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Profound social deprivation produces permanent imprint

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English key words: psychosocial deprivation, neurodevelopmental disorders, child, institutionalized, adoption.

Spanish kew words: privación psicosocial, trastorno del neurodesarrollo, niño, institucionalización, adopción.

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Profound social deprivation produces permanent imprint

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Original article: Sonuga-Barke EJS, Kennedy M, Kumsta R, Knights N, Golm D, Rutter M, *et al.* Child-to-adult neurodevelopmental and mental health trajectories after early life deprivation: the young adult follow-up of the longitudinal English and Romanian adoptees study. *Lancet.* 2017;389:1539-48.

Abstract

Authors' conclusions: despite the resilience demonstrated by some of the adopted children and the remission of problems in the adult age in some cases, prolonged early deprivation was associated with adverse effects on the long term on the wellness of the studied children and this situation was not susceptible to improvement even after years of adequate care and support by adopting families.

Reviewers' commentary: this is a well-designed study with a control group that evaluates the impact of prolonged deprivation in infancy on posterior development. The conclusions indicate that the long-term problems can become permanent despite the inclusion in a normal familial environment.

Key words: psychosocial deprivation, neurodevelopmental disorders, child, institutionalized, adoption.

La privación social profunda deja una impronta permanente

Resumen

Conclusiones de los autores del estudio: a pesar de la resiliencia demostrada por algunos adoptados y la remisión en la edad adulta en algunos casos, la privación temprana prolongada se asoció con efectos perjudiciales a largo plazo sobre el bienestar de las personas estudiadas, que no mejoró tras años de nutrición y apoyo adecuado por parte de las familias adoptantes.

Comentario de los revisores: aunque los resultados del estudio parecen válidos, no podemos asumir que el grado de repercusión observado en este estudio sea aplicable a otros ámbitos de adopción. Las conclusiones indican que los problemas a largo plazo llegan a ser permanentes a pesar de la acogida en un entorno familiar adecuado.

Palabras clave: privación psicosocial, trastorno del neurodesarrollo, niño, institucionalización, adopción.

STRUCTURED ABSTRACT

Objective: to assess the impact of early deprivation due to institutionalization on child development.

Design: prospective cohort study. Natural experiment.

Setting: United Kingdom.

Study population: children in the English and Romanian Adoptees Study. Longitudinal study on the development of children adopted from Romanian orphanages by United Kingdom families in the early 1990s and followed up to adulthood.

Risk factor assessment: Romanian adoptees were divided into those that spent fewer than 6 months in an institution (Rom<6) and those that spent more than 6 months (Rom>6). A group of United Kingdom adoptees (UK) that had not experienced deprivation was used for control. The authors used mixed-effects regression models for ordered-categorical outcome variables to compare symptoms, levels and trends between groups, and also contrasts of simple effects (χ^2 and McNemar) to assess differences in binary outcomes or covariates as well as the co-occurrence of symptoms among outcome domains. They investigated missing data by means of multivariate tests.

Outcome measurement: outcomes were measured by means of developmentally appropriate standard questionnaires, interviews with parents and adoptees, and direct measures of the intelligence quotient (IQ), symptoms of autism spectrum disorder (ASD) (15 items from the Social Communication Questionnaire), attention-deficit hyperactivity disorder (ADHD) (revised Rutter scale at ages 6 and 11 years, Strength and Difficulties Questionnaire at age 15 years and Conners Behavior Rating Scale at age 22-25 years), disinhibited social engagement, conduct or emotional problems, and cognitive impairment (IQ < 80) (McCarthy scales at age 6 years, Wechsler scales at all other ages). The authors also documented the use of mental health services, educational achievement, employment status, and socioeconomic status of the parents. They administered the Parental Attachment Questionnaire to parents and the Parent and Peer Attachment Questionnaire to young adult adoptees. A DNA sample was collected for analysis at age 15 years.

Main results: the Rom<6 and the UK groups had similarly low levels of symptoms at most ages, so they were pooled for the comparative analysis. In contrast, the Rom>6 group had consistently higher rates of ASD features (relative risk* [RR] at 6, 15 and 25 years: 2.7/0.9/3.1), disinhibited social engagement (RR: 2.7/could not be calculated/5.1), and ADHD (RR: 2.6/2.4/4.3). The risk of cognitive impairment in the Rom>6 group, which was substantially high compared to the rates in the combined Rom<6 and UK group at ages 6 years (RR: 3.1; 38.8% versus 12.7%) and 15 years (RR: 2.36; 28.1% versus 11.9%), decreased in the young adult age group (RR: 0.7; 5.6% versus 7.9%). Conversely, self-reported emotional symptoms exhibited a delayed increasing trend, with minimal differences at ages 11 and 15 years and marked increases in young adults, with effects that were similar to those observed in the ratings reported by parents. There was also a higher proportion in the Rom>6 group of individuals with low educational achievement, unemployment and greater use of mental health services compared to the UK group. Only one fifth (n = 15) of individuals in the Rom>6 group showed no evidence of problems in any of the evaluations.

Adjustment of the models for sex and birth weight did not change the results. In the Rom>6 group, more than one fifth of the subjects had two or more problems during childhood and adolescence; however, this proportion decreased significantly to 8.5% in young adulthood.

Conclusion: despite the resilience exhibited by some adoptees and the remission observed in adulthood in some cases, prolonged early deprivation was associated with long-term deleterious effects on the wellbeing of the individuals under study, and did not improve despite years of adequate nutrition and support provided by adoptive families.

Conflicts of interest: disclosed in the original text.

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COMMENTARY

Justification: social and emotional deprivation have been considered sources of mental health problems for a long time, especially if they occur at early and critical stages of development.¹ However, while this hypothesis has been proven in animal models, no experimental studies had been conducted in humans for ethical reasons. The study of UK and Romanian adoptees could be considered a natural experiment that allowed the investigation of these factors through to adulthood.

Validity or scientific rigour: the population under study was well defined, as was the exposure. The threshold of 6 months of institutionalization (exposure) established to create the subgroups for analysis was based on previous studies on the same population.² The outcome measures were pertinent and had been assessed with validated questionnaires, but they were different for the various age groups evaluated, thus arbitrarily establishing cut-off points for each assessed variable that would be consistent for comparison.

The exposed cohort cannot be compared to individuals exposed to deprivation under different circumstances. The cohort was very compact and specific, so it probably lacks in external validity and it is hardly comparable to children adopted in different contexts. Other studies have found evidence of the influence of the country of origin of adopted minors, a history of institutionalization, or a history of foster care.³ However, the study has a considerable internal validity on account of its prolonged followup and systematic evaluations at different stages of development. We cannot exclude the possibility of an association between the degree of social deprivation and inherited abnormalities that would persist in time regardless of any changes in the environment.

The authors did not specify whether evaluators were blinded. They did perform an analysis of missing data and losses, which were similar in all groups.

The analysis was performed correctly. The authors controlled for birth weight, sex and genetic changes specifically associated with deprivation as potential confounders.⁴

Clinical relevance: the authors did not find differences in outcomes between the UK and the Rom<6 groups. The Rom>6 group exhibited a greater risk of ASD, disinhibited social engagement and ADHD at every point of the followup. Cognitive impairment was greater in childhood and adolescence, at 6 years (38.8%) and 15 years (28.1%), compared to the rates in the Rom<6 and UK group (12.7% and 11.9%),

* The RRs were calculated by the reviewers from data provided in the original article.

with attributable fractions of 67.2% and 57.5% respectively, but the difference disappeared in young adults (5.6% versus 7.9%). Emotional problems, however, only appeared in young adults. Another salient finding is that only 21% of individuals in the group with deprivation > 6 months had no abnormal results at any age.

These findings show that severe social and emotional deprivation in the early stages of life has permanent repercussions, and establish a safety threshold of up to 6 months before which it does not lead to permanent pathology.

The personal, social and economic costs produced by this deprivation and neglect in the intermediate and long term are considerable.

Applicability to clinical practice: although the results of the study seem valid, we cannot assume that the degree of impact observed in this study is applicable to different environments. Abandonment, abuse, emotional deprivation and neglect in the early stages of life can cause severe developmental sequelae, especially if they are long-lasting. These children may require psychological or psychiatric support and may have special educational needs during childhood, adolescence and even adulthood.

Conflicts of interest: the authors of the commentary have no conflicts of interest to declare.

REFERENCES

1. Zeanah CH, Gunnar MR, McCall RB, Kreppner JM, Fox NA. Sensitive periods. *Monogr Soc Res Child Dev.* 2011; 76:147-62.
2. Kreppner JM, Rutter M, Beckett C, Castle J, Colvert E, Groothues C, *et al.* Normality and impairment following profound early institutional deprivation: a longitudinal follow-up into early adolescence. *Dev Psychol.* 2007;43: 931-46.
3. Welsh JA, Viana AG. Developmental outcomes of internationally adopted children. *Adopt Q.* 2012;15:241-64.
4. Kumsta R, Marzi SJ, Viana J, Dempster EL, Crawford B, Rutter M, *et al.* Severe psychosocial deprivation in early childhood is associated with increased DNA methylation across a region spanning the transcription start site of CYP2E1. *Transl Psychiatry.* 2016;6:e830.