. Klehr V, Nyunt SZ, Broekman B, Chee C: Prevalence and risk factors for antenatal depression in pregnant women attending National University Hospital, Singapore. European Psychiatry 2012; 27: 1210.
63. Kendall MG: Rank Correlation Methods. C. Griffin, London, 1948.
64. Kettunen P, Koistinen E, Hintikka J: The Connections of Pregnancy-, Delivery-, and Infant-Related Risk Factors and Negative Life Events on Postpartum Depression and Their Role in First and Recurrent Depression. Depression Research and Treatment 2016; 2016: 2514317.
65. Klainin P, Arthur DG: Postpartum depression in Asian cultures: a literature review. International Journal of Nursing Study 2009; 46 : 1355-73.
66. Korhonen M, Luoma I, Salmelin R, Tamminen T: A longitudinal study of maternal prenatal, postnatal and concurrent depressive symptoms and adolescent well-being. Journal of Affective Disorders 2012; 136: 680-92.
67. Le Strat Y, Dubertret C, Le Foll B: Prevalence and correlates of major depressive episode in pregnant and postpartum women in the United States. Journal of Affected Disorders 2011; 135: 128-38.
68. Leach LS, Poyser C, Cooklin AR, Giallo R: Prevalence and course of anxiety disorders (and symptom levels) in men across the perinatal period: A systematic review. Journal of Affective Disorders 2016; 190: 675-86.
69. Lee DT, Yip AS, Leung TY, Chung TK: Identifying women at risk of postnatal depression: prospective longitudinal study. Hong Kong Medical Journal 2000; 6: 349-354.
70. Lee DTS, Chan SSM, Sahota DS, Yip ASK, Tsui M, Chung TKH: A prevalence study of antenatal depression among Chinese women. Journal of Affective Disorders 2004; 2: 93-9.
71. Lovestone S, Kumar R: Postnatal psychiatric illness: the impact on partners. The British Journal of Psychiatry 1993; 163: 210-216.
72. Maliszewska K, Bidzan M, Œwi¹tkowska-Freund M, Preis K: Personality type, social support and other correlates of risk for affective disorders in early puerperium. GineKologia Polska 2016; 87: 814-819.
73. Marino M, Battaglia E, Massimino M, Aguglia E: Risk factors in post partum depression. Italian Psychiatry Journal 2012; 47: 187-194.

74. McGuinness M, Blissett J, Jones C: OCD in the perinatal period: is postpartum OCD (ppOCD) a distinct subtype? A review of the literature. Behavioural and Cognitive Psychotherapy 2011; 39: 285-310.
75. Meltzer-Brody S, Maegbaek ML, Medland SE, Miller WC, Sullivan P, Munk-Olsen T: Obstetrical, pregnancy and socio-economic predictors for new-onset severe postpartum psychiatric disorders in primiparous women. Psychological medicine 2017; 23: 1-15.
76. Meuti V, Marini I, Grillo A, Lauriola M, Leone C, Giacchetti N et al.: MMPI-2: cluster analysis of personality profiles in perinatal depression—preliminary evidence. The Scientific World Journal (electronic resource) 2014; 2014: 964210.
77. Milgrom J, Gemmill AW, Bilszta JL, Hayes B, Barnett B, Brooks J et al.: Antenatal risk factors for postnatal depression: a large prospective study. Journal of Affective Disorders 2008; 108: 147-157.
78. Morrill ES, Nickols-Richardson HM: Bulimia nervosa during pregnancy: a review. Journal of the American Dietetic Association 2001; 101: 448-454.
79. Munk-Olsen T, Laursen TM, Meltzer-Brody S, Mortensen P, Jones I: Psychiatric disorders with postpartum onset: possible early manifestation of bipolar affective disorders. Archives of General Psychiatry 2012; 69: 428-34.
80. Murray D, Cox JL: Screening for depression during pregnancy with the Edinburgh Depression Scale (EPDS). Journal of Reproductive and Infant Psychology 1990; 8: 99-107.
81. Murray L, Cooper PJ: Postpartum depression and child development. Psychological Medicine 1997; 27: 253-260.
82. Murray L, Sinclair D, Cooper P, Ducournau P, Turner P, Stein A: The socio-emotional development of 5-year-old children of postnatally depressed mothers. Journal of Child Psychology and Psychiatry and allied disciplines 1999;40: 1259-1271.
83. Nareen HE, Kabir ZN, Forsell Y, Edborg M: Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: a population based study in rural Bangladesh. BMC Women's Health 2011; 11: 22.
84. National Institute for Health an clinical Excellence (NICE). Antenatal and postnatal mental health: clinical management and service guidance. In: NICE Clinical Guidelines, no. 45. Leicester, UK: British Psychological Society; 2014. Available at: http://nice.org.uk/guidance/cg192. Accessed April 25, 2017.
85. Newman LK, Stevenson CS, Bergman LR, Boyce P: Borderline personality disorder, mother-infant interaction and parenting perceptions: preliminary findings. The Australian and New Zealand Journal of Psychiatry 2007; 41: 598-605.
86. Nicholson WK, Setse R, Hill-Briggs F, Copper LA, Strobino D, Powe NR: Depressive symptoms and health-related quality of life in early pregnancy. Obstetrics and Gynecology 2006; 107: 798-806.
87. Niolu C, Bianciardi E, Croce Nanni R: Mood disorders in the female life cycle. In Siracusano A: Psychiatry Textbook, 2nd edition, 384-418. Il Pensiero Scientifico Editore, Rome, 2014.
88. O'Hara MW, Swain AM: Rates and risk of postpartum depression – a meta-analysis. International Review of Psychiatry 1996; 8: 37-54.
89. O'Hara MW, Wisner KL: Perinatal mental illness: definition, description and aetiology. Best Practice and Research: Clinical Obstetrics and Gynaecology 2014; 28:3-12.
90. Pancheri P, De Fidio D: From Minnesota Multiphasic Personality Inventory to the "Panda": the automated version of the MMPI-2. Italian Psychopathology Journal 1999; 5: 143-154.
91. Paschetta E, Berrisford G, Coccia F, Whitmore J, Wood AG, Pretlove S et al.: Perinatal psychiatric disorders: an overview. American Journal of Obstetrics and Gynecology 2014; 210: 501-509.
92. Paulson JF, Dauber S, Leiferman JA: Individual and combined effects of postpartum depression in mothers and fathers on parenting behavior. Pediatrics 2006; 118:659-68.
93. Pearson RM, Evans J, Kounali D, Lewis G, Heron J, Ramchandani PG et al.: Maternal depression during pregnancy and the postnatal period: risks and possible mechanisms for offspring depression at age 18 years. JAMA Psychiatry 2013; 70: 1312-1319.
94. Poçan AG, Aki OE, Parlakgümüs AH, Gerekli Glu C, Dolgun AB: The incidence of and risk factors for postpartum depression at an urban maternity clinic in Turkey. International Journal of Psychiatry in Medicine 2013; 46: 179-194.
95. Reck C, Stehle E, Reinig K, Mundt CJ: Maternity blues as a predictor of DSM-IV depression and anxiety disorders in the first three months postpartum. Journal of Affective Disorders 2009; 113: 77-87.
96. Reid KM, Taylor MG: Social support, stress, and maternal postpartum depression: A comparison of supportive relationships. Social Science Research 2015; 54: 246-62.
97. Righetti-Veltema M, Conne-Perréard E, Bousquet A, Manzano J: Postpartum depression and mother-infant relationship at 3 months old. Journal of Affective Disorders 2002; 70: 291-306.
98. Robertson E, Grace S, Wallington T, Stewart DE: Antenatal risk factors for postpartum depression: a synthesis of recent literature. General Hospital Psychiatry 2004; 26: 289-295.
99. Ross LE, McLean LM: Anxiety disorders during pregnancy and the postpartum period: a systematic review. Journal of Clinical Psychiatry 2006; 67: 1285-98.
100. Rubertsson C, Hellström J, Cross M, Sydsjö G: Anxiety in early pregnancy: prevalence and contributing factors. Archives of Women's Mental Health 2014; 17: 221-228.
101. Russell EJ, Fawcett JM, Mazmanian D: Risk of obsessive-compulsive disorder in pregnant and postpartum women: a meta-analysis. The Journal of Clinical Psychiatry 2013; 74: 377-385.
102. Sadat Z, Abedzadeh-Kalahroudi M, Kafaei Atrian M, Karimian Z, Sooki Z: The Impact of Postpartum Depression on Quality of Life in Women After Child's Birth. Iranian Red Crescent Medical Journal 2014; 16 : e14995.
103. Sanger C, Iles JE, Andrew CS, Ramchandani PG: Associations between postnatal maternal depression and psychological outcomes in adolescent offspring: a systematic review. Archives Women's Mental Health 2015; 18:147-62.
104. Santos Junior HP, Rosa Gualda DM, De Fátima Araújo Silveira M, Hall WA: Postpartum depression: the (in) experience of Brazilian primary healthcare professionals. Journal of Advanced Nursing 2013; 69:1248-1258.

105. Sawyer A, Ayers S, Smith H: Pre- and postnatal psychological wellbeing in Africa: a systematic review. Journal of Affected Disorders 2010; 123: 17-29.
106. National Guideline Clearinghouse (NGC). Guideline summary: Management of perinatal mood disorders. A national clinical guideline. In: National Guideline Clearinghouse (NGC). Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 Mar 01. Available at: https://www.guideline.gov. Accessed April 25, 2017.
107. Seng JS, Low LK, Sperlich M, Ronis DL, Liberzon I: Post-traumatic stress disorder, child abuse history, birthweight and gestational age: a prospective cohort study. An International Journal of Obstetrics and Gynaecology 2011; 118: 1329-39.
108. Silverman ME, Reichenberg A, Savitz DA, Cnattingius S, Lichtenstein P, Hultman CM et al.: The risk factors for postpartum depression: A population-based study. Depression and Anxiety 2017; 34(2): 178-187.
109. Skalkidou A, Hellgren C, Comasco E, Sylvéon S, Sundström Poromaa I: Biological aspects of postpartum depression. Women's Health 2012; 8: 659-72.
110. Smith-Nielsen J, Tharner A, Steele H, Cordes K, Mehlhase H, Vaever MS: Postpartum depression and infant-mother attachment security at one year: The impact of co-morbid maternal personality disorders. Infant Behavior and Development 2016; 44: 148-58.
111. Speisman BB, Storch EA, Abramowitz JS: Postpartum obsessive-compulsive disorder. Journal of Obstetric, Gynecologic, and Neonatal Nursing 2011; 40: 680-690.
112. Spinelli MG: Postpartum psychosis: detection of risk and management. The American Journal of Psychiatry 2009; 166: 405-8.
113. Stowe ZN, Nemeroff CB: Women at risk for postpartum-onset major depression. American Journal of Obstetrics and Gynecology 1995; 173: 639-645.
114. Tebeka S, Le Strat Y, Dubertret C: Developmental trajectories of pregnant and postpartum depression in an epidemiologic survey. Journal of Affective Disorders 2016; 203: 62-8.
115. Töreki A, Andó B, Keresztúri A, Sikovanyecz J, Dudas RB, Janka Z et al.: The Edinburgh Postnatal Depression Scale: Translation and antepartum validation for a Hungarian sample. Midwifery 2013; 29: 308-315.
116. Uguz F, Akman C, Sahingoz M, Kaya N, Kucur R: One year follow-up of post-partum-onset depression: the role of depressive symptom severity and personality disorders. Journal of Psychosomatic Obstetrics and Gynaecology 2009; 30: 141-145.
117. Upadhyaya SK, Sharma A, Raval CM: Postpartum psychosis: risk factors identification. North American Journal of Medical Sciences 2014; 6: 274-277.
118. Vigod SN, Villegas L, Dennis CL, Ross LE: Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review. An International Journal of Obstetrics and Gynaecology 2010; 117: 540-50.
119. Wan MW, Green J: The impact of maternal psychopathology on child-mother attachment. Archives of Women's Mental Health 2009; 12: 123-34.
120. Watson HJ, Von Holle A, Hamer RM, Knoph Berg C, Torgersen L, Magnus P et al.: Remission, continuation, and incidence of eating disorders during early pregnancy: A validation study on a population-based birth cohort. Psychological Medicine 2013; 43: 1723-34.
121. Watson HJ, Von Holle A, Knoph C, Hamer RM, Torgersen L, Reichborn-Kjennerud T et al.: Psychological Factors Associated with Bulimia Nervosa during Pregnancy: An Internal Validation Study. International Journal of Eating Disorders 2015; 48: 654-62.
122. Webster J, Linnane JW, Dibley LM, Pritchard M: Improving antenatal recognition of women at risk for postnatal depression. The Australian & New Zealand Journal of Obstetrics & Gynaecology 2000; 40:409-412.
123. Wenzel A, Haugen EN, Jackson LC, Brendle JR: Anxiety symptom and disorders at eight weeks postpartum. Journal of Anxiety Disorders 2005; 19: 295-311.
124. Witt WP, Deleire T, Hagen EW, Wichmann MA, Wisk LE, Spear HA et al.: The prevalence and determinants of antepartum mental health problems among women in the USA: a nationally representative population-based study. Archives of Women's Mental Health 2010; 13: 425-37.
125. Witt WP, Wisk LE, Cheng ER, Hampton JM, Creswell PD, Hagen EW et al.: Poor prepregnancy and antepartum mental health predicts postpartum mental health problems among US women: a nationally representative population-based study. Women's Health Issues 2011; 21:304-13.
126. Yelland J, Sutherland G, Brown SJ: Postpartum anxiety, depression and social health: findings from a population-based survey of Australian women. BMC Public Health 2010; 10: 771.
127. Zelkowitz P, Milet TH: The course of postpartum psychiatric disorders in women and their partners. The Journal of Nervous and Mental Disease 2001; 189: 575-82.

*Correspondence:*

*Emanuela Lucarini, MD*
*Division of Psychiatry, Clinical Psychology and Rehabilitation,*
*Department of Medicine, University of Perugia*
*Ellisse Edificio A Piano 8, Loc. Sant'Andrea delle Fratte, 06156 Perugia, Italy*
*E-mail: emanuela.luc@gmail.com*