

Targeted Project / AY 2026 -2027

Investigating associations between maternal mental health, early parent-infant interactions and brain functional connectivity in the first six months of life in UK and Gambian infants

Project Reference: TRG-PD-SLF26

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Main BBSRC strategic theme: Bioscience for an integrated understanding of health

Secondary BBSRC strategic theme: Transformative technologies

Project outline:

Parental anxiety and depression have been associated with alterations in functional brain connectivity (FC) in infancy, a period in which rapid brain development and functional network organisation have been linked to longer term socio-emotional outcomes. Moreover, parental mental health is widely recognised to have a significant impact on parent-infant interactions and early childhood development. Studies examining the impacts of depression and anxiety on parent-infant interactions and their association with brain connectivity at multiple timepoints during early infancy are limited, and comparative research across cultural contexts, and particularly outside of high-income countries, is also lacking. A longitudinal approach is key for understanding how changes in parental mental health across the perinatal period may influence infant outcomes. During this PhD, the student will use existing data collected as a part of the Brain Imaging for Global Health Project (BRIGHT) in The Gambia and the Perinatal Imaging Partnership with Families (PIPKIN) in the UK, which are longitudinal studies examining infant development from birth. The findings of this PhD have the potential to inform the development of culturally sensitive and targeted interventions to support parental and infant health during critical developmental periods. By comparing parental mental health and parent-infant interactions in the UK and the Gambia, the study will enhance our understanding of how cultural contexts influence the impact of maternal mental health on early interactions and brain development. As these projects are multi-measure, multiple time point designs, the student could also use draw on biomarkers from biological samples, epigenetic and growth measures to further explore the impact of poverty associated factors on these relationships.