



What lies behind the education gradient in health?

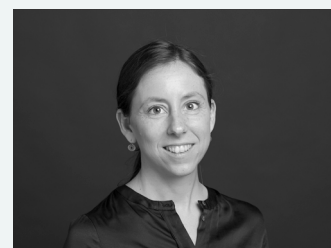
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There is extensive evidence that education is positively connected with health. Studies have shown that, on average, people with higher education tend to have better health. However, the reasons behind this relationship are not entirely clear. It can be that higher educated people have healthier life styles, exercise healthier jobs, and have more resources to take care of their health compared to those with lower education. On the other hand, it's also possible that people who start with poor health are unable to achieve higher levels of education.

Research on the impact of education on health has produced mixed results. Some studies show a positive effect, indicating that education does improve health (e.g. Silles, 2009; Brunello et al., 2016), while others do not find this relationship (e.g. Arendt, 2005; Clark and Royer, 2013). Additionally, the results may vary depending on factors such as the specific measure of health used, gender, or age group (Kemptner et al., 2011; Jürges et al., 2013).

To better understand the education-health connection, the research of Kyzyma and Pi Alperin (2021)¹ goes beyond simply comparing the average health levels of different education groups. Instead, it examines the differences in health outcomes across the entire health distribution for both lower and higher educated individuals. Thus, it is possible to know if there exists the same health gradient if we compare the healthiest higher and lower educated people as when we compare the sickest ones. Additionally, their research also investigates the underlying mechanisms contributing to these differences.

The analysis is based on data collected from multiple European countries and Israel, using information from waves 5 and 6 of the Survey of Health, Ageing, and Retirement in Europe (SHARE). Health status is measured using a synthetic indicator that takes into account various aspects of physical and mental health.



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¹ Kyzyma, I. and Pi Alperin, M.N. (2021). What lies behind the education gradient in health? New evidence from a distributional perspective. [SHARE Working Paper Series # 65-2021](#).

Education level is determined by the number of years of schooling reported by individuals. However, since it can be influenced by factors other than education itself, such as health or parental background, the study uses a technique called instrumental variable analysis. This approach leverages changes in compulsory schooling duration resulting from educational reforms implemented between 1949 and 1970 as a way to overcome the issue of endogeneity. The authors then split the population into two groups – those who have attained a lower level of education and those who have attained a higher level of education (completed studies beyond secondary school).

To explore how individual characteristics interact with education to shape the education gradient in health, the study considers additional variables related to demographics (age and gender), economic status (income and employment status), health behaviour (smoking and drinking habits, and physical activities), and childhood circumstances (financial difficulties as a child, education level of parents) of the respondents.

The education gradient along the health distribution

Figure 1 shows the difference between the health levels of the two education sub-groups (lower and higher educated), at each point of the distribution, with the healthiest at the bottom and the sickest at the top of it (axis 'X'). The health level of each group is then compared at each point of the distribution and plotted in axis 'Y'. The findings reveal that, overall, higher educated individuals have better health compared to their lower educated counterparts across the entire health distribution, except for the bottom 10% of the healthiest individuals. The absolute gap in health levels between the two education

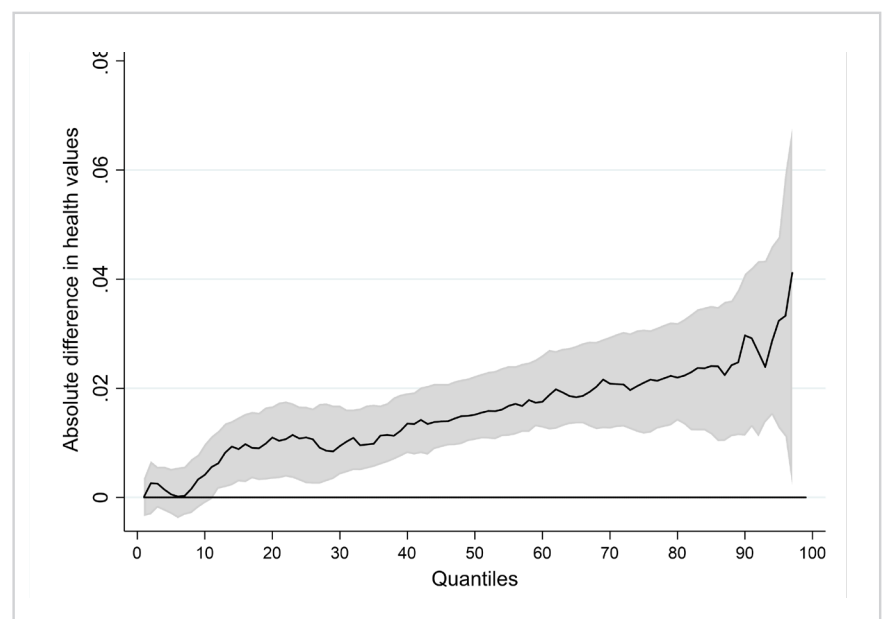
sub-groups varies depending on the position in the health distribution, being smaller when comparing the healthiest individuals and larger when comparing the sickest ones.

Decomposition of the education gradient in health

To understand the mechanisms contributing to the education-related differential in health between the lower and the higher educated, the authors analyse the compositional and the structural components of the health differential. In particular, a positive sign on the compositional component means that individual characteristics associated with poor health are more prevalent among the lower educated than among the higher educated, contributing to the health differential in favour of the higher educated. Similarly, a positive sign on the structural component means that health returns to individual characteristics are smaller for the lower educated than for higher educated, which increases the health gap between them.

Figure 1: Differences in the levels of health between the lower and higher educated

Note: 95% bootstrapped confidence intervals (derived from 500 bootstrapped replications).

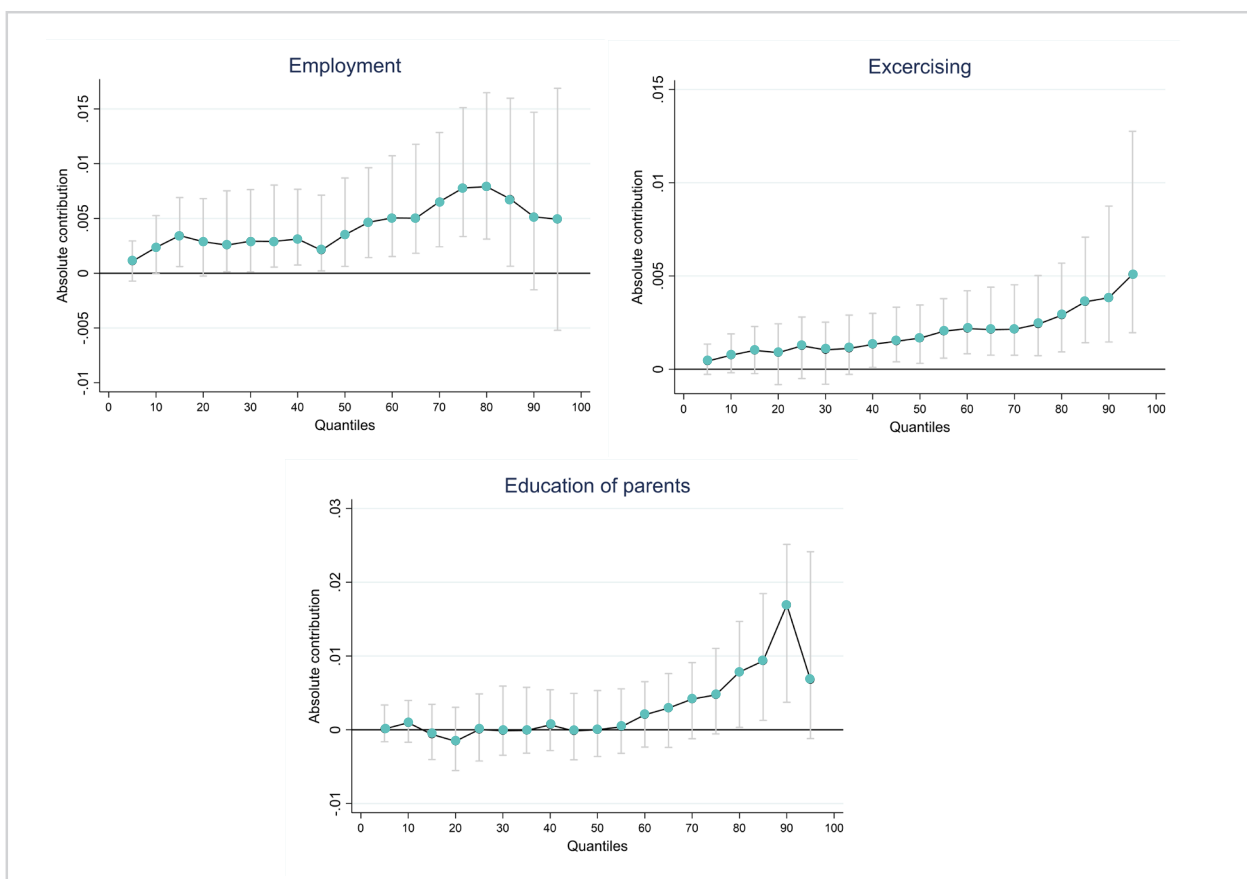


The analysis of the compositional component of the health differential reveals that only employment, exercising, and parental education are significant factors that contribute to explain the gradient in health (see *Figure 2*). The impact of employment patterns, for instance, explains part of the health gradient in the middle of the distribution, but this effect diminishes at the top. Higher educated individuals tend to have better jobs with favourable conditions, while deteriorating health can affect employment regardless of education level. The frequency of exercising also explain a substantial portion of the health gradient between lower and higher educated. Furthermore, the contribution of this factor increases along the distribution mirroring the increase in the gradient (in *Figure 1*). At the very top of the distribution, where the sickest individuals are located,

however, the most important factor explaining the sub-group differences in health is parental background.

Regarding the analysis of the structural component of the health differential, *Figure 3* shows that the educational-related gradient in the lower part of the health distribution where the healthiest are located, can be explained by the contributions of the sub-group differences in the returns to age and parental background. The contribution associated with age comes in line with the hypothesis, which emphasize that health disparities between education groups increase with age (Leopold, 2018). Educated people, for example, are more likely to follow a healthy diet, exercise, do regular health checks, etc. bringing benefits to health, which tend to accumulate over the life course. Moreover, the impact of education

Figure 2: Contributions of the differences in individual characteristics to the education-related gradient in health (compositional component)



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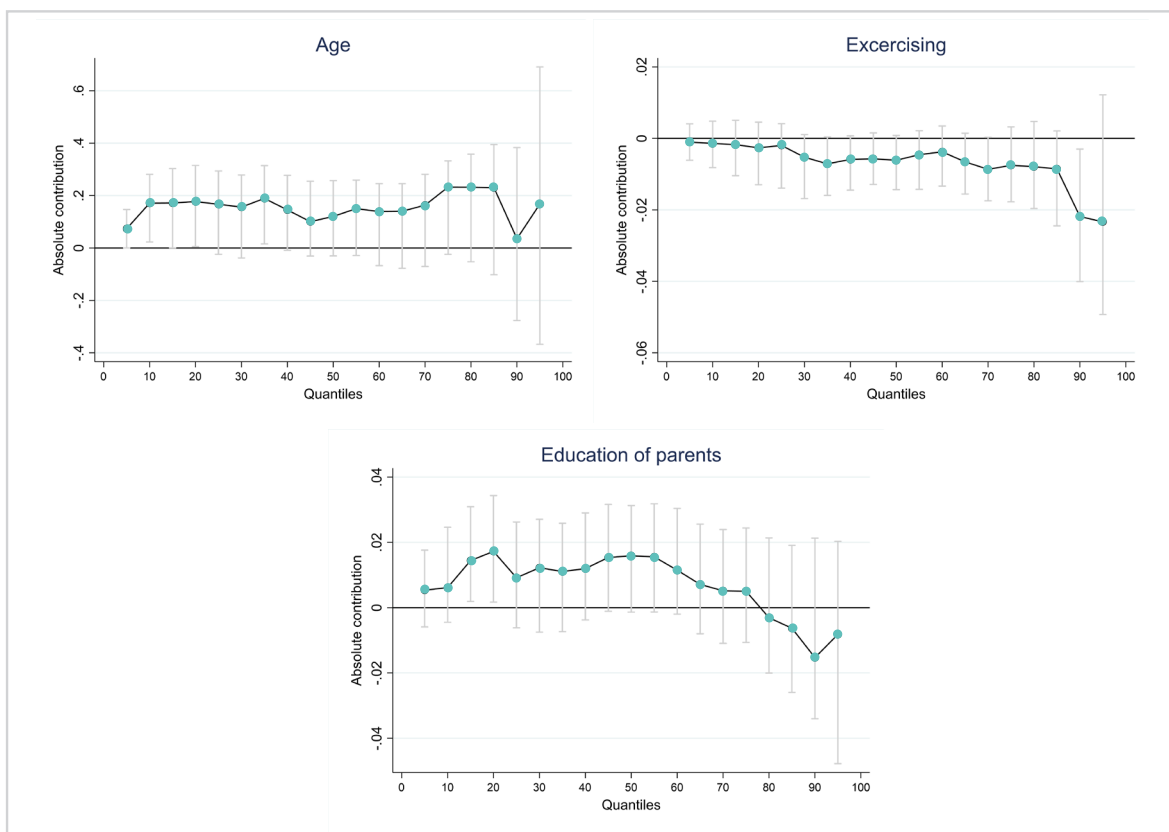
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on health is reinforced by parental education bringing additional health benefits to the group of higher educated individuals, who come from the families with higher educated parents. On the other hand, the benefits of exercise are more prominent for the lower educated in the sickest group, helping them to restrain further health deterioration.

Conclusion

From a policy perspective, increasing education levels can have a positive impact on health for the current generation (through, for example, exercising healthier behaviours) but also will help to narrow the education-related gradient in health in future generations. Additionally, promoting the importance of exercise and improving access to sports facilities for lower educated individuals, who often have limited resources, can also contribute to narrowing the health gap associated with education.

Figure 3: Contributions of the differences in returns to individual characteristics to the education-related gradient in health (structural component)



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Based on

Link to the original research [here](#).