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Neurodevelopmental outcomes associated with care setting in children orphaned by AIDS

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Objective: Given the number of children orphaned worldwide, it is important to discern the types of care settings which are associated with optimal neurodevelopment, and identify timing and care setting parameters that are associated with health/pathology.

Methods: We applied neurocognitive and behavioral assessments, and structural (diffusion weighted imaging) and functional (resting state) MR imaging protocols in a sample of 124 Chinese children (mean age=14.7+1.5 years), in three care settings (orphanage, community group home, kinship care), and two age of onset of adversity groups (before 3 years, after 8 years). Data analysis included between-group (care setting) comparisons on cognitive/behavioral outcomes and also, using connectome analysis for structural and functional brain imaging data, neural connectivity. Regressions were used to test relationships between duration in care and outcomes across settings, and also whether relationships are moderated by age of onset of adversity.

Results: Children raised in orphanages and kinship settings had increased incidence of cognitive/behavioral problems compared to children cared for in community group homes. Further, orphanage rearing was associated with altered neural connectivity, especially involving frontal and temporal connectivity, as compared to community group care. Outcomes were associated with duration of time in care (longer duration in orphanage was associated with poorer outcomes over time, care in group homes was associated with improved outcomes over time), and were accentuated in children with onset of adversity before 3 years.

Conclusion: Community group home care was associated with improved neurodevelopmental outcomes, particularly as compared to orphanage care. Further, such outcomes appear to be strengthened (worsening in orphanage, improving in community care) over time in such settings, particularly in children who experience early onset of adversity. Such data may have important implications for policy decisions for how the growing numbers of orphaned children, worldwide, can be best cared for.

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