Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis

Pamela J Surkan, a Caitlin E Kennedy, b Kristen M Hurley b & Maureen M Black b

Objective To investigate the relationship between maternal depression and child growth in developing countries through a systematic literature review and meta-analysis.

Methods Six databases were searched for studies from developing countries on maternal depression and child growth published up until 2010. Standard meta-analytical methods were followed and pooled odds ratios (ORs) for underweight and stunting in the children of depressed mothers were calculated using random effects models for all studies and for subsets of studies that met strict criteria on study design, exposure to maternal depression and outcome variables. The population attributable risk (PAR) was estimated for selected studies.

Findings Seventeen studies including a total of 13,923 mother and child pairs from 11 countries met inclusion criteria. The children of mothers with depression or depressive symptoms were more likely to be underweight (OR: 1.5; 95% confidence interval, CI: 1.2–1.8) or stunted (OR: 1.4; 95% CI: 1.2–1.7). Subanalysis of three longitudinal studies showed a stronger effect: the OR for underweight was 2.2 (95% CI: 1.5–3.2) and for stunting, 2.0 (95% CI: 1.0–3.9). The PAR for selected studies indicated that if the infant population were entirely unexposed to maternal depressive symptoms 23% to 29% fewer children would be underweight or stunted.

Conclusion Maternal depression was associated with early childhood underweight and stunting. Rigorous prospective studies are needed to identify mechanisms and causes. Early identification, treatment and prevention of maternal depression may help reduce child stunting and underweight in developing countries.

Abstracts in Arabic, Chinese, French, Russian and Spanish at the end of each article.

Introduction

Research in developing countries suggests that poor maternal mental health, in particular maternal depression, may be a risk factor for poor growth in young children. 1 In addition, the risk of depression in women is approximately twofold higher than in men 2 and women are particularly prone in the postpartum period because of hormonal changes associated with childbirth and stressors associated with parenting. 3,4 The combination of women’s vulnerability to depression, their responsibility for childcare and the high prevalence of maternal depression in developing countries 5 means that maternal mental health in these countries could have a substantial influence on growth during childhood.

Childhood growth is a key indicator of child health and nutritional status. According to recent estimates from developing countries, stunting and underweight have an overall prevalence of 32% and 20%, respectively. 6 Inadequate growth during childhood can result in reduced adult stature, low educational performance, reduced economic productivity, impaired work capacity and heightened disease risk. 7–12 Rapid physical growth and development occur in early life when infants are dependent on the primary caregiver for their social and nutritional needs, 13 which makes young children vulnerable to the effects of their caregivers’ mental health problems.

Recent research on the relationship between maternal depressive symptoms and child stunting or underweight has produced inconsistent results. Two descriptive reviews have provided a summary of research findings, 14,15 but, to the best of our knowledge, no quantitative synthesis of research results has been produced. Our study goals were to review systematically the literature on maternal depression and childhood growth in developing countries and to summarize and compare any associations found across populations using meta-analytical techniques.

Methods

The study used standard methods for systematic reviews and meta-analyses in accordance with PRISMA (Preferred reporting items for systematic reviews and meta-analyses) and MOOSE (Meta-analysis of observational studies in epidemiology) statements. 16,17

Study inclusion criteria

A study was included in the meta-analysis if it: (i) quantitatively assessed the relationship between maternal depression or depressive symptoms (or mental disorders in which depression was a major component) and child growth using an odds ratio (OR) or included data that could be used to calculate an OR; (ii) was published in a peer-reviewed journal up until April 2010; and (iii) was not an intervention study. We restricted our search to developing countries but applied no other population or language restrictions.

Maternal depression and childhood growth can both be assessed using several methods. Depression can be diagnosed through standardized diagnostic interviews, such as the Structured Clinical Interview of the Diagnostic and statistical manual of mental disorders, 4th edition 18 or the interview for the Schedules for Clinical Assessment in Neuropsychiatry, 19 while depressive symptoms can be assessed directly using a question-
naire, such as the Edinburgh Postnatal Depression Scale or assessed as a major component of mental disorders using, for example, the World Health Organization (WHO) Self-Reporting Questionnaire.

Childhood growth can be quantified in terms of weight-for-age or height-for-age. Underweight and stunting are commonly defined using WHO criteria: more than two standard deviations (SDs) below the mean weight-for-age and the mean height-for-age, respectively (i.e., a z-score < −2). In this analysis we also included studies with more relaxed or more stringent criteria. Overall, the studies included in the analysis measured maternal depression or depressive symptoms and childhood growth in a variety of ways.

**Search strategy and study selection**

The following online computer databases were searched for studies on maternal depression and child growth: PubMed, PsycINFO, CINAHL Plus, Web of Science, SCOPUS and EMBASE. Medical Subject Heading (MeSH) terms in PubMed were used to identify a string of search terms that were applied in the six databases: (“mother” OR “maternal”) AND (“depression” OR “depressive disorder” OR “mental health”) AND (“child” OR “infant”) AND (“nutritional disorders” OR “growth disorders” OR “nutritional status” OR “body size”). Where available, full-text searches and explosion-of-terms searches were carried out. In an explosion-of-terms search, the initial search terms are linked to a web of similar search terms provided by the database. A search of secondary references was conducted by scanning the reference lists of relevant articles and by cross-referencing with previous reviews on the topic. In addition, experts in the field were contacted to identify additional citations.

Studies that were clearly not relevant were excluded by reviewing their titles and abstracts. The remaining studies were then read in full by at least two authors of this study and selected for inclusion in the analysis by consensus. Articles identified as relevant by both authors were invariably included; those considered relevant by only one author were discussed among all authors to assess their suitability for inclusion.

**Data extraction**

A systematic coding form was used to record each study’s objective, location, population, design and sample size; the children’s ages; exposure and outcome measures; confounding variables; and the study’s method of analysis, results, conclusions and limitations. Discrepancies in coding were resolved by consensus. The rigour of each study was evaluated using an adaptation of the Newcastle–Ottawa Scale for assessing the quality of nonrandomized studies in meta-analyses.

Each study was classified by design as either a longitudinal cohort, case–control or cross-sectional study and each was assessed to determine if it satisfied four criteria: (i) the women and children were representative of the community studied; (ii) the response rate (i.e., the percentage of individuals in the selected population sample who agreed to participate in the study and completed follow-up) was 80% or higher; (iii) a diagnostic measure of depression had been used; and (iv) the results had been adjusted for at least two confounding variables.

**Meta-analysis**

We converted different estimates of effect size to the common metric of an OR since most studies compared two groups and reported dichotomous outcomes. However, three studies reported outcomes as continuous variables. We converted data from the first of these three studies to ORs using Comprehensive Meta-Analysis V2.2 software (Biostat Inc., Englewood, United States of America). For the other two studies, the original authors either re-analysed the primary data to generate ORs or provided data for us to calculate them. We used standard meta-analytical methods to estimate the standardized effect sizes using the inverse variance approach and random effects models.

The heterogeneity of the different studies’ findings was assessed using the Q-statistic. Publication bias was assessed from funnel plots of the standard error against the log OR using both Begg and Mazumdar’s rank correlation test and Egger’s test of the intercept to determine statistical significance.

**Results**

The computer database search yielded 312 citations and two additional records were identified through other sources. After removing duplicates, 210 citations were available for assessment. The initial screening of titles and abstracts identified 81 citations that potentially met the inclusion criteria. After the texts were reviewed in full, 14 articles reporting on 17 separate studies met the inclusion criteria.

The studies came from several regions: four from Africa, six from South America and the Caribbean, six from southern Asia and one from south-eastern Asia. Although the studies covered a mix of urban and rural settings, most were carried out among participants with a low socioeconomic status (Table 1, available from: http://www.who.int/bulletin/volumes/89/8/11-088187).

Seven studies were cross-sectional, six were case–control studies and four used a longitudinal cohort design. Nine of the 17 studies were based on representative community samples, four used a diagnostic measure of depression and 15 controlled for at least two confounding variables (Table 2, available from: http://www.who.int/bulletin/volumes/89/8/11-088187). In addition, 10 of the 13 studies that reported a response rate had a rate ≥ 80%.

Most studies used the WHO criteria of a weight-for-age or height-for-age z-score < −2 to identify underweight or stunting, respectively. All 17 studies as-
sessed underweight. They used a variety of measures: nine used a weight-for-age z-score < –2; three used a weight-for-age below the fifth percentile given in WHO and Centers for Disease Control and Prevention growth charts; 17 one used a weight-for-age below the equivalent 10th percentile; one used a weight-for-age below the third percentile; one used a weight-for-age 50% to 80% of the expected value; one used a weight-for-age < 75% of the expected value and one used the combined measure of a current weight-for-age z-score < –1.5 plus a history of a weight-for-age z-score < –2. Twelve studies assessed stunting; nine used a height-for-age z-score < –2; two used a height-for-age below the fifth percentile given in WHO and Centers for Disease Control and Prevention growth charts; and one used a height-for-age below the 10th percentile.

Studies used a wide range of indicators of maternal depression. Four used a diagnostic measure of depression based on either the *Diagnostic and statistical manual of mental disorders* \(^\text{(5)}\) \(n = 3\) or the *International classification of diseases* \(^\text{(6)}\) \(n = 1\); five used a measure of depressive symptoms such as the Edinburgh Postnatal Depression Scale \(^\text{(7)}\) \(n = 2\) or the Center for Epidemiologic Studies Depression Scale \(^\text{(8)}\) \(n = 3\); and eight used a measure of mental disorders such as the 20-item WHO Self-Reporting Questionnaire \(^\text{(9)}\) \(n = 7\) or the Adult Psychiatric Morbidity Questionnaire \(^\text{(10)}\) \(n = 1\). Some deviations from the standard use of these measures were observed: for example, one study analysed only items related to depression on the Self-Reporting Questionnaire.

Overall, most studies found a null or marginally significant relationship between maternal depression and poor child growth. However, the direction of the association was always the same: the worse the depression, the greater the growth deficit. Only 6 of the 17 studies on underweight and 5 of the 12 on stunting found a statistically significant relationship with maternal depression.

**Underweight meta-analysis**

The meta-analysis of the relationship between maternal depression and child underweight included effect size estimates from 17 studies (Fig. 1)\(^\text{(11)}\)–\(^\text{(18)}\) covering a combined study population of 13 923 mother and child pairs. The pooled data showed a moderate, statistically significant relationship between maternal depression and underweight (OR: 1.5; 95% confidence interval, CI: 1.2–1.8). The heterogeneity of the findings was substantial \((Q\text{-statistic}: 39.94;\text{df} = 16, p < 0.001)\).

Table 2. Quality* of studies included in systematic review of maternal depression and child growth in developing countries, 1996–2010

<table>
<thead>
<tr>
<th>Study design</th>
<th>Selection</th>
<th>Exposure assessed using diagnostic test</th>
<th>Comparability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Representative study sample</td>
<td>Depression assessed using diagnostic test</td>
<td>Adjustment for 2 or more demographic variables</td>
</tr>
<tr>
<td>Prospective longitudinal cohort</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Patel et al. 2003(^\text{2})</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rahman et al. 2004(^\text{2})</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Tomlinson et al. 2006(^\text{2})</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Santos et al. 2010(^\text{3})</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Case–control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adewuya et al. 2008(^\text{4})</td>
<td>No</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Anoop et al. 2004(^\text{5})</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Baker-Hennigham et al. 2003(^\text{6})</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Carvalhaes et al. 2002(^\text{7})</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>de Miranda et al. 1996(^\text{8})</td>
<td>No</td>
<td>NA</td>
<td>No</td>
</tr>
<tr>
<td>Rahman et al. 2004(^\text{9})</td>
<td>No</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Cross-sectional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black et al. 2009(^\text{10})</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Harpham et al. 2005(^\text{11})</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Harpham et al. 2005(^\text{12})</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Harpham et al. 2005(^\text{13})</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Stewart et al. 2008(^\text{14})</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Surkan et al. 2008(^\text{15})</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* NA, not available (data were either incomplete or not reported); OR, odds ratio.

\(^\text{a}\) Study quality was assessed using a checklist adapted from the Newcastle–Ottawa Scale for assessing the quality of nonrandomized studies in meta-analyses.

\(^\text{b}\) Women and children included in the study were representative of the community.

\(^\text{c}\) Individuals who refused to participate and those lost to follow-up were included in calculating the response rate.

\(^\text{d}\) Individuals who were not assessed using a diagnostic test for depression were assessed using a measure of depressive symptoms or of common mental disorders.

\(^\text{e}\) The analysis of the relationship between maternal depression and child growth was adjusted for at least two demographic variables.

\(^\text{f}\) In this study, multivariate adjustments were made for more than two demographic variables. However, the data used in our meta-analysis were based on crude estimates because maternal depressive symptoms were not included in the final adjusted model due to the stepwise procedure.

\(^\text{g}\) In this study, multivariate adjustments were made for growth outcomes as continuous variables but only the crude OR was presented in the paper. For the meta-analysis, ORs were based on an adjusted analysis of data obtained from the authors of the original study.
Maternal depression and child growth in developing countries

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Table 3

<table>
<thead>
<tr>
<th>Study</th>
<th>Location</th>
<th>OR and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adeyewu et al. 2008</td>
<td>Nigeria</td>
<td></td>
</tr>
<tr>
<td>Anoop et al. 2006</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Baker-Henningsham et al. 2003</td>
<td>Jamaica</td>
<td></td>
</tr>
<tr>
<td>Black et al. 2009</td>
<td>Bangladesh</td>
<td></td>
</tr>
<tr>
<td>Carvalheas et al. 2002</td>
<td>Brazil</td>
<td></td>
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<tr>
<td>de Miranda et al. 1996</td>
<td>Brazil</td>
<td></td>
</tr>
<tr>
<td>Harpham et al. 2005</td>
<td>Ethiopia</td>
<td></td>
</tr>
<tr>
<td>Harpham et al. 2005</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Harpham et al. 2005</td>
<td>Peru</td>
<td></td>
</tr>
<tr>
<td>Harpham et al. 2005</td>
<td>Vietnam</td>
<td></td>
</tr>
<tr>
<td>Patel et al. 2003</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Rahman et al. 2004 (urban)</td>
<td>Pakistan</td>
<td></td>
</tr>
<tr>
<td>Rahman et al. 2004 (rural)</td>
<td>Pakistan</td>
<td></td>
</tr>
<tr>
<td>Santos et al. 2010</td>
<td>Brazil</td>
<td></td>
</tr>
<tr>
<td>Stewart et al. 2008</td>
<td>Malawi</td>
<td></td>
</tr>
<tr>
<td>Surkan et al. 2008</td>
<td>Brazil</td>
<td></td>
</tr>
<tr>
<td>Tomlinson et al. 2006</td>
<td>South Africa</td>
<td></td>
</tr>
</tbody>
</table>

Combined estimate (Q = 25.00; P = 0.005)

Discussion

Our analysis revealed a positive and significant association between maternal depressive symptoms and impaired child growth in developing countries. Our meta-analysis of 17 studies, based on adjusted estimates when possible, showed that the children of depressed mothers were at an increased risk of both underweight and stunting: the combined OR was approximately 1.4. This finding emerged after combining the results of studies that had very different designs, came from a wide range of locations and included children of different ages.

Because the findings varied across studies, we conducted subanalyses to explore how they might be altered by applying stricter definitions of maternal depression and of child growth outcomes or by restricting the analysis to longitudinal studies alone. When strict definitions of underweight and stunting were used, the magnitude of the pooled estimate for the relationship between maternal depression and inadequate growth was almost unaffected. When a strict definition of maternal depression was used, the OR for poor child growth increased. Finally, when the analysis was restricted to longitudinal studies, the pooled results showed strong associations with maternal
depression: the ORs for underweight and stunting were approximately 2.2 and 2.0, respectively. However, because this subanalysis was based on only four longitudinal studies, its findings must be considered preliminary and need to be confirmed by more prospective studies.

Using data from four selected studies, we estimated a PAR for inadequate growth in the range of 23–29%. However, this estimate is imprecise because the four studies used different measures of depressive symptoms and controlled for different confounding variables.

The mechanisms responsible for the association between maternal depression and inadequate child growth are not clear. Nor is it known whether these mechanisms vary between countries and regions. Cultural differences in caregiving and feeding and the degree of food insecurity may all play a role. Previous research suggests that maternal depression is associated with compromised parenting behaviour, nonresponsive caregiving practices and a lower likelihood of breastfeed- ing. The time at which child growth is measured may also influence the observed association with maternal depression: Stewart et al. hypothesized that, because caregivers other than the mother often become more involved after weaning, the effect of maternal depression may be more pronounced in the immediate post-partum period. Of the articles included in the meta-analysis, only two evaluated the influence of other factors on the relationship between maternal depressive symptoms and child growth. Black et al. found that the effect of maternal depressive symptoms on infant height-for-age was partially mediated by the home environment, whereas maternal perceptions of infant temperament had no effect. Surkan et al. found no evidence that the relationship between maternal depressive symptoms and stunting was mediated by parenting self-efficacy, which reflects the belief parents have in their ability to care for their children. Future research should examine the mechanisms linking maternal depressive symptoms and child growth.

The review was limited by the modest number of studies included; only 17 were available overall and only four were included in the subanalysis of longitudinal studies. Additionally, the studies varied in quality, as reflected in the way they adjusted for potential confounding variables: one study adjusted for covariates individually while another made no adjustments. In some regions, most studies were from the same country; for example, four of the five studies from South America were conducted in Brazil. As in any systematic review, publication bias may have affected our findings; significant findings may have been disproportionately reported in the literature, as suggested by the funnel plots for both underweight and stunting in the meta-analysis. Consequently, our meta-analysis may have overestimated the

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**Table 3. Effect of maternal depressive symptoms on child underweight or stunting in selected studies from developing countries, 1996–2010**

<table>
<thead>
<tr>
<th>Study</th>
<th>Measure of depressive symptoms</th>
<th>Mothers with depressive symptoms (%)</th>
<th>Underweight or stunted children (%)</th>
<th>Underweight or stunting prevalence (%) in children of mothers with depressive symptoms</th>
<th>Adjusted OR</th>
<th>RR</th>
<th>PAR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patel et al. 2003</td>
<td>EPDS</td>
<td>23.0</td>
<td>16.4</td>
<td>30.0</td>
<td>2.8</td>
<td>2.26</td>
<td>22.5</td>
</tr>
<tr>
<td>Surkan et al. 2008</td>
<td>CES-D</td>
<td>55.0</td>
<td>4.0</td>
<td>5.8</td>
<td>1.8</td>
<td>1.75</td>
<td>29.4</td>
</tr>
<tr>
<td>Stunting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patel et al. 2003</td>
<td>EPDS</td>
<td>23.0</td>
<td>12.3</td>
<td>25.0</td>
<td>3.2</td>
<td>2.65</td>
<td>27.5</td>
</tr>
<tr>
<td>Black et al. 2005</td>
<td>CES-D</td>
<td>52.0</td>
<td>36.9</td>
<td>45.3</td>
<td>2.3</td>
<td>1.71</td>
<td>27.0</td>
</tr>
</tbody>
</table>

CES-D, Center for Epidemiologic Studies Depression Scale; EPDS, Edinburgh Postnatal Depression Scale; OR, odds ratio; PAR, population attributable risk; RR, relative risk.

* The relative risk for each study was calculated from the adjusted OR and the prevalence of underweight or stunting, as appropriate, in children of depressed mothers.
Abstract

Systematic reviews

Maternal depression and child growth in developing countries

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There is a need for future research to explore the mechanisms and causes. Recent studies suggest that depression can be sufficiently treated in developing countries. However, there are only a few benefits of child growth substantially, and this could in turn influence the children’s future health, development and socioeconomic status.

Acknowledgements

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Competing interests: None declared.

Results

Eating the incidence of depression in women in developing countries vary widely, from 15%–57%.[40] Depression in these women has a complex etiology involving factors as diverse as poverty, marital conflict, domestic violence and lack of control over economic resources.[50] However, recent studies suggest that depression can be sufficiently treated in developing countries.[51] Various interventions, such as social support, group therapy or home visits, which are often delivered by lay community workers, have led to a reduction in maternal depression symptoms in a range of countries, including China, Jamaica, Pakistan, South Africa and Uganda.[51–57] Interventions aimed at improving parenting and the mother–infant relationship have been effective in reducing depressive symptoms in post-partum women,[55–57] which suggests that maternal depression is modifiable. Our findings indicate that a reduction in the incidence of maternal depressive symptoms in developing countries would not only have a beneficial effect on mothers, but would also improve child growth substantially, and this could in turn influence the children’s future health, development and socioeconomic status.[2–12] ■

Malnourishment

Poor and weight and growth in developing countries: a systematic review and meta-analysis

Although the definitions of underweight and stunting differ between the studies, height and weight were measured, not self-reported. In contrast, the diagnosis of maternal depression and its severity may have been less precise owing to the use of depression scales that were not validated in the study populations, particularly since different cultures have differing concepts of depression. In addition, there may be a reciprocal relationship between maternal mental health and child health given that a child’s poor health could generate depressive symptoms in the mother.[39] Subsequent research should investigate the possibility that poor child growth increases the risk of maternal depression.

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Competing interests: None declared.
Résumé

Dépression maternelle et croissance de la petite enfance dans les pays en développement: examen systématique et méta-analyse

Objectif Étudier la relation entre dépression maternelle et croissance infantile dans les pays en développement par un examen systématique de la documentation et une méta-analyse.

Méthodes Six bases de données ont été consultées pour les études sur la dépression maternelle et la croissance des enfants dans les pays en développement, publiées jusqu’en 2010. Les méthodes standard de méta-analyse ont été suivies et les odds ratios (OR, rapports des chances) mis en commun pour l’insuffisance pondérale et le retard de croissance des enfants de mères déprimées ont été calculés en utilisant des modèles à effets aléatoires pour toutes les études et pour les sous-ensembles d’études qui répondaient aux critères stricts de conception d’étude, d’exposition à la dépression maternelle et de variables de résultat. Le risque attribuable dans la population (RAP) a été estimé pour des études sélectionnées.

Résultats Dix-sept études, incluant un total de 13 923 paires de mère et enfant de 11 pays, remplissaient les critères d’inclusion. Les enfants de mères souffrant de dépression ou de symptômes dépressifs étaient plus susceptibles de présenter une insuffisance pondérale (IP: 1,5; intervalle de confiance, IC de 95%: 1,2–1,8) ou un retard de croissance (IP: 1,4; IC de 95%: 1,2–1,7). La sous-analyse de trois études longitudinales a montré un effet plus important: l’OR pour insuffisance pondérale était de 2,2 (IC de 95%: 1,5–3,2) et pour retard de croissance, de 2,0 (IC de 95%: 1,0–3,9).

La RAP des études sélectionnées a indiqué que si la population infantile était entièrement non-exposée à des symptômes dépressifs maternels, 23 à 29% d’enfants en moins souffraient d’insuffisance pondérale ou de retard de croissance.

Conclusion La dépression maternelle est associée à l’insuffisance pondérale et au retard de croissance de la petite enfance. De rigoureuses études prospectives sont nécessaires pour en identifier les mécanismes et les causes. L’identification précoces, le traitement et la prévention de la dépression maternelle peuvent aider à réduire le retard de croissance et l’insuffisance pondérale des enfants dans les pays en développement.

Резюме

Материнская депрессия и рост детей в раннем возрасте в развивающихся странах: систематический обзор и мета-анализ

Цель Исследовать связь между материнской депрессией и ростом ребенка в развивающихся странах с помощью систематического обзора литературы и мета-анализа.

Методы Проведён поиск в шести базах данных для выявления исследований из развивающихся стран по тематике материнской депрессии и роста ребенка, опубликованных за период по 2010 года. Авторы использовали стандартные методы мета-анализа и производили расчет суммарного отношения шансов (ОШ) по пониженной массе тела и задержке роста у детей, чьи матери страдали депрессией, с использованием моделей случайных эффектов для всех исследований и подгрупп исследований, которые удовлетворяли точным критериям в отношении плана исследования, экспозиции к воздействию материнской депрессии и переменных показателей исхода. Для некоторых исследований проводилась оценка популяционного добавочного риска (ПДР).

Результаты Критериям включения в обзор удовлетворяли 17 исследований, которые в сумме охватывали 13 923 пары «мать – ребенок» из 11 стран. У детей матерей с депрессией или отдельными ее симптомами была выше вероятность пониженной массы тела (ОШ: 1,5; 95% доверительный интервал, ДИ: 1,2–1,8) или задержки роста (ОШ: 1,4; 95% ДИ: 1,2–1,7). При субанализе трёх лонгитюдных исследований отмечен более сильный эффект: ОШ для пониженной массы тела составляло 2,2 (95% ДИ: 1,5–3,2), а для задержки роста – 2,0 (95% ДИ: 1,0–3,9). Оценка ПДР для некоторых исследований показала, что если популяция детей в возрасте до 1 года совершенно не подвержена воздействию симптомов материнской депрессии, то в ней детей с пониженной массой тела или задержкой роста на 23–29% меньше.

Вывод Отмечена корреляция между материнской депрессией и пониженной массой тела и задержкой роста детей в раннем возрасте. Для выявления механизмов и причин этого необходимо проведение строгих проспективных исследований. Помочь снизить долю детей с задержкой роста и пониженной массой тела в развивающихся странах могут ранние выявление, лечение и профилактика материнской депрессии.
Resumen
Depresión materna y crecimiento durante la primera infancia en los países en vías de desarrollo: revisión sistemática y metaanálisis

Objetivo Investigar la relación entre la depresión materna y el crecimiento infantil en países en vías de desarrollo a través de una revisión bibliográfica sistemática y un metaanálisis.

Métodos Se realizó una búsqueda en seis bases de datos para hallar estudios realizados en países en vías de desarrollo sobre la depresión materna y el crecimiento infantil que hubieran sido publicados antes de 2010. Se emplearon métodos metaanalicíticos y se calculó el conjunto de oportunidades relativas (OR) del bajo peso y el retraso del crecimiento infantil en los hijos de madres con depresión, empleando modelos de efectos aleatorios para todos los estudios y subconjuntos de estudios que cumplieron los estrictos criterios de diseño de estudio, exposición a la depresión materna y variables de resultados. Se calculó el riesgo atribuible a la población (RAP) en los estudios seleccionados.

Resultados Los criterios de inclusión se cumplieron en 17 estudios que incluyeron a un total de 13 923 parejas de madres e hijos procedentes de 11 países. Los hijos de madres con depresión o síntomas depresivos resultaron ser más proclives a tener peso bajo (OR: 1.5; intervalo de confianza del 95%, IC: 1.2–1.8) o un retraso del crecimiento infantil (OR: 1.4; IC del 95%: 1.2–1.7). El subanálisis de tres estudios longitudinales evidenció un efecto más contundente: la OR del peso insuficiente fue de 2.2 (IC del 95%: 1.5–3.2) y para el retraso en el crecimiento infantil, 2.0 (IC del 95%: 1.0–3.9). El RAP para los estudios seleccionados mostró que si se mantuviera la población infantil completamente al margen de los síntomas de depresión de las madres, entre un 23% y un 29% menos de niños tendría bajo peso o retraso en el crecimiento infantil.

Conclusión La depresión materna se asoció al bajo peso y al retraso en el crecimiento en la primera infancia. Es necesario realizar estudios prospectivos rigurosos para identificar los diversos mecanismos y causas. La detección temprana, el tratamiento y la prevención de la depresión materna podrían ayudar a reducir el retraso en el crecimiento infantil y el peso insuficiente en los niños de los países en vías de desarrollo.

Referencias
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