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The determinants of child health in France: the role of family income and parents' health

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France is characterised by a relatively high level of social inequality in health among adults, compared with other European countries.[a] Are children who are born into low-income households less healthy? Is the positive association between family income and child health independent of the intergenerational transmission of health, between parents and children? To answer these questions, Apouey and Geoffard use data from a recent general population survey to investigate the links between family income, parents' health, and child health, focusing on, inter alia, three measures: general health, digestive health, and body weight.[b]

The results reveal significant health differences among children depending on the level of family income, regardless of which health measure is used. When the link between family income and child health is re-calculated, specifically taking into account the effect of parents' health on that of their children, the direct effect of household income on child general health disappears. On the other hand, the impact of income on child digestive health and body weight remains significant. Thus, the family-income effect is independent of the intergenerational transmission of digestive health and weight, which suggests that a policy of redistribution centred on questions of nutrition might be effective.

[a] Hernandez-Quevedo C, Jones AM, Lopez-Nicolas A, Rice N, 2008. Socioeconomic inequalities in health: a longitudinal analysis of the European Community Household Panel. Social Science & Medicine, 27(6):1246–61.

[b] Apouey BH, Geoffard P-Y, 2015. Le gradient et la transmission intergénérationnelle de la santé pendant l'enfance. Economie et Statistique, 475-476:113-133.

Introduction

The health of children influences not only their well-being and their academic progress in the short term, but also their socio-economic status as adults.[3] Consequently, it is important that we understand better the determinants of child health. Recent work has brought to light a gradient (a positive and significant link) between family income and child general health in Canada,[4] the US,[5] and the UK.[6]

This statistical relationship can mean that income has a causal impact on child health: indeed, higher family income often results in life conditions and behaviours that favour child health. But this relationship can also be due to the fact that other factors have an influence on both parental income and child health. If this were the case, then family income would not have a causal effect on child health. The parents' education level might be such a factor; as might be their own

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[3] Currie J, 2009. Healthy, wealthy, and wise? Socioeconomic status, poor health in childhood, and human capital development. Journal of Economic Literature, 47(1):87-122.

[4] Currie J, Stabile M, 2003. Socioeconomic status and child health: Why is the relationship stronger for older children? American Economic Review, 93(5):1813-1823.

[5] Case A, Lubotsky D, Paxson C, 2002. Economic status and health in childhood: The origins of the gradient. American Economic Review, 92(5):1308-1334.

[6] Apouey B, Geoffard P-Y, 2013. Family income and child health in the UK. Journal of Health Economics, 22(4):715-727.

state of health. Indeed, there is evidence that parents' health is transmitted to their children (through genetic factors or health behaviours). The health gradient of children can, therefore, be the result of two different mechanisms: if the level of household income is beneficial to child health, then that can occur through its impact on the parents' health; but better parents' health might also allow them to gain higher income and to have children with better health.[7] According to this latter hypothesis, a policy of redistribution of income would not necessarily result in an improvement in the health of children in disadvantaged families.

In order to clarify the respective roles of income and parental health in child health, recent work carried out in the US and the UK considers gradient models that explicitly take into account the health of parents. The gradient remains significant, which indicates that the effect of income cannot be reduced to the intergenerational transmission of health.[8]

In France, is there a meaningful link between income and child health? Does the gradient remain significant when we take into account the intergenerational transmission of health? Is good health transmitted from one generation to another?

Data and method

We use data from the *Enquête sur la Santé et la Protection Sociale* from 1994 to 2008.[9] Among other things, our analysis focuses on general health (measured by a subjective health rating), digestive health (the individual has no digestive illnesses) and body weight (the individual has a normal body-mass index rating).

A number of statistical models allow us to analyse the respective importance of several factors in explaining the differences in child health in distinct socio-economic settings. First, the estimation of the family income/child health gradient takes into account family income and some socio-demographic control variables. Second, parents' health is introduced as an explanatory variable. These models let us quantify the role of the intergenerational transmission of health in the explanation of health differences among children, and to test the robustness of the results of the first step on the health gradient. That done, we estimate separately the link between parents' health and child health, and the link between household income and child health.

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Results

Results from the first stage of the calculation show the clear presence of a gradient. In France as in other countries higher family income is associated with better child health in the three measures used.

The second stage of the calculation reveals that parents' health has a significant effect on child health, an indicator of the intergenerational transmission of health, whether the measure used is for general health or the more specific measures of digestive health and body weight. We note that in relation to weight, only the health of the mother influences that of the children. Furthermore, taking into account the health of the parents alters the preceding estimation of the family income/child health gradient. The impact of household income on the general health of children loses its significance when we introduce the general health of the mother. The gradient is also weakened, though to a less marked degree, when the general health of the father is taken into account.

The analysis carried out using the specific health measures (digestive health and weight) shows, however, that the positive association between income and digestive health and weight in childhood remains significant even after the inclusion of controls for parents' health.

Conclusion

Social inequalities in health are apparent from the youngest ages in France, and this is despite universal access to health care. It is particularly true for digestive health and weight. Indeed, while the digestive health and weight of children is in part transmitted to them from their parents, it is also influenced by household income. This result indicates that diet quality may play a particular role. On the other hand, the intergenerational transmission of general health is so strong, especially in relation to maternal health, that family income no longer plays a role in child general health once we control for that effect.

Thus, a policy of income redistribution might have only a weak impact on child general health. However, public policies that improve the various components of parents' health may be more effective than expected, because their benefit is two-fold: there is a direct one for the health of parents and an indirect one for the health of their children.

[7] Propper C, Rigg J, Burgess S, 2007. Child health: Evidence on the roles of family income and maternal mental health from a UK birth cohort. Health Economics, 16(11):1245-1269.

[8] Voir Apouey et Geoffard (2013) et Case et al. (2002) cités plus haut.

[9] L'enquête est mise en œuvre par l'Irdes et la CNAMTS. L'échantillon est représentatif d'environ 97% de la population vivant en métropole.