



VIEWPOINT

Perinatal depression screening, prevention and early intervention: recent advances in Portugal

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Abstract

Perinatal depression (PD) is a significant public health concern, needing a more efficient detection, prevention and treatment. Experts in the area recently recommended universal psychosocial assessment programs that combine the evaluation of PD symptoms and psychosocial risk factors. Within a new research project, our team has been exploring this avenue to try to reduce the high negative impact of PD. Our aims are: (1) to analyze the predictive ability of a new instrument (Perinatal Depression Screening and Prevention Tool/PDSPTool) to assess both PD symptoms and risk factors previously validated/identified by our team; (2) to test the efficacy of prevention and/or early intervention program—Mother in Me (MIM), focused on psychoeducational and psychotherapy sessions focusing on Cognitive-Behavioral Therapy (CBT) and on exercises from the third generation CBT. The new instrument (PDSPT), includes the short version of the Postpartum Depression Screening Scale (adapted and validated for pregnancy) and other valid self-report questionnaires to assess the PD risk factors in Portuguese women: lifetime history of depression, prenatal insomnia and prenatal negative affect. The PDSPTool and the Diagnostic interview for Psychological Distress have been administered to pregnant women (third trimester), recruited in the primary health care centers and maternity hospitals, where the vast majority of Portuguese women have their pregnancy and puerperium followed. The effectiveness of the program will be tested at 5 weeks, 3 and 6 months postpartum, based on the PDSS cutoff points and on the administration of the interview.

Keywords: Perinatal depression, Risk Factors, Screening, Prevention, Intervention.

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Our view and our project

The perinatal period (pregnancy and the first postnatal year) is a time of increased psychological vulnerability for many women, with increased risk of major depression in the postpartum [1, 2]. Although prevalent (3.3% in pregnancy and 11.0% during the first postpartum year, according to our epidemiological studies [3]) and associated with negative outcomes for the mother, partner, infant, and family [4], perinatal depression (PD) is dramatically under-recognized and under-treated [5].

International studies demonstrated that PD screening increases the rate of recognition, diagnosis and treatment, more-than-doubling the detection rate in comparison with routine practice [6], that is feasible and highly acceptable to women and staff [7, 8].

Unlike mental health screening, psychosocial assessment does not set out to identify women with a possible diagnosis of a particular condition at the time of assessment. Rather it promulgates a broad focus of inquiry about past and current risk factors underpinning a woman's presentation in the perinatal period while including screening for possible current depression [9]. Given the regular contact women have with health services during the perinatal period [10], there has been significant interest in developing prenatal psychosocial assessment tools that could aid in the prediction of women likely to develop PD [11]. The principal authority in the area of perinatal mental health, the Marcé International Society, recommends universal screening programs that combine the evaluation of psychosocial risk factors and the detection of possible current depression [12]. However, the capacity of the available risk assessment tools to assess pregnant women for the presence of psychosocial risk factors to predict postnatal depression is limited [13].

Our team recently conducted a rigorous study to overcome the literature limitations about perinatal depression risk factors. At the third trimester of pregnancy and at the third, sixth and twelfth months postpartum, 236 women were assessed concerning the predictive role of several perinatal depression risk factors and correlates belonging to different domains. To our knowledge, considering research in our country, few studies combined a categorical and dimensional approach or explored the role of sleep variables in the development of both outcomes. The most robust predictors for perinatal depression were lifetime history of depression, prenatal insomnia and prenatal negative affect [14 – 16].

Following the Marcé recommendations, we idealized a research project, in which, apart from the perinatal depressive symptoms evaluation with the Portuguese short versions of the Postpartum Depression Screening Scale (PDSS-21 for the post-partum and PDSS-24 for pregnancy) [17], we also intend to evaluate those risk-factors with instruments developed and validated by our team. Contrary to the other instruments widely used to screen for PD (EPDS and

BDI-II), PDSS reflects the specific perinatal context. This is very important, because as we have recently confirmed, at the perinatal period, most particularly at pregnancy, women experience significant somatic changes even if not clinically depressed, being cognitive-affective symptoms more useful when assessing perinatal depression [18].

Within our new project entitled “Perinatal depression screening, prevention and early intervention in primary care” [funded by the EEA Grants 2009-2014, of the European Financial Mechanism (MFEED), in the scope of Public Health Initiatives and with the focus on Improving mental health services] and its derivatives, it is our intention to continue strengthening the integration in Portugal of the care plan and referral pathways; across time periods (antenatal and postnatal) and service settings.

Although some strategies for perinatal depression screening and case identification have been promoted [18], they remain controversial. To determine whether population-based identification of perinatal depression and anxiety is desirable, we should analyze whether a strategy of screening ultimately leads to an improved outcome. The model presented by Gavin and collaborators (2015) [19], adapted from the “depression treatment cascade in primary care” [20] posited that to achieve successful treatment, both patient and their clinician must be aware of the diagnosis; effective care must be available and accessible; and the patient must be engaged in care, remain in care, and adhere to treatment.

Within this framework, a number of conditions are necessary to make population-based identification desirable [19]. That the condition must be prevalent and have negative consequences and that the screening tool must be valid and identify a significant number of otherwise unrecognized cases we have already proved [21]. The conditions that we are trying to establish within our present project are that an effective treatment must exist, must be available and accepted to the largest possible number of women and families.

Our aims and tasks

1. We are mainly focused in two primary aims. Firstly, we intend to analyze the predictive ability of a new instrument (Perinatal Depression Screening and Prevention Tool/PDSPT) [22] to predict and screen for perinatal depression. It assesses both perinatal depression symptoms and risk factors previously identified by our team [16].
2. In order to achieve this, approximately five hundred women with uncomplicated pregnancies were recruited while waiting for their medical appointment at local health medical centers and local maternities (mainly at Maternidade Bissaya Barreto, in Coimbra, Portugal) and invited to participate in the study. The new instrument (PDSPTool) was administered to the pregnant women between the 12th to the 26th gestation week. Participants with and without significant

symptoms and/or risk factor of PD are being assessed again with the PDSS as well as with the new Diagnostic Interview for Psychological Distress-Postpartum [23] at five weeks and at three and six months postpartum (to avoid the overlap with the baby blues and to cover the highest risk period for women to suffer from postpartum depression), to assess the occurrence of postpartum depression. As secondary aims we intend to analyze the PDSPT and the MIM acceptability by perinatal women and health professionals. Our second primary aim is to test the efficacy of a prevention/early intervention program ("Mother in Me"/MIM) for antenatal depression with women with scores above the cut-off scores in the PDSS-24 [17] and/or with at least one of the perinatal depression risk factors assessed at pregnancy: lifetime history of depression, high negative affect, antenatal insomnia, high PDSS scores. Within this second aim, our first task was the development of our prevention/early intervention program named MOTHER IN ME (MIM). It intends to help pregnant women to develop alternative ways of responding to anxiety, stress and depressive symptoms, and includes psychoeducation, mindfulness techniques, cognitive-behavioral approaches, self-compassion exercises and homework between sessions in order to encourage the everyday use of those tools. The sessions were developed and manualized based in previously MBCT programs [24, 25], MBSR (Mindfulness Based Stress Reduction) [26], MBCP (Mindfulness Based Childbirth and Parenting) [27], Mindful Motherhood [28], and Self-Compassion exercises [29], adapting some exercises to pregnant women. The eight sessions, starting between 27/28 weeks of pregnancy (1.5 hour each) cover the following topics: Psychoeducation (regarding depression, anxiety, and stress; and also explaining mindfulness competences and benefits, and self-compassion); Cognitive Behavioral Therapy based exercises (e.g. ABC Sheet; identifying automatic thoughts); Mindfulness practices (e.g. Body scan, Mountain meditation, Three minutes break) and developing Self-Compassion. At each session participants are offered simple handouts with relevant definitions and examples; a folder with record and homework sheets, including meditation instructions. Audio material/recordings are also delivered, to help home meditation practice between sessions.

At the moment we are developing a randomized controlled study to evaluate the efficacy of the program. The participants presenting scores above the cut-off points in the PDSS-24 [17], and/or with at least one of the mentioned risk factors, are being randomly distributed into early intervention/prevention experimental vs. control groups. Participants allocated to the experimental groups will participate in small groups of eight participants each.

The effectiveness of the program will be tested at five weeks, three and six months postpartum, based on the PDSS-21 cutoff points [17], and on the administration of the DIPD-PP [23]. Scores in the Self-Compassion Scale [30], and Facets of Mindfulness Questionnaire-10 (FMQ-10) [31], both validated with representative samples of Portuguese pregnant women, will also be compared at all the assessment moments.

Based on recent reviews suggesting that diverse psychosocial and psychological interventions designed to prevent postpartum depression effectively reduce levels of postpartum depressive symptoms and decrease risk for postpartum depressive episodes within the 12 months postpartum [32, 33], including a synthesis of the best available evidence regarding the effectiveness of mindfulness training during pregnancy to support perinatal mental health [34], we expect that the experimental group, when compared to the control group will present significantly lower depression scores/proportions and psychological distress (anxiety, depression and stress), and significant increase on positive affect, mindfulness and self-compassion scores.

Until our recent studies there were no studies on the relationship between mindfulness, self-compassion and depressive symptoms in pregnancy. Thus, before developing and testing our program MIM we started by exploring the association between mindfulness, self-compassion and depressive symptoms in pregnant women.

We have found that mindfulness and self-compassion dimensions, particularly Nonjudging of experience and Self-kindness are protective for antenatal depressive symptoms [35] and psychological distress [36] assessed with a pregnancy validated version of the Depression, Anxiety and Stress Scale (DASS) [37]. Our recent results also disclose that less mindfulness and self-compassion abilities in pregnancy enhances the probability of having lifetime history of depression [38, 39]; on the contrary, high mindfulness and self-compassion improve sleep in pregnancy or reduce the impact of insomnia symptoms [40, 41].

Furthermore, it is well known that women prefer psychotherapy (Cognitive behavioral therapies/CBT, Mindfulness based therapy and Interpersonal therapy) more than pharmacotherapy and report significantly more favorable perceptions of the first approaches to depression [7].

Our first results

Perinatal Depression Screening and Prevention Tool/ PDSPTool

This new instrument, innovative and completely based on previous findings derived by our studies with representative samples of the Portuguese perinatal women, includes: the Short version of the PDSS-24 [17], the Insomnia Assessment Scale – Adapted [42]; the Portuguese version of the Profile of Mood States (PoMS) [43] evaluate "Negative Affect" and "Positive Affect" [44] and the Lifetime History of Depression (LTHD [38, 39]).

We have already studied the PDSPTool acceptability. Pregnant women ($n=469$), with a mean age of 32.47 years (± 4.752), in the second trimester of pregnancy ($M=17.15\pm 4.831$ weeks of gestation) completed the new PDSPTool and additional questions addressing its acceptability while waiting for the routine prenatal consultation in a Local Health Medical Centre or in Maternity Hospital, Portugal. Also 32 health professionals who assist women in the perinatal period [17 (53.1%) Doctors: 9 (28.1%) General and Family Medicine and 8 (25.0%) Obstetrics/Gynecology); 13 (40.6%) Nurses and 2 (6.3%) Clinical Psychologists] were asked to fill in a questionnaire to explore their views on the PDSPTool use. Globally, the acceptability was very favorable both by health professionals and pregnant women. A considerable number of professionals suggested that the PDSPTool should be shorter to be systematically included in clinical routine, and we are developing quantitative and qualitative strategies to meet this recommendation. By increasing the sample size at five weeks, three months and six months postpartum we will be able to select the items with the highest predictive ability.

We have also conducted a preliminary analysis the predictive ability of the PDSPTool [22]. 92 pregnant women (Mean age: 32.64 \pm 4.586 years) in their second trimester of pregnancy (21.38 \pm 2.413 weeks of gestation) completed the PDSPTool and at six (6.34 \pm 1.655) weeks postpartum they completed the PDSS-21 [17], in order to determine if they scored above or below the PDSS-21 cut off point for clinical depression (>40) and were interviewed with the DIPD-PP [23], to determine if they fulfill the diagnostic criteria for major depression/DSM-5.

Considering the dimensional approach, eighteen women (19.6%) presented PDSS-21 scores >40 . The global correct classification rate of the PDSPTool was 65.2%. The false-negative rate was 4.3%, the false-positive rate was 35.9%, the true-negative rate was 44.6% and the true-positive rate was 15.2%. Considering the PDSPTool components, 61% of the women scoring PDSS-24 >43 at pregnancy ($\chi^2=14.24$, $OR=7.37$); 38.9% of women with LtHD ($\chi^2=14.24$, $OR=7.37$) and 66.7% of women with high negative affect at pregnancy ($\chi^2=17.64$, $OR=9.38$) (all $p<0.001$) presented PDSS-21 >40 in the postpartum [45, 46].

Focusing on the categorical approach, 4.3% of women have major depression. The global correct classification rate of the PDSPTool was 53.3%. False-negatives 1.1%, false-positives 44.6%, true-negatives 55.2% and true-positives 3.3%. Considering the PDSPTool components, high negative affect showed the highest predictive ability: 100% of women with High NA at pregnancy ($\chi^2=11.21$, $OR=2.190$, $p=0.005$) had major depression in the postpartum.

Although, as we expected, it is a very difficult task to identify the pregnant women who will have significant depressive symptoms or major depression in the postpartum, however our preliminary results are encouraging, by showing that using the PDSPTool can help us identify approximately two-thirds of these women, particularly if we

consider that false-negatives are worse than false-positives [47]. Something is better than nothing.

Diagnostic Interview for Psychological Distress

Due to the lack of a diagnostic interview according to DSM-5, we developed a brief diagnostic interview to assess depression and a selection of the most prevalent anxiety disorders and other disorders in the postpartum [2, 48]. DIPD-PP was developed based upon the DSM-5 criteria and on MINI International Neuropsychiatric Interview (MINI 5.0.0) [49], Diagnostic Interview for Genetic Studies (DIGS) [50] and Anxiety Disorders Interview Schedule-IV (ADIS-IV) [51]. The in-depth and critical analysis of the DSM-5 criteria constituted the basis for the development of the diagnostic valence of the interview. DIPD-PP is a semi-structured clinical interview, following a clinical approach of interviewing where questions are grouped by diagnosis and criteria for a specific diagnosis: Major Depressive Disorder (including all the specifiers), Anxiety Disorders (Panic disorder, Agoraphobia, Social Anxiety, Generalized Anxiety Disorder), Obsessive-Compulsive Disorder, and trauma-related disorders (Posttraumatic Stress Disorder and Acute Stress Disorder) in the postpartum period. In order to adapt to the objectives of the clinician/researcher the DIPD-PP can be used with different timeframe periods (in the present research project, we use 5 weeks, 3 months and 6 or more months postpartum). If the interviewed fails to meet a certain criteria, the interview provides "skip out" instructions directing the interviewer to the following criteria or diagnosis. Detailed assessment of suicidal behavior in the index timeframe (pregnancy, postpartum or lifetime) allows to calculate the suicide risk.

A group of 21 professionals with experience in the disorders assessed by DIPD were invited to join an experts' panel whose purpose was to critically evaluate it. We benefited from the evaluation of 14 psychiatrists, five clinical psychologists and two nurses (with specialization in Mental Health). The participants had in average 13.71 years of professional experience (4 to 30 years). The experts were asked to carefully analyze and evaluate each interview question in terms of two criteria: a) pertinence of the items and b) clarity of language in a 0 (not at all pertinent/clear) to 5 (extremely pertinent/completely clear) scale. For all questions with a score (either on pertinence or clarity) bellow 3 the participants were asked to correct or suggest modifications to the question. The experts' panel evaluation highlighted the clinical utility of the DIPD-PP with high scores both in terms of pertinence of questions for diagnosis and regarding language suitability for the postpartum period. The DIPD-PP final version is a clinically relevant and practical interview that is already being useful in epidemiological and clinical research.

Our ethical compromise

As long as our expected results will be achieved, that is, good predictive power of the PDSPTool through the peri-

natal period and lower proportions of depression and psychological distress in the experimental vs. control groups, it is our intention to promote workshops and working parties with healthcare professionals at maternity hospitals and primary healthcare units, to provide education, training and support on the perinatal depression screening methods, instruments and strategies, diagnosis, prevention, early intervention and treatment and to ensure the integration between the four Austin's (2015) axis [13].

After the follow-up of participants allocated in the two objectives, all the women who maintain or have a new onset of a depression diagnosis in the perinatal period and/or a high score at PDSS (above the cut-off score) will be referred to a psychiatric consultation and/or psychological intervention for further evaluation and specialized treatment at Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal.

Abbreviations

ADIS-IV: Anxiety Disorders Interview Schedule-IV; CBT: Cognitive behavioral therapies; DASS: Depression, Anxiety and Stress Scale; DIGS: Diagnostic Interview for Genetic Studies; FMQ-10: Facets of Mindfulness Questionnaire-10; LTHD: Lifetime History of Depression; MBCP: Mindfulness Based Childbirth and Parenting; MBSR: Mindfulness Based Stress Reduction; MFEED: European Financial Mechanism; MIM: MOTHER IN ME; MINI 5.0.0: MINI International Neuropsychiatric Interview; PD: Perinatal depression; PDSS: Postpartum Depression Screening Scale; PDSPTool: Perinatal Depression Screening and Prevention Tool; PoMS: Portuguese version of the Profile of Mood States

Competing interests

The authors declare no conflict of interest.

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