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Perinatal mental health in ASL Roma 1: preliminary data from SaMeP, a specific pathway for healthcare in pregnancy and postpartum

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Summary

Objectives. Perinatal depression can involve up to 1 woman over 5 and it is one of the most frequent causes of early maternal death. As a large number of depressed women still remains unidentified, international guidelines underline the importance of early screening procedures and suggest the building of dedicated pathways of care within the public health service. The objective of this article is to present the organization of SaMeP and report preliminary data relating to 2021.

Methods. First-tier (Whooley questions) and second-tier screening (EPDS and SaMeP semi-structured interview) was administered to a large sample of women in ASL Roma 1 family clinics and birth centers. The semi-structured interview gives a specific attention to the occurrence of traumatic events and to their impact on the emergence of psychopathological aspects.

Results. 611 women received first-tier screening and among them, 116 women (18.9%) were referred to second-tier screening. 24 women (3.9%) were then referred for specialistic consultation with SaMeP psychiatrists. This last sample was divided into two groups based on the presence or absence of a traumatic history. When compared to the group without a traumatic history, the group exposed to trauma scored higher in EPDS ($p < 0.001$) and "SaMeP 2" pathway, that offers a higher level of care, was more frequently activated ($p < 0.015$).

Conclusions. The availability of SaMeP, a specific pathway for healthcare during pregnancy and postpartum, involving a systematic screening procedure for a wide group of women made it possible to intercept a large number of conditions worthy of clinical study (18.9% of the population involved). History of trauma is confirmed as an index of psychopathological severity during perinatal period.

Keywords: depression, pregnancy, postpartum, screening, psychological trauma

Introduction

Perinatal mental health

Becoming a mother implies a biological, psychological and social challenge. Perinatal psychiatric disorders represent a real clinical emergency. As a matter of fact, perinatal depression can involve up to 1 woman over 5 and is one of the most frequent causes of early maternal death [1,2]. When we talk about perinatal

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mental health we do not refer only to the mother, but to the whole family triad: paternal perinatal depression can affect up to 9% of fathers [3,4].
Moreover, epidemiological studies confirmed the association between perinatal psychiatric disorders and fetal and neonatal outcomes, suggesting that the exposure to environmental factors in womb or during the very first weeks of life can induce a different epigenetic expression of DNA, hesitating in a modified susceptibility to developing chronic diseases in adult life. Children exposed to different kinds of abuse have a higher risk of developing social, emotional and behavioral issues in adolescence, such as anxiety, depression and hyperactivity [5-8]. Child maltreatment is a solid predictive factor of psychiatric disorders in life span [9] and it is associated also to an early onset, more chances of comorbidity, more severe symptoms, and resistance to pharmacological treatment.
Many international scientific societies developed guidelines on how to manage perinatal psychiatric disorders, underlining the importance of early screening procedures during pregnancy and postpartum and suggesting the institution of dedicated pathways of care, made by networks of professionals [10,11].
However, a large number of women still does not receive the correct information about mental health issues and available treatment in pregnancy and postpartum. The lack of those information dramatically interferes with early diagnosis and intervention. ASL Roma 1 recognized this unmet need and implemented a multidisciplinary pathway of care, creating a professional network where different services are involved in caring for women affected by perinatal mental health issues and for their children.

Perinatal mental health in ASL Roma 1: SaMeP

The Local Health Trust "ASL Roma1" in Rome, provides healthcare to 6 out of the 15 Councils (Municipi) in which the city of Rome is divided (i.e., Municipio 1, 2, 3, 13, 14, and 15), serving more than 1 million inhabitants. Female population aged between 16 and 50 is of approximately 231.000 women. In 2021, a total of 2024 pregnant women had access in the 12 Family Clinic of the ASL Roma1 and a total of 1,465 women gave birth at Santo Spirito Hospital and San Filippo Neri Hospital birth centers.
Over the last two years ASL Roma 1 created the "Percorso intervento per la Salute Mentale Perinatale (SaMeP)", a specific pathway for perinatal mental health. SaMeP has the goal of creating a network between actual health services who have a role in assisting women affected by mental health issues in preconception, pregnancy and postpartum, up to 12 months after delivery.
SaMeP pathway involves a screening phase for risk factors, specialistic consultation and the construction of a targeted therapeutic intervention.
SaMeP psychiatrists work in multidisciplinary groups formed by other professional figures from different services: midwives, psychologists and social workers from family clinics, midwives, psychologists and ob-gyn from hospital settings and psychologists, nurses and social workers from mental health settings. To avoid stigma and to strengthen the family clinic role in our multidisciplinary intervention, psychiatric specialistic consultation is delivered inside the patient's family clinic. The SaMeP psychiatrist will stratify the risk, differentiating low, moderate and high-risk clinical cases with the goal of defining and starting the most adequate intervention for that specific patient.

Clinical intervention pathways: SaMeP 1, 2 and 3

Three SaMeP pathways have been defined, differentiating one to the other depending on intensity of care (Fig. 1).
SaMeP 1: (low risk). SaMeP psychiatrist will consult and monitor patients at their family clinic, along with family clinic psychologist.
SaMeP 2: (moderate risk). SaMeP psychiatrist will either refer the patient to the proper Community Mental Health Team (Centro di Salute Mentale, CSM), if the patient is not known, or give a specific consultation to the already existing mental health equipe. In those cases it is important to identify a case manager, to structure specific interventions and to define, within the 32nd week of pregnancy, a peripartum management plan.
SaMeP 3: (high risk). In case of a psychiatric emergency (e.g. postpartum psychosis), SaMeP psychiatrist will refer the patient to the Emergency Room and will activate an urgent psychiatric consult to evaluate admission to Psychiatric Intensive Care Unit.

"Linea nascita a rischio"

"Linea Nascita a Rischio" is a specific pathway addressed to children born in difficult situations, which include maternal mental health issues. This pathway has been developed by the Children and Adolescents Mental Health Service (Tutela Salute Mentale e Riabilitazione dell'Età Evolutiva - TSMREE) and it has the goal of early detection and treatment of neurodevelopmental issues. Women can be assessed with their newborns and partners by the "Linea Nascita a Rischio" team within the 3rd month after birth.

Materials and Methods

Whooley questions

They are a set of two yes/no questions originally developed in 1994 as a tool for General Practitioners to diagnose depression and a few years later implemented as an early test to diagnose perinatal depression in women. Nowadays the Whooley questions are administered in many countries all over the world, during midwives consultations [12].

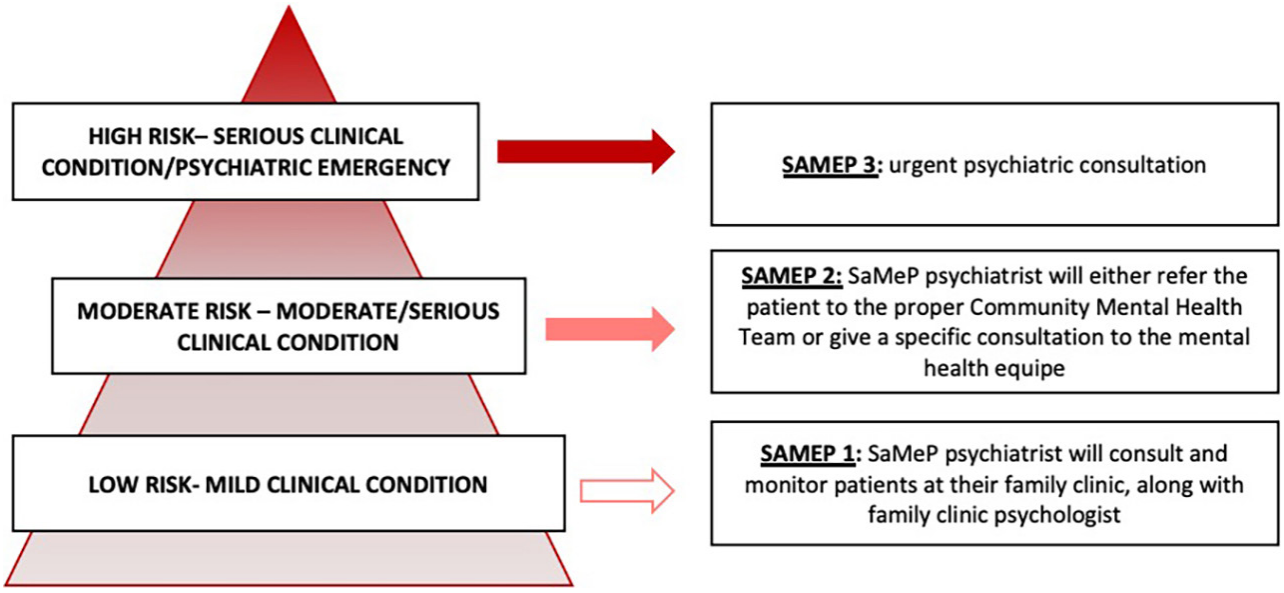

Figure 1.
SaMeP 1, 2 and 3, different pathways of care.

Edimburgh Postnatal Depression Scale (EPDS)

The EPDS was developed in 1987 with the goal of creating a test for depression that adequately explored specific symptoms in the perinatal period and that could be completed by women themselves [13]. EPDS is internationally used both in antenatal and postnatal care. It is composed by 10 items scored 0 to 3.

SaMeP 2 semi-structured interview

A semi-structured interview has been developed by SaMeP psychiatrists, and it is administered by family clinic and hospital psychologists in second-tier screening. The semi-structured interview explores risk factors for developing mental health issues in pregnancy and postpartum. Sociodemographic data, information about pregnancy and delivery, personal and family history for psychiatric disorders are collected. Consistent with literature [14,15], a specific attention is given to traumatic events and to their impact on the emergence of psychopathological aspects. The following types of trauma have been evaluated: traumatic birth, physical or psychological trauma, loss and separation, history of neglect or child maltreatment.

First-tier screening

Midwives, psychologists or pediatricians in Family Clinics and Birth Centres administer the Whooley Questions [12] as suggested by NICE Guidelines ad other International Guidelines on perinatal mental health [10]. This evaluation can be repeated many times in the perinatal period, during birth and breastfeeding classes, prehospitalization right before delivery, 3rd day postpartum, 7th day postpartum (first pediatric assessment) and 40th day postpartum (ob-gyn consultation).

Second-tier screening

Once a patient answers positively to one or both Whooley questions, she goes through the second-tier screening procedure by meeting a clinical psychologist, either in hospital or family clinic setting. This screening involves the administration EPDS and a semi-structured interview. When the patient tests positive in one or more evaluations, she is referred for the SaMeP psychiatric consult. The SaMeP psychiatrist evaluates whether the patient needs to be monitored or whether she needs psychiatric pharmacological treatment that is compatible with pregnancy and breastfeeding. Also, they evaluate whether the patient needs to be taken under the care of Community Mental Health Team (CSM).

Results

In 2021, 611 women received first-tier screening. Among them 496 women (81.2%) answered “NO” to both Whooley Questions, 115 women (18.8%) answered “YES” to at least one of the questions, resulting positive to first-tier screening. 116 women (18.9%) were referred to second-tier screening (Fig. 2). One of the women was referred to second-tier screening despite resulting negative to the Whooley Questions, as a consequence of a clinical evaluation.
24 women (3.9%) were referred for specialistic consultation and followed up by SaMeP psychiatrists (Fig. 2).

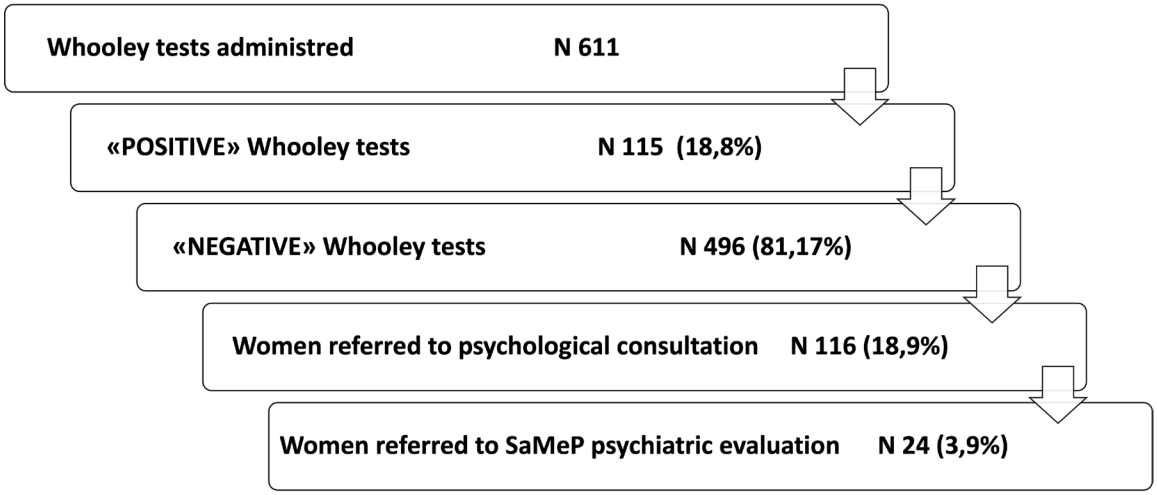

Figure 2.
Asl Roma 1 SaMeP first and second-tier screening in 2021.

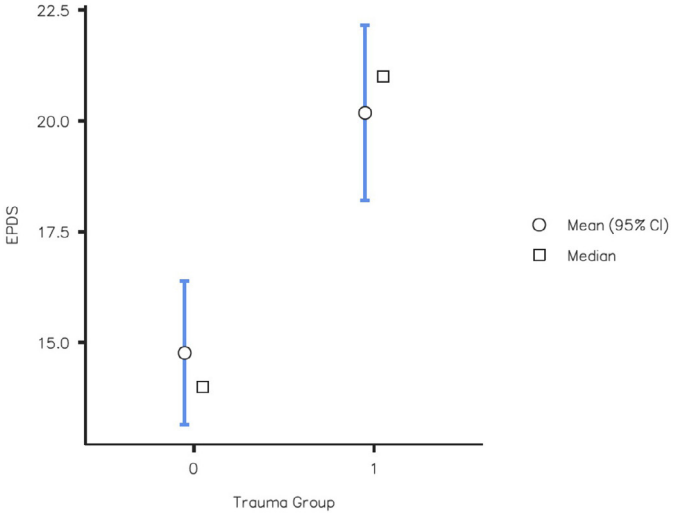

Figure 3.
Mean EPDS scores of each group. Group 1 has been exposed to trauma, while Group 0 has not a traumatic history.

The women evaluated and followed up in SaMeP pathway were an average of 34.21 years old; 70.8% (17) were italian nationals, whereas foreigners came mainly from Georgia, Bangladesh, Romania, Nicaragua, Perù, Czech Republic. 29.2% (N 7) had a university degree or higher, 37.5% (N 9) had a high school diploma and 33.3% (N 8) had a lower degree, such as middle school diploma or less; 70.8% (N 17) was employed, 29.2% (N 7) was unemployed; N 8 women (33.3%) were pregnant when referred, whereas 16 women (66.6%) were in their postpartum period.
All evaluated women had a stable partner and only 8% (N 2) described their relationship as unstable. However, only 29.2% described themselves as well supported socially and within their families; 50% (N 12) of SaMeP sample felt that they were poorly supported and 12.5% (N 3) stated that they didn't have any kind of social support. 2 women did not answer the question.
In terms of their pregnancy, while 18 women (75%) reported their pregnancy to be normal, 6 women (25%) reported different medical issues in pregnancy. Moreover, 14 women (58.3%) had previous pregnancies; 8 women (33.3%) had a history of previous miscarriages, 3 of them had more than one; 5 women (20,8%) of the sample fell pregnant through *in vitro* fertilization treatment.
In terms of psychiatric history, 1 woman was already followed up by the Mental Health Department, but 9 women (37.5%) were positive for previous psychiatric history. 2 women (8.3%) had a previous admission in a psychiatric ward. 5 women (20.8%) were positive for psychiatric family history. 11 over 24 women (45.8%) had a positive history of trauma. In 6 cases (25%) trauma was referred to loss or separation. 4 women (16.6%) experienced child maltreatment.
The average EPDS result was 17.25 (DS 4,04).
For 7 cases (29.1%) the "SaMeP 2" pathway was activated, with referral to the Community Mental Health team (CSM), "SaMeP 1" was activated for the remaining cases, with joint monitoring between family clinic and SaMeP psychiatrist. No case was referred to "SaMeP 3" in 2021.
Despite every woman evaluated by SaMeP psychiatrists was referred to "Linea Nascita a Rischio", only 2 of them accepted.
The sample of women evaluated with SaMeP psychiatric counseling was divided into two groups based on the presence or absence of a traumatic history. The group exposed to trauma scored higher in EPDS (20.2 ± 3.34) than the group without a traumatic history (14.8 ± 2,98), with a statistically significant extent ($t = -4.20$, $p < 0.001$) (Fig. 3). Consistently, our results show that, for the group

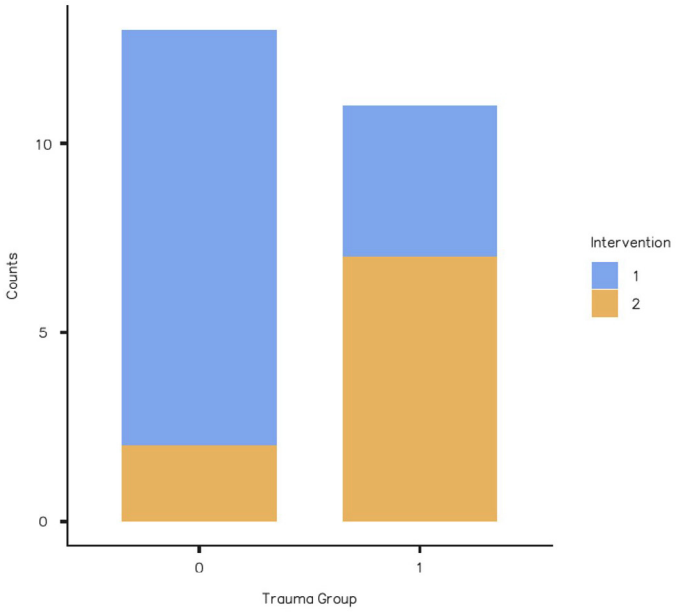

Figure 4.
Differences in SaMeP pathway of care between Group 0 (no traumatic history) and Group 1 (exposed to trauma).

with a history of trauma, "SaMeP 2" pathway, that offers a higher level of care, was more frequently activated than for the group without a traumatic history (χ^2 5.92, $p < 0.015$) (Fig. 4). The two groups did not differ for the other variables.

Discussion and Conclusions

In this article we presented the organization of SaMeP and reported preliminary data relating to 2021. Over the year considered, more than 600 women underwent first-tier screening. The activation of the screening procedure within a large group of women has made it possible to intercept any condition worthy of clinical study.

It is important to provide a systematic screening procedure on perinatal psychopathology within the public health service, as perinatal depression is still an underdiagnosed pathology. The most alarming data indicate that a large number of depressed women still remains unidentified [16-18].

In line with what is described in major international guidelines, we believe that Whooley questions are particularly suitable as first-tier screening. This tool can, in fact, be administered with extreme ease and, for this reason, it can be perfectly integrated into the usual clinical practice [12].

There are different reasons that explain why it is unrealistic that women affected by perinatal mental issues, ask for help autonomously and spontaneously. Relevant matters are the high perception of stigma and self-stigma, together with a dramatic poverty of information on perinatal psychopathology and the widespread unrealistic beliefs about motherhood and the way in which women should deal with it [19,20]. Also, the depressive symptomatology itself can determine a substantial obstacle to the request for support, since women with perinatal psychiatric pathology frequently report feelings of guilt or failure [21,22].

In our sample, a total of 116 women (18.9%) was considered worthy of clinical study and underwent second-tier screening through psychological interview and test evaluation. Within this group, only 24 women were referred to the psychiatrist.

This reflects literature data, which state that while 1 in 5 women (about 20% of all pregnant or postpartum women) experiences a perinatal mental disorder, approximately 5 out of 100 women receive a diagnosis of severe perinatal mental disorder [1,23]. It is extremely important to be able to intercept this portion of population as perinatal depression, besides having significant consequences for the entire family, means for the child a concrete increase in the risk of developing psychiatric pathologies in adolescence and adulthood [24]. In the last twenty years, depressive pathology has again been conceptualized as an inflammatory pathology, calling into question the dysregulation of inflammatory indexes such as PCR, IL-6, IL1 beta, TNF alfa, IFN beta [25].

In this regard, interesting data show that an effect of this inflammatory dysregulation on neurodevelopment can be found in children of women affected [26,27].

Furthermore, some authors have highlighted how, in children of women suffering from perinatal depression, a persistent alteration of immunological parameters can be found in adulthood, independently from the occurrence of life-time depressive episodes [27].

Current research strongly highlight the clinical need to focus more and more attention on the effects that a current psychopathological condition may have on future generations. For this reason, we value our involvement with TSMREE (Child and Adolescence Mental Health Team) because taking care of the mother is associated with a specialistic follow up of the child up to 24 months after birth [28,29]. We consider it crucial, to continue in raising awareness on perinatal mental health also to allow progressively a greater adhesion of families to the dedicated pathways of care: only 2 women in our sample accepted to be referred to "Linea nascita a rischio" and we believe that this has a link with the perception of stigma connected to perinatal psychopathology.

Interestingly, in our study, almost half of the patients referred to the psychiatrist had a history of trauma, confirming the relevance of the traumatic experience as an index of psychopathological severity.

According to literature, women who suffered trauma in childhood, especially sexual abuse, loss or illness of a loved one, are more vulnerable to developing perinatal depression, and the risk of disease increases four-fold if three or more traumatic events occurred lifetime [30,31].

Although the most frequent form of violence in pregnancy

is emotional abuse, physical violence is also particularly represented. In pregnancy, violence implies a more complex meaning, threatening the physical integrity of the mother and the unborn child: having suffered from physical or sexual violence during pregnancy can not only cause a depressive disorder, but can also compromise the future parenting function of mothers [32].

WHO data report that between 1 and 28% of women suffers sexual abuse perpetrated by the partner during pregnancy. Physical violence suffered during pregnancy is often described as direct attacks on the mother's belly, with specific harmful intentions [33,34]. Other studies have clearly reported an increased risk of depression in women who experienced loss or separation from a loved one during perinatal period [35] and in line with this, the 25% of the group of women referred to psychiatric consultation, reported having experienced loss or separation.

Furthermore, the 16.6% of the sample referred to the psychiatrist, reported an history of child maltreatment, which is widely considered a solid predictor of psychiatric disorders at different ages of life [9] and is associated not only with the onset of mental health problems, but also with an early age of onset, with a higher rate of comorbidity, a greater severity of symptoms and resistance to drug treatment.

Our perspectives for the future are to increase the culture of perinatal mental health in all professionals involved in women's care through education; moreover, we have new partnerships coming up, that will help building our net of professionals.

Currently, the absence of specific data on the subthreshold sample is a limit of the study, but a more systematic data collection also including the patients who tested negative at the first and/or second-tier screening is already underway, with the objective of increasingly focus on prevention and identification of risk factors.

New perspectives

Two partnerships have been launched, the first with CRARL (Alcohol Reference Center of the Lazio Region, ASL Roma 1, Department of Mental Health) involves screening for early recognition of alcohol consumption during pregnancy and a multidisciplinary care plan involving CRARL, Family Clinics and SaMeP for comorbidities with mental health problems. The second partnership, with LUMSA University (Libera Università Maria Santissima Assunta), provides the administration of an implemented screening procedure addressed to all mothers and fathers participating to birth classes in Family Clinics during their 3rd trimester of pregnancy. The parental couple is monitored up to 24 months after birth and a home visiting intervention within the postpartum period is foreseen.

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