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#### Conflict of interest

The authors declare that they have no conflict of interest nor that they have received compensation from third parties for the creation of this article.

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Original article

# The first systematic Italian screening for post-partum depression: results from the first 6 months of the Northern Italy "Regional Screening for Post Partum Depression" project and networking

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## Summary

**Objective.** Post-partum depression involves 10-20% of pregnant women worldwide with serious consequences for mother and newborn if untreated. The incidence in the Italian population was not attested yet and this first systematic screening aimed at measuring it.

**Methods.** Pregnant women from the districts of Lecco, Monza and Vimercate (Lombardy) were screened at T1 (first trimester), T2 (delivery) and T3 (40 days post-partum) with the EPDS. Those EPDS-positive had a psychological examination, tested with the HAM-D and offered psychological follow-up in case of depression rating from low to moderate; if moderate to severe, they were referred for psychiatric evaluation.

**Results.** 4480 women gave birth during the index period and 4757 EPDS were completed. At T1, 75 women (8.6%) scored EPDS-positive, 167 (7.1%) at T2 and 78 (8.9%) at T3. At the HAM-D 23.5% had low/moderate depression, 5% moderate/severe depression and accepted a psychiatric follow-up.

Conclusions. The Italian incidence was lower compared to international data.

Key words: post-partum depression, Italy, epidemiology

# Introduction

Post partum depression (PPD) is a serious mental health concern that involves 10-20% of pregnant women worldwide. Adverse outcomes in both mother and child, if untreated, include physical (e.g. Intra-utero growth restriction-IUGR, low birth weight <sup>1</sup> and psychological short and long-term effects <sup>2,3,4,5</sup>. Newborns might appear more irritable or less reactive to stimuli, while during their personal development they might experience internalizing and externalizing problems reaching psychiatric issues as depression, anxiety disorders and behavioral disturbance to personality disorders.

Despite the relevance of PPD both in terms of incidence and clinical adverse implications, screening programs for detecting PPD are not routinely planned within Obstetric Departments, even if their importance have been more and more demonstrated. The most common screening tool is the Edinburgh Post-

Natal Depression Scale (EPDS), a quick self-administered test rating symptoms in the last 7 days.

A systematic screening has never been performed in the Italian context and, as a consequence, a true incidence in the Italian population is still unknown. The Lombardy Region enhanced attention to women's mental health and in 2016 required each Health Trust a systematic evaluation about the burden of perinatal depression.

## Methods

#### Sample

All the women who had access, from December 2017 to May 2018, to Midwife services or Obstetric Departments of the districts of Lecco, Monza and Vimercate (Region of Lombardy) during pregnancy or post partum were offered to take part to the "Regional Screening for Post Partum Depression".

#### Study design (Fig. 1)

This longitudinal study established three times for recruitment: during the first obstetric appointment in the first trimester of pregnancy (T1), during admission for delivery (T2) and at obstetric control after delivery, usually within 40 days after giving birth (T3).

Women were given the EPDS and two dichotomic questions about family (Q1) and personal (Q2) psychiatric history. Women with an EPDS score  $\geq$  12 (cut-off) were invited for a psychological examination. During their psychological appointment, women were clinically evaluated and the level of their depressive symptoms rated through the Hamilton Depression Rating Scale (HAM-D). If the HAM-D score confirmed the presence of depression at a low to moderate level, women were offered psychological treatment. In case of depression from moderate to severe, they were referred for psychiatric evaluation.

#### **Exclusion criteria**

The only criterion of exclusion was a lack of fluency in understanding Italian due to the self-administered design of the screening.

#### **Ethics**

Informed consent of the participants was obtained after the nature of the procedures had been fully explained. None of the participants received a compensation for their contribution and participation was on a voluntary basis. The investigation was carried out in accordance with the latest version of the Declaration of Helsinki. The study was authorized and approved by the Regional Health System (RHS).

#### Test

Edinburgh Postnatal Depression Scale (EPDS) <sup>6</sup>: It consists of ten short statements with four possible responses. The mother chooses which one is closest to how she has been feeling during the past week. The cut-off score is 12 or higher.

#### Results

4480 women gave birth from December 2017 to May 2018 in the districts of Lecco, Monza and Vimercate. 4757 screening were globally completed at T1, T2 and T3 with an acceptance rate of 98.3%. At T1, 75 women (8.6%) scored positive at the EPDS, while at T2 and T3 167 (7.1%) and 78 (8.9%) women had an EPDS score  $\geq$  12 (Fig. 2).

399 women reported a positivity for Q1 (20 of them were

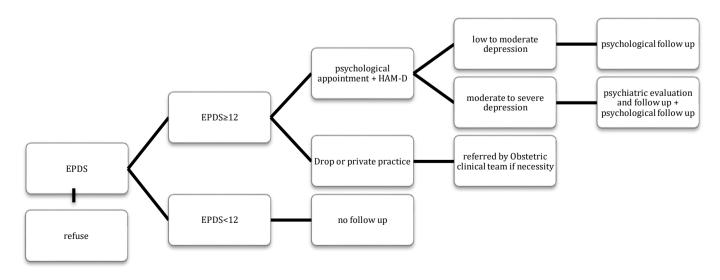
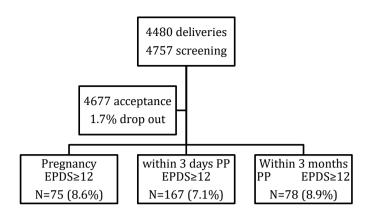


Figure 1. Screening plan.





Screening diagram.

EPDS<sup>+</sup>;p = .083) and 347 for Q2 (60 in EPDS<sup>+</sup>; p < .0001), 161 scored positive to both (31 in EPDS<sup>+</sup>; p < .0001).

In-depth evaluations and networking (Fig. 2)

23.5% of the women, evaluated with the HAM-D during the psychological follow-up, were classified as affected by low/moderate depression and all of them accepted a psychological follow up. Instead, 5% of the women, evaluated with the HAM-D during the psychological follow-up, were classified as affected by moderate/severe depression (5%), referred for psychiatric evaluation and accepted a psychiatric follow-up.

The screening is still ongoing and has involved 18176 screening evaluations at June 30<sup>th</sup>, 2019.

# Discussion

This study documents the first systematic screening for post partum depression led in Italy on the general population and commissioned by the Regional Health System. Its historic importance is double since it is the first time it is possible to attest the real incidence of post partum depression in the Italian population and due to the directive of the Italian National Health System.

The region where it was led (Lombardy) is one of the biggest and most populated in Italy and it was selected as representative of the country.

The incidence detected in this sample is lower than expected from international data. Considering a global positivity at the EPDS, incidence was 8.2% compared to at least 10% documented in the Literature. Analyzing each time of recruitment, during pregnancy incidence was attested at 8.6%, immediately after giving birth at 7.1% and 8.9% within 40 days after delivery. 31% of women classified at risk of developing post partum depression accepted a follow up. After clinical in-depth evaluations 28% of them were diagnosed as affected by depressive disorders.

The amount of women who refused to have a psychological appointment even with a positivity to the EPDS might be

detrimental for the demonstration of a punctual incidence. Otherwise, the aim of a screening is the identification of subjects at risk, who are subsequently offered an in-depth evaluation. From the point of view of the mere evaluation of this screening program, it had an excellent rate of adherence since drop outs were only 1.7%. Furthermore, focusing on clinical implications, 31% of women with a positivity to the screening tool were directly examined during follow up while those who refused follow up reported both treatment in private practice or an improvement in their mental well being, possibly implicating an active involvement in the problem.

Even if this last assumption is speculative, the aim of this project, according to the goal of a screening, implies public awareness and data justifies a cautious satisfaction.

# Conclusion

This is the first systematic screening for post partum depression led in Italy. Its crucial importance highlights an increased attention to this relevant clinical problem and its implications for mothers and newborns. Furthermore, the incidence of this phenomenon has been attested for the first time in the Italian population and it shows to be lower compared to international data.

The Regional Screening Post Partum Depression (RSPPD) Network also includes: Lucia Accorsi. Chiara Arosio. Ivana Bassani, Francesca Bella, Emanuela Benaglia, Mariangela Beretta, Silvia Bertelli, Patrizia Biraghi, Elena Bosi, Michela Bracchi, Veronica Brembilla, Giulia Botta, Valentina Brivio, Luisella Calloni, Patrizia Calzi, Giulia Cappelletti, Sara Capodanno, Graziano Carniel, Giovanna Casarico, Olivia Casati, Ilaria Casiraghi, Elena Cattaneo, Maria Laura Cerasa, Francesca Cesana, Giulia Ciceri, Simona Ciervo, Aurora Cimieri, Elvia Colombo, Samantha Comandini, Greta Cosmai, Stefania De Gianni, Marianna De Rosa, Giovanna Di Lio, Liliana Di Nicolantonio, Marta Donati, Simona Episcopo, Federica Eynard, Angela Falcone, Giulia Fedele, Nazzarena Figliuzzi, Giovanna Franchi, Chiara Furlan, Valentina Galbusera, Cinzia Rosilde Galletti, M. Teresa Giambelli, Serena Giani, Piera Giussani, Teresa Gramegna, Giovanna Grasso, Chiarina Lanni, Giulia Li Sacchi, Barbara Lo Iacono, Anna Locatelli, Elena Locatelli, Elena Lo Monaco, Federica Malberti, Ersilia Mangifesta, Cecilia Mariani, Daniela Mattiolo, Giuseppina Mauri, Matilde Meneghini, Fulvia Merendi, Marina Meroni, Sara Montrasio, Silvia Morassut, Arianna Motta, Simonetta Motta, Antonio Nettuno, Elena Nova, Lucia Rosa Olivadoti, Katalin Palkovics, Lodovica Panzeri, Maria Panzeri, Viviana Paone, Sabrina Pelloia, Sara Perego, Sofia Perego, Anna Maria Perucchini, Francesca Pescatore, Rodolfo Pessina, Jessica Pezzotta, Valeria Placenti, Maria Teresa Pignari, Armando Pintucci, Consuelo Porro, Barbara Pucci, Stefania Puggioni, Angela Quinti, Gabriella Ramazzina, Emanuela Redaelli,

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