How socio-economic circumstances in childhood can influence your midlife health

__Yajing Zhu__ presents the results of a life-course study, tracing 17,000 individuals from birth and over the course of 50 years. She identifies four socio-economic circumstances that affected them as children and how they continued influencing them as adults. The study shows that financial difficulty and material hardship have a persistent impact on poorer health in mid age.

How do early circumstances influence us later in life? Previous studies have found that socio-economic factors in early life can continue to have persistent impacts throughout one's life and, coupled with circumstances in adulthood, jointly contribute to later health. Understanding these influences can therefore be beneficial to policies aiming to reduce health inequalities. This is why studies using longitudinal data, and especially those sampling a specific cohort, are particularly useful in disentangling the relationship between early life and later health.

The 1958 British National Child Development Study (NCDS) makes available rich data, ideal for this line of study. The NCDS has followed over 17,000 individuals born in 1958 for 50 years, providing information across different domains (e.g. physical, social, and health) and at different stages in life. Yet socio-economic circumstances are difficult to measure in practice, because they are multi-dimensional and sometimes unobserved. So, how can we represent complex pathways by realistic statistical models?

Our research proposes a structural model that connects the socio-economic circumstances in childhood, partnership history in adulthood, and health in midlife (Figure 1). Around 50% of individuals in our British cohort (currently in their 60s) grew up in families with unfavourable conditions in at least one of the four dimensions of socio-economic circumstances that were identified in the early phases of the study.

Figure 1: Path diagram showing the effects of childhood socio-economic circumstances (SECs) on later health
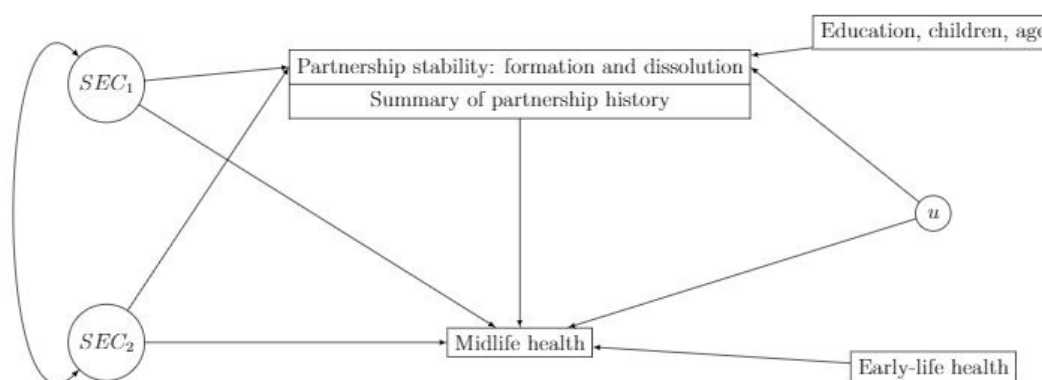

Having performed the analysis, we are able to formulate four sets of conclusions.

1. Do childhood socio-economic circumstances directly influence midlife health?

We find that the estimated effects of father's social class, financial difficulty, and material hardship in childhood on midlife health to be significant and similar in magnitude, before and after controlling for partnership experiences. This suggests the influence of these factors during one's childhood are long-lasting and persistent, and that those with unfavourable conditions in these aspects are significantly more likely to be in poor health at age 50 (Figure 2).

Figure 2: Predicted population-average probabilities of being in poor health state at age 50 for each level of childhood socio-economic circumstances
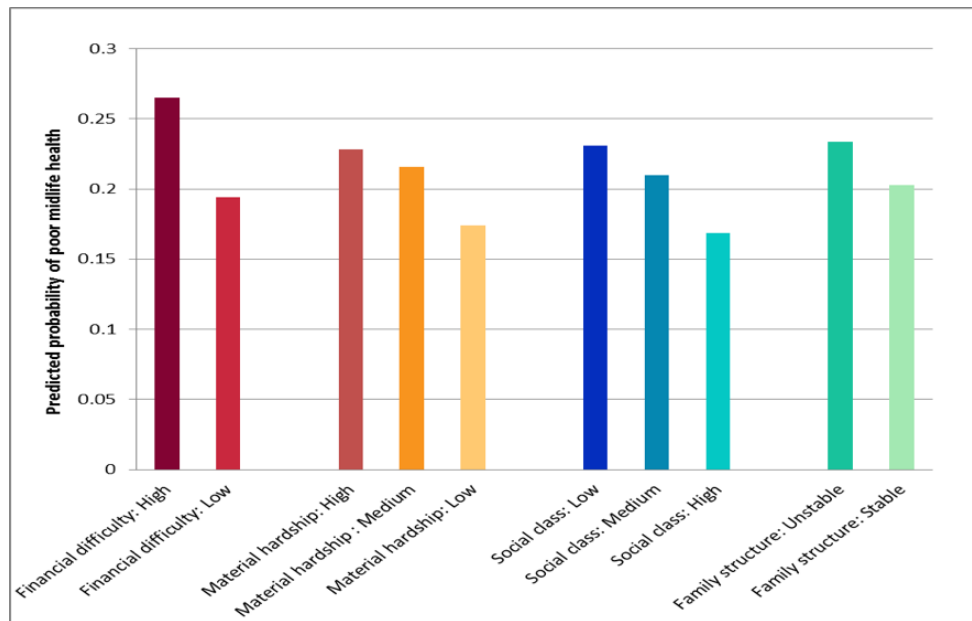
Note: Marginal probabilities are computed keeping all the other covariates fixed at their observed values for each individual. Individual-specific random effects are simulated from the estimated distribution.

2. Do partnership experiences influence midlife health?

We find that individuals who have formed their first partnership later in life tend to have a lower risk when it comes to developing health issues at age 50. Also, among those who have started the first partnership at the same time, cohort members who have spent longer time single before the age of 50 have a higher chance to be in poor health in midlife.

3. Are there any indirect effects of childhood socio-economic circumstances on midlife health?

The results suggest that an unstable family structure in childhood pushes up the likelihood of poor midlife health but the effect is not directly transmitted: rather, only through an indirect path via one's own partnership experiences. We find that unstable family structure significantly increases the likelihood of the early formation of first union and that of subsequent dissolutions.

Back to the health submodel, cohort members who formed the first partnership early are significantly more likely to be in poor health in midlife, and those with shorter partnership episodes, i.e. those who spent a higher percentage of time single, have a relatively higher risk to develop health issues at age 50. The evidence confirms the hypothesis that the influence of childhood socio-economic circumstances on midlife health is partially mediated by partnership experiences.

4. Do different partnership experiences share common influences not captured by observed characteristics?

Our analyses find that such shared influences do exist. Certain individuals who form their first relationship early tend to be less likely to suffer a relationship breakdown. In the future phases of the study, we will investigate the individual-specific characteristics relevant to this correlation – such as whether those with a mutual interest in being in a quality relationship tend to maintain the union, lowering the risk of separation.

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About the Author

Yajing Zhu is a PhD candidate at the Department of Statistics of the London School of Economics and Political Science. Her main research interests lie in social statistics: longitudinal data analysis, structural equation modelling with an application to public health and epidemiology, migration, education and social policy.

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