



**Karolinska  
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**Department of Neurobiology, Care Sciences and Society**

## Risk factors and consequences of maternal perinatal depressive and anxiety symptoms: A community-based study in rural Bangladesh

AKADEMISK AVHANDLING

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## ABSTRACT

**Background:** There is a paucity of research on maternal depressive and anxiety disorders and its association with infant birth outcome and growth in the South Asian region including Bangladesh. This study aims to investigate the prevalence and risk factors of depressive and anxiety symptoms surrounding childbirth and their impact on infant birth outcomes and physical development at 2–3 months and 6–8 months postpartum in rural Bangladesh.

**Methods:** This thesis is based on four studies originating from a community-based, prospective cohort study of 720 women in late pregnancy (I), delivery (II), 2–3 months postpartum (III, IV) and 6–8 months postpartum (III, IV) in two rural sub-districts of Bangladesh. Due to attrition (8.3%), the samples differed for different studies: 720 pregnant women in Study I, 583 women and infants in Study II, 588 women in Study III, and 652 women and infants in Study IV. The validated Bangla version of the Edinburgh Postnatal Depression Scale (EPDS-B) was used to measure depressive symptoms during pregnancy and postpartum, and the trait-anxiety scale of the State-Trait Anxiety Inventory (STAI) was used to assess general anxiety during pregnancy. Trained interviewers carried out structured interviews at the respondents' homes to elicit relevant background information during pregnancy; infant height and weight at birth; infants height, weight, illness, and feeding practices at 2–3 months; and additional information on infant temperament and motor development at 6–8 months postpartum. Multiple linear regression (I, IV), logistic regression (I, II), and Cox regression models (III) were used to find the study-specific determinants.

**Results:** Prevalence of antepartum depressive symptoms (ADS) was 18% and antepartum anxiety symptoms (AAS) 29% (I). The incidence proportion of postpartum depressive symptoms (PDS) was 8% at 2–3 months postpartum and 18% at 6–8 months postpartum (III). The associated factor for ADS were women's literacy (OR 0.59, CI<sub>95%</sub> = 0.37–0.95), poor partner relationship (OR 2.23, CI<sub>95%</sub> = 1.37–3.62), forced sex (OR 1.95, CI<sub>95%</sub> = 1.01–3.75), physical violence by spouse (OR 1.69, CI<sub>95%</sub> = 1.02–2.80), and previous depressive symptoms (OR 4.62 CI<sub>95%</sub> = 2.72–7.85) (I). Similarly, poor socioeconomic status (HR 2.62, CI<sub>95%</sub> = 1.83–3.73), physical partner violence during pregnancy (HR 1.65, CI<sub>95%</sub> = 1.08–2.50), anxiety symptoms during pregnancy (HR 1.69, CI<sub>95%</sub> = 1.16–2.46), and previous depressive symptoms (HR 2.95, CI<sub>95%</sub> = 1.80–4.84) were identified as risk factors for PDS (III). ADS and AAS were twice as likely to be associated with LBW ( $\leq 2.5$  kg) over and above the effect of conventional risk factors such as poverty and maternal malnutrition (II). Likewise, maternal PDS independently predicted infant underweight and impaired motor development, and ADS predicted infant stunting (IV).

**Conclusion:** This population-based study confirms that, in rural Bangladesh, depressive and anxiety symptoms are common during pregnancy and postpartum, and that they effect infant birth weight and infant growth and motor development at 6–8 months, consequently extending the burden of disease to the next generation. Policies aimed at the detection and effective management of depressive and anxiety symptoms during pregnancy and 6–8 months postpartum may reduce the burden on mothers and also act as an important measure in the prevention of LBW, underweight, and stunting among offspring in Bangladesh.

**Key words:** Depression, anxiety, antepartum, postpartum, low birth weight, underweight, stunting, rural Bangladesh  
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