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EDITORIAL

A global challenge: maternal depression and offspring mental disorders

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Pregnancy is a critical period strongly associated with an increased risk of depression onset. In high-income countries (HICs), the prevalence of prenatal depression is estimated to be 15%, whereas postnatal depression is reported to be 10%. In LMICs, these prevalence rates are higher: 25% during the prenatal period and 19% during the postnatal period [1]. Higher prevalence rates of maternal depression in LMICs are related to various risk factors that are more prevalent in these countries, such as early life abuse, intimate partner violence, maternal low educational attainment, poverty, and lack of social support. This scenario is further worsened by treatment rates that are much lower than the ones found in other populations. Estimates suggest that among pregnant women diagnosed with depression, 51% do not receive mental health treatment, compared with 43% of non-pregnant women with the same condition [2]. Low rates of treatment for maternal depression worldwide are worrying, since depression is an important cause of disability in mothers and their offspring. There is growing evidence showing that maternal depression can alter child brain development [3] significantly increasing the risk for child and adolescent mental health problems [4]. Considering the burden of maternal depression and the availability of treatments, which could potentially prevent offspring mental health problems, maternal depression is an important global challenge.

In this month's issue, two studies shed light on the mechanisms and consequences of maternal depression on child mental health. Pires and colleagues [5] addressed longstanding questions: is there a particular time period during which exposure to maternal depression can lead to worse outcomes? Or does the chronicity of maternal depression play a more important role than the specific time window of exposure? Or maybe the experience of onset and change of maternal depression throughout the prenatal and postnatal periods are more important for child outcomes than a specific time window or chronicity? Authors used cohort data to assess the impact of maternal depression on the mental health of 4–5-year-old children of adolescent mothers. All pregnant adolescents living in the city of Pelotas (in the southern state of Rio Grande do Sul, Brazil) who were receiving public prenatal care between 2009 and 2011 were invited to participate in the study. Of 871 eligible participants, 413 participants were assessed longitudinally between prenatal and the postnatal periods. Different models were tested to understand which one better-explained child mental health problems at age 4–5. The model with the best fit was the so-called accumulation model: the continuation of exposure throughout time accumulates in a dose–response manner, assuming that time periods have an identical effect. The accumulation model showed a dose–response negative effect on child emotional, conduct, hyperactivity, and peer-relationship problems. Consequently, the chronicity of maternal depression may be an important indicator of at-risk children for future mental health problems. This debate will need more studies to come to a definite conclusion, combining longitudinal measures of mother and child mental health, as well as biological measures to understand the underlying mechanisms of change. Evidence suggests that maternal depressive symptoms during the prenatal period can alter the child's amygdala measured at birth, along with the functional connectivity of the child's brain at 6 months of age [6], showing that a specific time window of maternal depression onset can impact child mental health problems.

Another important study in this issue was conducted by Charrois and colleagues [7], who investigated potential moderators of the effect of maternal depression on offspring. The authors conducted a longitudinal study that aimed at understanding the role of preschool childcare quality in attenuating the negative effects of maternal depression during the early childhood (0–5 years) on children's emotional and behavioral problems at ages 7–8 in a sample of 207

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families living in Canada. Authors defined childcare as a service delivered on a regular basis (> 10 h/week), provided during early childhood by someone other than the parent. A regression-based approach showed that maternal depression during early childhood (0–5 years) is associated with current maternal depression (7–8 years) in models where child hyperactivity/inattention and depression/anxiety were the outcomes. Current maternal depression had an indirect effect on child hyperactivity/inattention and depression/anxiety at ages 7–8. Most interestingly, the authors also found a direct effect of childcare quality (2–5 years) on hyperactivity/inattention and depression/anxiety (7–8 years). In other words, children exposed longitudinally to maternal depression who received high-quality childcare quality had fewer symptoms of hyperactivity/inattention and depression/anxiety at ages 7–8. The implication of these findings is significant, since early childcare can act as a buffer against psychopathology. Ensuring that at-risk children receive high-quality daycare could be a feasible policy to prevent child mental health problems. Further studies are warranted to test if these findings replicate in LMICs.

The implication of findings from both studies highlights the importance of treating maternal depression as early as possible to prevent a cascade of disrupting alterations in child brain development that will eventually lead to mental health problems. However, treatment options are reduced due to complexities inherent to pregnancy. Antidepressants with well-documented efficacy may have teratogenic effects [8] and should be used with caution. Psychotherapies have been developed and tested, demonstrating both efficacy and safety for the child, but they demand specialized professionals and increased financial investments, both of which are scarce in most regions of the world. To circumvent these barriers, the field needs solutions that are both accessible and integrated into primary health care, scalable, and safe for the child. In this context, strategies such as the task-shifting approach have been increasingly used in recent years. Task-shifting consists in training non-specialist health workers (NSHW) (lay individuals or non-specialist health professionals) to deliver interventions that aregenerally delivered by specialized health professionals. By means of task shifting, the mental health care workforce can be expanded. This model has proven to be a successful strategy to treat and prevent a number of non-communicable diseases. More specifically, clinical interventions originally designed to be delivered by psychologists have been successfully adapted to be adequately administered by NSHW to treat maternal depression with positive results.

A well-known example of task-shifting is the Thinking Healthy Program (THP), an evidence-based manualized intervention suited for low-income settings recommended by the World Health Organization. It consists of 16 sessions organized in 5 modules delivered throughout the prenatal and postnatal periods, focusing on maternal well-being and mental health, mother–child relationship, and social support. NSHWs without prior knowledge or experience of mental health care are trained to use a wide range of psychological techniques, such as behavioral activation, active listening, psychoeducation, and problem-solving skill development, among others, to treat depressive symptoms in mothers. One major advantage of THP is that it was designed to be easily integrated into existing primary care systems, providing a much-needed continuum of care for patients. More importantly, there is evidence for its efficacy in treating maternal depression, as shown by a large randomized clinical trial in which THP significantly reduced the prevalence of major depression in mothers 6 months after childbirth (23% vs 53%, intervention and control groups, respectively) [9].

Notwithstanding the positive results regarding the use of THP to treat depression, with evidence showing its efficacy to reduce maternal depression in multiple settings with sustained effects up to 12 months, a long-term follow-up study did not show an impact on child cognitive, socioemotional, and physical development at age 7 [10]. As a consequence, the field still has to face the challenge of developing strategies that not only treat maternal depression but also mitigate or prevent negative child outcomes associated with the disorder. To boost the long-term effects of interventions such as the THP on child outcomes, childcare during early childhood could potentially be implemented along with strategies to monitor and treat mothers' recurrent depressive symptoms or episodes over time. For instance, women who underwent treatment for maternal depression could be assessed periodically throughout time and be offered high-quality intensive childcare. Both interventions could work in synergy to buffer child mental health problems, therefore preventing the onset of child psychopathology. Results reported by Charrois and colleagues [7] are consistent with this approach, as it suggests that mitigation of the effects of maternal depression on offspring mental health can occur by capitalizing on basic services, such as childcare, already offered by the government and private sector. Thus, to face the global health challenge imposed by maternal depression and its impact on offspring mental health, interventions working in tandem with the educational and health systems will be needed. International researchers, stakeholders, and policymakers will need to work together to tackle this global challenge.

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