

Parental Substance Use and its Effect on Offspring Growth at Birth, 6 months and 12 months

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Background: A child's growth (BMI, height, weight) during infancy is heavily influenced by maternal behaviors, such as substance use (alcohol, smoking, and cannabis), that occurred during and before pregnancy. However, it is less explored whether paternal behaviors, prior to fertilization, influence as maternal behaviors do and whether one substance may have a greater impact than another.

Objective: The first objective of this analysis is to determine if paternal alcohol consumption, smoking, and cannabis use significantly affected a child's growth at different points at birth, 6 months and 1 year. The second objective of this analysis is to determine which substance had the greatest effect if at all.

Methods: A secondary analysis of the Santiago Longitudinal Study and related study was conducted. Dyads were between a parent and only their first born (n=300). Then, dyads were excluded if the child did not have data for at least two time points (0m, 6m, 12m) leaving a total of n=248 for our parental-child dyad sample (n=161 maternal-child dyads and 87 paternal-child dyads). A repeated measures ANOVA was used to determine if different substances affected offspring's BMI, height, and weight z-scores at different time points.

Results: BMI z-scores were significantly higher in smokers vs non-smokers in the parent dyad sample (0.153 vs -0.005 respectively; $P=.012$) at birth. BMI z-scores were also significantly higher in the maternal dyad sample for smokers vs non-smokers (0.080 vs. -0.011 respectively; $P=.008$) at birth. Height z-scores were significantly lower when comparing cannabis users vs non-users in the maternal dyad sample (-0.345 vs -0.053 respectively; $P=0.042$) at birth.

Conclusion: There was no significant difference in growth measurements within the paternal sample when evaluating the use of different substances for any time point. Exposure to cigarettes had the greatest impact compared to other substances which was seen in both the parent-child and mother-child samples. Future research should use a greater sample and include time points later in the child's life.