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TITLE: The intensity of formal daycare attendance decreases the shared environment contribution to school readiness

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ABSTRACT:

Context. It is unclear if daycare attendance could moderate genetic and environmental contribution to school readiness.

Sample. Prospective, population-based and genetically descriptive sample of 660 pairs of French Canadian twins (QNTS).

Method. We computed moderation models of GxE, CxE and ExE (Purcell 2012) to assess how daycare attendance moderates genetic, shared environment and unique environ-

ment contributions to school readiness. The number of hours per week of formal daycare attendance was reported by the primary caregiver at 5, 18, 36 and 48 months. We calculated a single score of hours per week by averaging the four-time points. School readiness was assessed with the Lollipop test at 60 months.

Phenotypic results. After correction for 14 relevant socioeconomic and perinatal covariates, each additional hour per week of formal daycare attendance is associated with a 0.13 (CI 0.02-0.24) standard deviation increase on the Lollipop test ($p = .018$).

Genetic results. The best fitting moderation model shows that daycare attendance moderates the C contribution but not A and E to individual differences in school readiness. The model shows that C explains 45% of individual differences in school readiness for children not attending formal daycare, and decreased gradually to a mere 2% for children attending formal daycare full time, e.g., 40 hours per week.

Conclusion. For school readiness, formal daycare settings appear to act as normalizing environments, possibly buffering the liability stemming from less stimulating home environment during the preschool years.

Purcell, S. (2012). "Variance Components Models for Gene–Environment Interaction in Twin Analysis."

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