Parental leisure-time physical activity, body mass index, weight change and their association with the development of eating disorders in daughters: A longitudinal population-based study

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Introduction: Several parental factors have been linked to disordered eating in children, but longitudinal studies remain rare in the field.

Aims: The aim of the study was to evaluate the longitudinal association of parental physical activity, body mass index (BMI) and long-term weight change with daughters' future eating disorders (EDs).

Methods: Participants were Finnish female twins born in 1983-1987 (N=709) and their parents. Parents reported their leisure-time physical activity, socioeconomic and anthropometric (pre-pregnancy and current) characteristics when daughters were 12 years old. Daughters underwent retrospective interviews for EDs at the mean age of 22.4 years. Cox proportional hazards modeling was used in the analysis, with covariates including daughters' academic performance, parents' education and age, as well as the other parent's physical activity and BMI or weight change.

Results: After adjusting for covariates, we found an association between higher maternal physical activity and daughters' future EDs. The results applied when all EDs were combined (HR 1.06, 95%CI 1.00,1.11) but also for daughters' restrictive EDs (HR 1.06, 95%CI 1.00,1.13). Paternal BMI before twin pregnancy was associated with daughters' all EDs (HR 1.06, 95%CI 1.01,1.13) and restrictive EDs (HR 1.08, 95%CI 1.02,1.16). Maternal BMI in daughters' early adolescence and long-term weight increase were associated with daughters' restrictive EDs (HR 1.06 95%CI 1.02,1.11) and (HR 1.02, 95%CI 1.01,1.03), respectively.

Discussion: High maternal physical activity during daughters' early adolescence and maternal long-term weight increase during daughters' childhood were prospectively associated with daughters' restrictive EDs. Additionally, both maternal and paternal BMI were associated with daughters' future restrictive EDs, but at different time points. Further longitudinal studies with more detailed parental physical activity data are needed to identify the factors underlying the association between mothers' physical activity and daughters' EDs. Moreover, parental weight increase emerged as a potential target for future research on preventative strategies for EDs.