Institute of Zoology and Biomedical Sciences

Topic: Infant social development, breastfeeding, and breast milk composition

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Background information:
The development of early social communication skills in infants and young children remains under the constant interest of psychologists (Hansen et al., 2018). These early social skills, such as eye gaze, joint attention, social referencing, and social orienting, are typically developed in the first two years of life in the context of everyday interactions (DeQuinzio et al. 2016). While several psychological factors were identified to drive the development of these skills, studies in this area usually ignore the effect of biological factors such as breastfeeding. Meanwhile, research shows that breastfeeding is an essential factor in facilitating the neurocognitive and temperamental development of infants and, as such, might be critical for the formation of communication skills.

The main question to be addressed in the project:
This project seeks to understand the association between breastfeeding and the development of infant social skills during the first year of life. In particular, this project will investigate the effect of breastfeeding patterns (number and duration of breastfeeding episodes during the day) and breast milk composition (main milk nutrients and fatty acids) are related to the development of early social communication skills in 1-year old infants.

Information on the methods/description of work:
The project is based on the pre-existing data set collected during the grant awarded to the supervisor. During the project, around 150 infants, aged about 12 months, were filmed while participating in The Early Social Communication Scales (ESCS) tasks (Mundy et al., 2003).

ESCS is a videotaped structured observation designed to provide measures of individual differences in nonverbal communication skills that typically emerge in children between 8 and 30 months of age. Also, data about breastfeeding pattern and breastmilk composition (the content of lactose, protein, fats, fatty acids, and energy value of milk) was collected when infants were around five and twelve months old. The examined associations will be controlled for infant temperamental characteristics and markers of infant biological development. The role of a Ph.D. candidate will be to analyze the videotaped tasks and further to conduct the necessary statistical analysis to test the potential associations. During her/his work, the candidate will collaborate with the Institute of Psychology, Department of Developmental Psychology, and if agreed with program COGNES (Ph.D. in Cognitive Neuroscience) of Jagiellonian University.

Place/name of potential foreign collaborator:
Leiden University, Department of Clinical Psychology, Dr Marieke Tollenaar

References:

1 Hansen, S. G., Carnett, A., & Tullis, C. A. (2018). Defining early social communication skills: A systematic review and analysis. *Advances in Neurodevelopmental Disorders*, *2*(1), 116-128.

2 DeQuinzio, J. A., Poulson, C. L., Townsend, D. B., & Taylor, B. A. (2016). Social referencing and children with autism. *The Behavior Analyst, 39*(2), 319–331.

3 Mundy, P., Delgado, C., Block, J., Venezia, M., Hogan, A., & Seibert, J. (2003). Early social communication scales (ESCS). Coral Gables, FL: University of Miami.