

# Familial effects on youth smoking in Brazil

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**This One Pager summarises the key results** found in Palloni, de Souza and Marteleto (2016). That study estimates the magnitude and direction of effects of parental and sibling smoking on adolescent smoking behaviour in Brazil, the most populous country in Latin America, where the smoking epidemic is in the early to intermediate stages.

We use the 2008 Brazilian National Household Sample Survey (*Pesquisa Nacional por Amostragem de Domicílio—PNAD*), a unique data set with extensive information on household conditions and the smoking behaviour of household members. We estimate bivariate probit models with observations of pairs of siblings and identify the strength of parental and sibling influences on adolescent behaviours. These estimates are free from the impact of unmeasured shared household conditions and nearby environments.

There are a handful of conjectures we can infer from existing knowledge about family influences on adolescent smoking behaviours. Not all of them can be supported equally well by the available data. The following are succinct statements describing the main hypotheses we attempt to verify:

- Familial effects operating via direct influence of parent/sibling smoking are strong, even after accounting for the effects of measured shared environments.
- Parental smoking is a distinct and separable effect from siblings' smoking behaviour.
- The sex of parents and offspring plays a role only if parental smoking influences offspring smoking via mechanisms other than contributing to second-hand smoking. We expect that fathers' smoking has a stronger influence on sons than on daughters, while mothers' smoking has a stronger influence on daughters than on sons.
- According to role model dynamics, the influence of the smoking behaviour of older siblings should be stronger than the influence of younger siblings' smoking and amplified in the absence of parental smoking. By the same token, we expect same-sex effects to be stronger than opposite-sex effects.
- When *in utero* exposures are relevant, the effects of past maternal smoking must be stronger than paternal smoking, regardless of the sex of the offspring and current maternal (paternal) smoking.

Table 1 summarises the correspondence of the five hypotheses proposed and the evidence assembled by the empirical exercise. We have found that our initial conjecture about strong intergenerational effects is largely supported.

**TABLE 1**  
Evidence in support of hypotheses

Hypotheses	Bivariate probit evidence
<b>Hypothesis 1</b>	
Familial effects are strong	Yes
Parents	Yes
Siblings	Yes
<b>Hypothesis 2</b>	
Siblings' and parents' effects are separable	Yes
<b>Hypothesis 3</b>	
Sex-specific parental effects	Yes
<b>Hypothesis 4</b>	
Sex-specific sibling effects	Yes
Birth order-specific effects	Weak
<b>Hypothesis 5</b>	
<i>In utero</i> effects	Could not test

Source: Authors' elaboration.

The analysis shows that familial influences on smoking initiation emanating from parents and siblings are powerful, and that both reflect genuine direct effects, rather than being artefacts of unmeasured conditions. Parental effects vary by sex of both parents and offspring. Mothers are much more influential than fathers, but fathers are more influential on male than on female offspring. This suggests complex behavioural mechanisms, not one based on the production of second-hand smoking as a source of addiction.

Sibling effects overwhelm the effects of parental smoking. They are most powerful within same-sex sibling pairs. However, it is difficult to differentiate between mechanisms that implicate peer groups shared by siblings and those that involve individual adoption/imitation of role models. Weak effects produced by birth order point to peer group influences as evidence, but the differences between the effects of same-sex and opposite-sex sibling pairs are consistent with the imitation/role model conjecture.

Reference:  
Palloni, A., L.R. de Souza, and L.J. Marteleto. 2016. "Familial Effects on Youth Smoking in Brazil." *IPC-IG Working Paper No. 146*. Brasília: International Policy Centre for Inclusive Growth.