Introduction
Maternal depression may interfere with healthy child development and is an important risk factor for behavioral and psychological problems, starting from infancy and lasting through adulthood. Exposure during crucial periods early in life, starting in pregnancy, is related to poorer child outcomes. Chronic symptoms at varying levels of severity also predict worse offsprings adjustment both in the short and long-term.

Aims and Objectives
The aim of the study was to examine the relationship between timing and chronicity of maternal depression and children’s behavior at age 5 years, in particular:
• The influence of maternal depression trajectories from pregnancy to the child’s age 5 on different aspects of child difficulties (internalizing, externalizing and peer difficulties)
• The presence of sensitive periods (prenatal, postpartum, preschool) during which maternal depression has the largest impact on child behavior
• Whether there are differential effects according to parental socio-economic status

Materials and methods
Data were collected as part of the EDEN mother-child study, a longitudinal community based cohort conducted in France.

Measures
• Socio-demographic and biomedical data on mother and child, collected from medical records, face to face interviews and self-completed questionnaires
• Maternal depressive symptoms: Center for Epidemiological Studies Depression (CESD) and Edinburgh Postnatal Depression Scale (EPDS)
• Child behavior: Strengths and Difficulties Questionnaire (SDQ)

Analysis
• Growth trajectory analysis (PROC TRAJ in SAS 9.3) to identify distinct groups of mothers based on their depression scores
• Multiple regression models to examine the association between maternal depression trajectories and timing and SDQ scores at 5y
• Moderation analyses for mother’s education and family income

Results
Identification of maternal depression trajectories in early childhood
We found five trajectory groups of maternal depressive symptoms from pregnancy through 5 years later: 1) No symptoms (62.0%; n=736) 2) High symptoms in pregnancy only (3.6%; n=42) 3) Intermediate depressive symptom levels throughout follow-up (25.3%; n=297) 4) High symptoms in preschool period (4.6%; n=54) 5) Chronic high depressive symptoms throughout follow-up (4.6%; n=54)

Maternal depression timing and child behavior
Child problem behavior varied as a function of maternal trajectory membership

Maternal depression timing and child behavior
CES-D and EPDS scores were dichotomized in three discrete time periods, i.e. pregnancy, the first postpartum year (4, 8 and 12 months), and the preschool period (3 and 5 years). Depression in postpartum and preschool, but not pregnancy, was significantly related to SDQ overall and subscale scores (p<.05), except for the prosocial subscale.

Differential effects for parental SES
Maternal education level moderated the effect of postpartum depression on conduct problems (β=-.65, p=0.03) and hyperactivity/inattention subscales (β = .87, p<.01), as well as overall problem behavior (β=-1.78, p<.01).

Conclusions
• Children whose mothers had chronic or intermediate levels of depressive symptoms had more problem behavior than those with non-depressed mothers. A chronic course of depressive symptoms, even of subclinical severity, may have deleterious effects on child wellbeing.
• The impact of maternal depressive symptoms on child behavior varies with the developmental period in which they occur. Maternal depression in the postpartum period or when the child attends preschool is most strongly associated with adverse child emotional and behavioral outcomes.
• Children whose mothers have a low educational level show more problem behavior at age five after exposure to postpartum depressive symptoms.
• Identifying mothers in need of support and addressing their needs may help reduce the burden of early behavioral problems in children

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