dial
Dynamics of Inequality Across the Lifecourse: structures and process

PremLife LIFETRACK
CRITEVENTS R
GUODLCCI EQUALLIVES
A GEIGHEI S
HuCIAW IMCHILD P
S
CILIA – LGBTQI+
E

Policy Brief No. 3
October 2021

Towards a healthier Europe:

What can policymakers learn from Dynamics of Inequality Across the Life-course (DIAL) research?

Key Findings

- Deep health inequalities which existed before Covid-19 have been rendered more severe by the crisis.
- Men suffer more than women from the negative health effects of unemployment.
- Protein intake plays a role in causing obesity, type 2 diabetes and heart disease. However, there is no evidence of negative health consequences associated with relative carbohydrate, sugar, or fat intake.
- Each additional daily cigarette smoked during pregnancy reduces birthweight by between 20 and 40 grams, regardless of the child's genetic predisposition.
- Improvements in infant mortality can be driven by better access to health care, the transmission of scientific knowledge and changes in health behaviour – particularly among disadvantaged groups.

Contributing Projects

CRITEVENTS
GEIGHEI
HUCIAW

Editors

Fran Abrams
Elina Kilpi-Jakonen

About DIAL

Dynamics of Inequality Across the Life-course (DIAL) is a multi-disciplinary research programme consisting of thirteen European projects. The projects examine the sources, structures and consequences of inequalities in contemporary societies. The programme is funded by NORFACE for the period 2017–2021.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 724363

NORFACE NETWORK

The policy background

In September 2020 the European Commission President, Ursula von der Leyen, announced a new 'European Health Union' (EHU) in her State of the Union[1] address. The accompanying EU4-Health[2] initiative aims to address concerns about structures, services, and approaches to health which have emerged as a result of the COVID-19 pandemic. It has 10 specific goals. In addition to better disease prevention, cross border-co-operation and preparedness for crises, they include:

- International health initiatives and cooperation
- Strengthening health data, digital tools and services, digital transformation of healthcare
- Improving access to healthcare
- Developing and implementing EU health legislation and evidence-based decision making
- Integrated work among national health systems

TheEU4Health initiative has paved the way for a European Health Union which is designed to strengthen cooperation and coordination between European Member States. This includes:

- Disease prevention and health promotion in an ageing population
- Digital transformation of health systems
- Access to health care for vulnerable groups.

In the longer term, investment in reducing health inequalities has been a significant strand of EU policy. Various initiatives have taken place over a period of more than a decade, but most recently a Joint Action on Health Inequalities under the EU Health Programme[3] has formed the basis for collaboration between EU countries. It is recognised that there are gaps in the political response to health issues in some parts of Europe: the Joint Action aims to provide a specific focus on both vulnerable groups and migrants.

In 2020 the European Parliament published Addressing Health Inequalities in the European Union[4], which provides detailed information on health inequalities across Europe as well as highlighting EU efforts to tackle them.

Covid-19

A study on Covid-19 and Inequalities, sets out data which shows that those from poorer backgrounds are most likely to catch Covid-19 and are most likely to die from it if infected.[5] They have also suffered more than other groups from social isolation during the pandemic.

Figure 1 shows that the same vulnerable groups are also more likely to suffer from other conditions which may go untreated and therefore store up problems for later.

The research shows that while deep inequalities in death rates existed before Covid-19, they became much more severe as a result of it: in the six weeks from the beginning of March 2020, age-adjusted death rates in the most deprived tenth of areas in the UK were more than double those in the least deprived tenth of areas.

The authors argue that the pandemic will have a lasting legacy in terms of health inequalities. The deep challenges posed by inequality before the crisis will remain or be magnified by it, and they should not be forgotten.

A second research article looks at the mental health effects of the pandemic, using data on almost 100,000 people from 54 countries.[6] The research, which took into account the level of restrictions in the different countries at each point in time, found that crisis-related levels of anxiety were higher among women than men, and were higher among those who were married or cohabiting than they were among the single or divorced. Pre-existing depression was also linked with higher anxiety, as was age.

The greater anxiety among women and those in couples could be due to their greater level of caring role, and the accompanying concern for family members. The research also found that levels of anxiety were connected with social attitudes and with economic circumstances. Those living in countries which were altruistic in their attitudes tended to be more anxious, whereas those in countries where patience was prized tended to be less so.

Education

We know that the better-educated tend to live longer, healthier lives. But does education *cause* this effect, or is it due to other underlying factors such as wealth?

DIAL research focusing on this question used data from randomised controlled trial, twin studies and 'natural experiments,' which attempt to replicate experimental conditions.[7]

The study finds only limited links: time spent in education is not connected with a lower likelihood of smoking, except for certain disadvantaged populations and for those whose peer group changes as a result of becoming more educated. Evidence of a link between education and lower levels of obesity is also weak, it says.

There are links between mortality and level of education, the research finds, but these seem only apparent when the quality of education is solid and the market returns to education are high.

Across all the areas the researchers looked at, the effects of education on health and health-related behaviours were stronger for men than for women.

The researchers conclude that a number of factors may be at play. Perhaps most importantly, the extra time spent at school may not actually correlate with the acquisition of extra levels of knowledge or skill. This is because many of the 'natural experiments' used came from countries which had raised the school leaving age. In these cases, effectively the benefits of staying an extra year in school are observed for individuals who would have left school in the absence of the reform. The health benefits of education for this group may well be very different compared to the health benefits for student who voluntarily decide to stay in school longer and intrinsically enjoy the learning experience.

Different kinds of studies – for instance those using administrative data – might give a more nuanced picture, they conclude, as might a comparison of different kinds of interventions.

Income inequality and mortality

DIAL research examined differences in mortality rates over time, both for infants and for older people in Norway.[8] It found that living in a poor area plays little part in the age at which people die nowadays. Poverty at an individual level could still be a factor in mortality though.

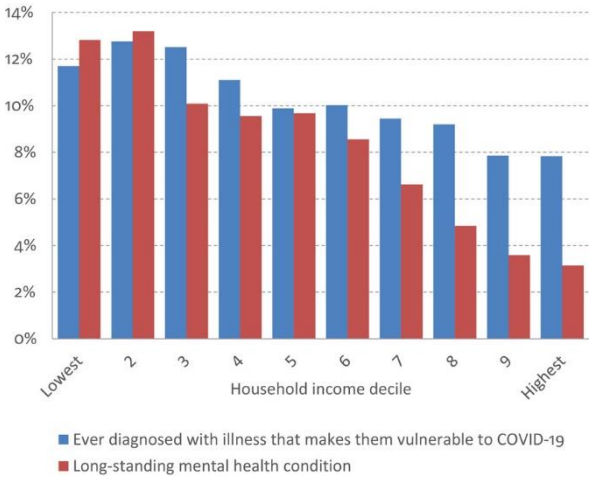

Figure 1. Medical vulnerability to COVID-19 or social isolation, by income in the UK.[5]

In addition, it found that at area level the income gap in mortality closed by the 1960s, but that it persisted for much longer on an individual level. The risk of dying within the first year of life only converged in 2010 for children born into the richest and poorest families.

The results suggest long-term declines in infant mortality, along with declines in the associated poverty gap, are strongly tied to advances in medical technology, the scientific discovery of the link between SIDS and sleeping positions, and the dangers of maternal smoking.

Improvements in infant mortality in Norway show how access to health care, the transmission of scientific knowledge and changes in health behaviour can affect children's lives – particularly among disadvantaged groups.

Employment

The DIAL research relating to health and employment also focuses on gender roles, in particular looking at the different effects of unemployment on men and women. A DIAL working paper[9] finds that on average women suffer less from unemployment than men and that this effect is more pronounced in countries with more traditional gender roles.

The research compared health data from Italy and Sweden and from East and West Germany, involving a total of more than 100,000 people. It found that in all cases women suffered less from health problems after unemployment, and that the

effect was stronger in East Germany and in Italy, where more traditional gender attitudes prevailed.

A comparison was also made on the health effects of unemployment between younger and older people in West Germany. Among those born before 1960, unemployment increased the risk of ill health by 8.4 percentage points for men and 5.2 for women. Among those born after 1960, men's risk increased by 5.8 percentage points and women's by 3.6.

The researchers conclude that more equal social roles could help to reduce the negative health effects of unemployment for both genders. Social and labour policies targeting men and fathers should facilitate greater involvement in family life, while those aimed at women should focus on greater integration into the labour market.

Health-related behaviours

A major strand of DIAL research focuses on genetic influences relating to inequality, and this has produced research focusing on links between genes and a range of health-related issues.

One study expands on earlier research which shows that the diet we eat is influenced by our genes, and that this genetic link can drive certain health conditions such as obesity and diabetes.[10]

The research used Genome-Wide Association Studies (GWAS), in this case one where the DNA of more than 235,000 individuals of European origin was scanned for markers indicating a propensity to certain conditions.

It found a consistent pattern of genetic associations between poor health and protein intake. This might be caused by high protein intake playing a role in metabolic dysfunction, the researchers believe, but the reverse might also be the case. The research also showed diet composition was related to physical activity and alcohol intake as well as to educational attainment and neighbourhood deprivation.

It concludes that there are strong associations between protein intake and body mass index, while there are no corresponding effects for intake of sugar, fat or carbohydrate.

A second study makes similar links for the interplay between maternal smoking and genes in offspring birth weight.[11]

The research found that each additional daily cigarette smoked during pregnancy reduces birthweight by between 20 and 40 grams, regardless of the child's genetic predisposition.

Using information from a sample of 5000 mother-baby pairs, the researchers were able to compare smoking information with data on the women's genetic propensity for smoking to affect their child's weight.

The research confirmed that both genes and maternal smoking could significantly affect birth weight. But they found no evidence that the child's genetic inheritance could cushion the damage from smoking: this suggests both nature and nurture affect birth weight, but in this case there are no meaningful interactions between the two.

References

1 European Commission, 2020, State of the Union Address by President von der Leyen.
2 European Commission, 2021, EU4Health 2021–27: A Vision for a Healthier European Union.
3 Joint Action Health Equity Europe. 2021.
4 Scholz, N, 2020, Addressing Health Inequalities in the European Union: Concepts, action, state of play. European Parliamentary Research Service.
5 Blundell, R, Costa Dias, M, Joyce, R, and Xu X, 2020, COVID-19 and Inequalities, *Fiscal Studies*, 41, 291–319.
6 Buyukkececi, Z, 2021, Cross-country differences in anxiety and behavioral response to the Covid-19 pandemic, *European Societies*, 23, S417–S447.
7 Galama, TJ, Lleras-Muney, A, and van Kippersluis, H, 2018, The effect of education on health and mortality: A review of experimental and quasi-experimental evidence, *Oxford Research Encyclopedia of Economics and Finance*.
8 Butikofer, A, Karadakic, R, and Salvanes, KG, 2021, Income Inequality and Mortality: A Norwegian Perspectice, *Journal of Applied Public Economics*, 42, 193–221.
9 Tattarini, G, and Grotti, R, 2020, Gender roles and selection mechanisms across contexts: A comparative analysis of the relationship between unemployment, self-perceived health, and gender. *DIAL Working Papers 20/2020*.
10 Meddens, SFW, de Vlaming, R, Bowers, P, et al., 2021, Genomic analysis of diet composition finds novel loci and associations with health and lifestyle, *Molecular Psychiatry*, 26, 2056–2069.
11 Dias Pereira, R, Rietveld, CA, & van Kippersluis, H, The Interplay between Maternal Smoking and Genes in Offspring Birth Weight. *DIAL Working Papers 18/2020*.