

Psychosocial stress remains one of the most important factors that limit reproduction of urban women. One of the crucial stages of reproductive process is lactation period. Breast milk is not only a primary source of energy for the growing child, but also provides components essential for healthy biological and cognitive development. The influence of psychological stress on lactation process is not fully understood, especially when it comes to its effects on breast milk composition. In fact, only limited information may be found on this topic in current scientific literature.

This project aims to investigate the complex association between maternal psychosocial stress, lactation and infant psychological and biological development. In particular, we aim to explore the influence of the maternal stress on the level of hormones associated with lactation, breast milk composition, infant growth curve and temperamental development during the first year of life. We also aim to depict differences in development of the infants whose mothers suffer from episodes of prolonged, chronic stress and short, acute stress.

The participants of this study will be 180 urban mothers whose healthy infants are at the age of four months. All infants will be exclusively breastfed from the beginning of their life. We will collect and analyze information about the level of perceived everyday maternal stress, based on a battery of psychological questionnaires. We will also assess physiological measures of mothers' stress by analyzing levels of hormones in saliva and urine samples taken from mothers at the day of examination. Furthermore, to describe breast milk composition we will collect milk samples which will be analyzed to assess proteins, sugars and fat content. To characterize infants' growth we will collect data about their body mass and length and head circumference measured consecutively at birth, at the age of 6, 12, 18 weeks and 12 months. To characterize temperamental development of the infants we will ask their mothers to fill in infant temperamental questionnaires at the age of four and twelve months. In addition, range of economic, reproductive and lifestyle information will be collected from the mothers and included in the final statistical analysis.

By employing interdisciplinary approach, the proposed study will provide important information about the physiological and behavioral pathways of the influence of maternal stress on lactation and development of the infants during the crucial period of their life. By understanding the mechanism of the influence of mother's stress on infant biology and psychology health care professionals can more effectively develop strategies that promote breastfeeding, alleviate health challenges associated with stress and reproduction and ensure normal infant development.