

THE EU'S COSTS OF SOCIOECONOMIC "HEALTH GAPS"

Unița Lucian

University of Oradea, Faculty of Medicine and Pharmacy, Address: Oradea, str. Ady Endre nr. 30, ap. 2,
E-mail: lunita@uoradea.ro, Telephone: +40-723-336432

Abstract: During the past two decades, socioeconomic inequalities in health have increasingly been recognized as an important public health issue throughout Europe. As a result, there has been a considerable research effort which has permitted the emphasis of academic research to gradually shift from description to explanation. And as a consequence of that, entry-points for interventions and policies have been identified, providing the building-blocks with which policy-makers and practitioners have begun to design strategies to reduce socioeconomic inequalities in health. Although relatively little is known yet about the effectiveness of these strategies, it is possible to make some educated guesses about their potential impact on the economic implications of health inequalities in the European Union. And this way, investing in health should not only be seen as a cost to society, but also as a potential driver of economic growth.

Key words: economic benefits, improvements in EU population health, inequities, health gap

1. Introductory Considerations

In recent years there has been growing attention to the potential economic benefits of improvements in population health. This is far from new: historically, one of the origins of the public health movement lies in the awareness that the prosperity of nations is partly dependent on the health of their populations. But this awareness has recently received a new stimulus from the publication in 2001 of the report of the WHO Commission on Macroeconomics and Health, which demonstrated that health improvement can be seen as a key strategy for income growth and poverty reduction in low- and middle-income countries (Commission 2001). This report was followed in 2005 by an overview of evidence concerning the impact of health on the economy in high-income countries, particularly the European Union (Suhreke et al., 2005). The latter report concluded that there are strong economic arguments for investing in health - if Europe were to become more competitive globally, greater investments in human capital are necessary. Both reports suggest that investing in health should not only be seen as a cost to society, but also as a potential driver of economic growth.

Most analyses of the relationship between health and the economy focus on average health, but health is actually very unevenly distributed across society. In all countries with available data, significant differences in health exist between socioeconomic groups, in the sense that people with lower levels of education, occupation and/or income tend to have systematically higher morbidity and mortality rates. Socioeconomic inequalities in health usually present themselves as a gradient, characterized by a gradual but systematic increase of the rates of morbidity and mortality as one moves down the social ladder.

This gradient may be partly due to health-related social mobility (which increases the likelihood of people with health problems to move downwards in the social hierarchy and of people with excellent health to move upwards). But longitudinal studies, in which socioeconomic position is measured first and health outcomes are assessed later, show that this gradient is largely due to unequal exposures of people at different positions in the social hierarchy to a variety of health risks. Many health risk factors, including unfavourable living and working conditions, psychosocial factors, and health behaviours, are more frequent in lower socioeconomic groups, and have been shown to contribute in multivariate analyses to the explanation of health inequalities (Mackenbach, 2006). This strongly suggests that socioeconomic inequalities in health can be reduced by improving the life situations of people with lower levels of education, occupation or income. Reducing these health inequalities are one of the main challenges for public health, and there is a great potential for improving average population health by eliminating or reducing the health disadvantage of lower socioeconomic groups (Mackenbach, 2006). This requires an active engagement of many policy sectors, not only of the public health and health care systems, but also of many other policy areas, including education, social security, working life, city planning, etc.

A fruitful dialogue between the public health and health care sector on the one hand, and other policy areas on the other hand, is likely to be facilitated if the economic benefits of reducing health inequalities can be made clear. If a case can be made for a positive economic spin-off of improvements in average health, it is a logical question whether perhaps the same applies to reducing socioeconomic inequalities in health: What would be the economic impact of improving the health of groups with a lower socioeconomic status to that of more advantaged sections of the population? That's why this paper aims to give one answer to this question for the European Union, by approaching the economic costs of socioeconomic inequalities in health in the European Union.

2. The impact of health on economic outcomes

In order to derive estimates of the impact of ill-health on labour supply and labour productivity in the European Union, particularly in lower socioeconomic groups, we have conducted regression analyses using data from the 5th wave (1997) of the European Community Household Panel (ECHP) and the study published by the Health & Consumer Protection DG (Mackenbach et al, 2007)

This study and data were used to observe whether the impact of self-assessed health on earnings (and the separate components of labour market participation, number of hours worked, and hourly income) differed according to people's initial socio-economic position, as measured by their educational level. To the extent that people's earnings represent their economic output, the study has taken also into account the fact that people from lower socioeconomic groups, where inequalities-related losses to health are concentrated, generally have lower earnings than people in higher socioeconomic groups. Education was used as the key indicator of socioeconomic position. The advantage of this socioeconomic indicator was established as early in life and stable over time. Educational level may therefore have potentially large effects on health (and through health on economic variables) while reverse effects (of health on education) are likely to be small.

There were observed large differences in the level of personal earnings according to the general health of people. Persons with "very good" or "good" health had about 4 times higher earnings than those with "poor" and "very poor" health (unadjusted for confounders). The relative impact of health on personal income was larger for lower educated persons. In absolute terms, health had a greater impact on personal income among the higher educated, because of the higher overall levels of personal income of higher educated compared to lower educated (*Figure 1*).

Current and past health had an independent effect on personal income and its underlying components, but the effect of current health is largest. The use of more objective measures of health (compared to self-reported general health) increased the impact of health on personal income and labour participation, as expected. The effect of health on personal income is about equally large for men and women, and is much larger for persons 55-64 years than for younger age groups, especially as compared to persons younger than 45 years.

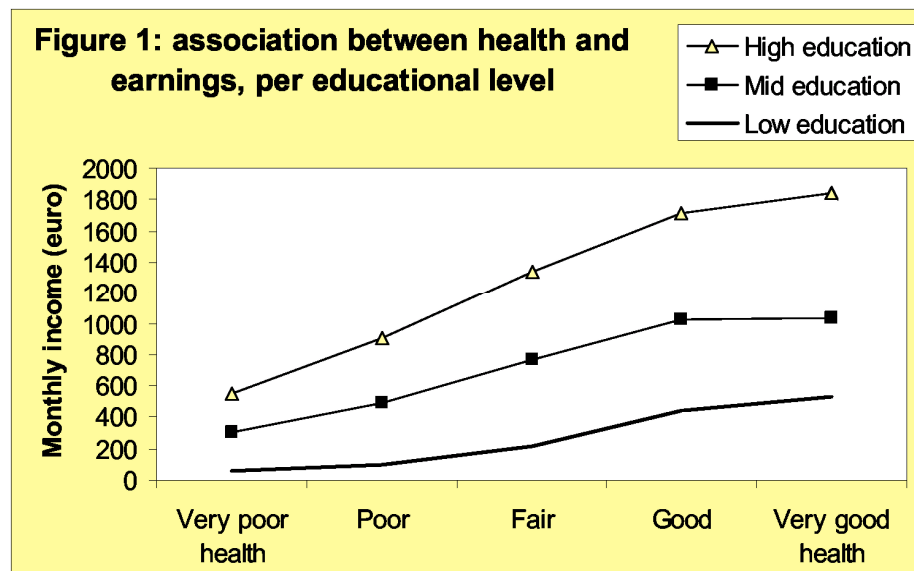


Figure 1

In the refereed analysis (Mackenbach et al, 2007), the main cause of lower earnings among those with poor health was their lower labour force participation. People with "very poor" health were about 2 times less likely to participate in the labour force than those with "very good" health. To a lesser extent the number of hours worked among economically active persons and hourly wages contributed to differences in income between persons with good and poor health. The effects of health on labour force participation, number of hours worked and hourly wages were generally larger (in relative terms) among persons with lower educational level. Some of these effects also differed according to age group, sex or country.

It was this way difficult to be certain about the exact size of the causal effect of ill-health on earnings. On the one hand, part of the observed 'effect' of ill-health on personal income may actually due to a reverse effect of income (or other aspects of socioeconomic position) on health, which was not removed by our longitudinal analysis design. On the other hand, there are also reasons to suspect that we may have underestimated the true effect of ill-health on earnings. Past health (up to 4 years back) was found to have an independent impact on current personal income, but we were not able to take into account the role of health in the further past. Health was also measured imperfectly and incompletely, e.g. we largely ignored mental health problems. Finally, possible spill-over effects of health on the earnings of the partner were ignored in the analysis.

3. Inequalities-related losses to health as a “capital” and as a “consumption good”

Our conceptual framework is based on the notion that health is both a 'consumption good' and a 'capital good'. As a 'consumption good', health directly contributes to an individual's 'happiness' or 'satisfaction', and as a 'capital good', health is an important component of the value of human beings as means of production. Our analysis has tried to attach a monetary value to the inequalities-related losses to population health in the European Union by combining these two complementary perspectives. Inequalities-related losses to population health were determined by calculating the frequency of ill-health in the population which is attributable to the fact that not everybody has a high level of education, a higher occupational class, or a high income level. 'High' socioeconomic positions was arbitrarily be defined as the upper 50% of the population. On the basis of currently observed patterns of mortality by educational level, the number of deaths that can be attributed to health inequalities in the European Union (EU-25) as a whole is estimated to be 707 thousand per year (all figures apply to 2004). The number of life years lost due to these deaths is about 11.4 million. Similarly, the number of prevalent cases of ill-health that can be attributed to health inequalities is estimated to be more than 33 million. The estimated impact of health inequalities on average life expectancy at birth in the EU-25 for men and women together is 1.84 years, and the estimated impact of health inequalities on average life expectancy in good health is 5.14 years. As *Table 1* shows the

number of inequalities-related cases of "very poor" or "poor" health amounted to more than 33 million persons in the EU25 member states in 2004. Similarly, 707 thousand deaths in the EU25 in 2004 could be attributed to health inequalities.

Table 2 shows the economic costs corresponding to these numbers of people. If people in lower educational groups were to have the same level of health as people in higher groups, and if their personal income were to increase correspondingly (taking into account the association between health and income among low educated people), the average personal income in the European Union would increase by 2.77%. Because the personal income definition used in these calculations corresponds with the wages and earnings component (excluding employers' social contributions) in GDP National Accounts, we can now calculate the impact of inequalities-related health losses on GDP. The share of this wages and earnings component in total GDP vis 39%, and the 2.77% impact on personal incomes can thus be translated into a 1.08% increase in GDP, or €113 billion for the 25 EU member states taken together in 2004.

	Total EU-25 population: observed rates and numbers (1)	Total EU-25: estimates assuming rates of higher educated (2)	Impact of health inequalities (1) – (2)
Death rate	0.01009	0.00855	0.00154
Absolute number of deaths (* 1000)	4,633	3,926	707
Total years of life lost (* 1000)	n.a.	n.a.	11,364
Prevalence rate of "fair/poor" health	0.397	0.324	0.073
Absolute number of cases (* 1000)	182,212	148,745	33,468
- in "fair" health	126,857	45,188	10,167
- in "poor" health	55,356	103,556	23,300
Life expectancy at birth	78.65	80.49	-1.84
Expectancy of life in poor health	31.22	26.09	5.14

Table 1: Aggregates of the population health impact of educational differences in mortality and morbidity in the EU25 in 2004 (source: Health & Consumer Protection DG, 2007)

The total GDP impact is likely to be larger because part of the added value of employees is included in firm profits, and because we did not include the economic impact of health among the self-employed. If assumed that the effect of health inequalities on the category of firm profits and mixed incomes, is 0.69%, which is equal to one quarter of the 2.77% effect on wages and salaries. The share of this mixed income component in total GDP is 38%, and the impact on total GDP will therefore be around €28 billion or 0.27% for the EU-25 member states in 2004. As a result, the combined effect of health inequalities on total amounts to €141 billion or 1.35% of GDP. In view of the annual growth rates of GDP (in the order of 2 to 4%), this seems a modest effect, at least in relative terms. It is important to note, however, that this estimate excludes several mechanisms which link ill-health to human capital. In addition, by accepting the market price of the labour supplied by people with a lower socioeconomic status it is possible to have underestimated their contribution to the total economic output.

But GDP is an imperfect measure of welfare. It does not capture a number of welfare components, such as the value of non-market goods including health. Although there is no consensus on the monetary value of health, we will use adopted versions of Nordhaus' estimates for illustrative purposes. The results are presented in Table 2.

Total value		
	In billion euro	As % of GDP
GDP of EU-25, 2004	10,451	100.0%
<i>Health as a capital good:</i>		
<i>GDP income componenta</i>		
- wages and salaries	4,071	39.0%
- firm profits, mixed income etc	4,021	38.5%
- total income	8,092	77.4%
<i>Health as a consumption good</i>		
- mortality	n. a.	n. a.
- morbidity (40% of mortality)	n. a.	n. a.
- total health	n. a.	n. a.
<i>Health care costs</i>		
- physician services	157	1.5%
- hospital services	267	2.6%
- total health services	888	8.5%
<i>Social security benefits</i>		
- unemployment benefits	178	1.7%
- disability benefits	222	2.1%
- total benefits	401	3.8%

Tabel 2: Economic impact of socioeconomic inequalities in health, EU-25 member states, 2004

4. Social security benefits and health care expenses

Our analysis of the ECHP panel data confirms that poorer health is strongly associated with receipt of disability benefits. People with "very poor" health on average receive about 20 times more disability benefits than those with "very good" health. Among lower educated groups, the effect of health on disability benefits is slightly smaller in relative terms. Similar patterns were observed among both men and women, and in all European countries included in this study. The association between poorer health and receipt of unemployment benefits was much weaker and less consistent, however. In general, those with poor health received more unemployment benefits, although this association is weak among low educated people. When comparing countries, it was found that poorer health was related with more employment benefits in Northern European countries, while the opposite association was observed in France and most Southern European countries. Because of the possibility of various forms of bias, including 'justification bias', these international variations should be interpreted with caution.

If all persons would have the health corresponding to those high educational levels, this would clearly lead to fewer applications for unemployment and disability benefits. On the basis of ECHP data, we estimate that unemployment benefits would decrease by 3% on average in the European Union as a whole, representing about €5 billion annually in social security costs. Disability benefits would decrease by 25% representing €55 billion annually (*Table 2*). The total of €60 billion corresponds to 15% of the total costs of social security systems. The analysis of ECHP data also confirmed that poor health was consistently related to GP visits, specialist visits and hospitalization rates. People with "very poor" health had more than 6 times more GP visits and more than 9 times more specialist visits than those with "very good" health.

Virtually identical associations were observed within both higher and lower educated groups. If all persons would have the health corresponding to those high educational levels, this would also decrease the number of GP visits and specialist visits by 16%, and the number of nights in hospital by 22%, in all persons aged 16 years and older. Assuming that the impact of health on health care utilization is similar in children up to 15 years, we estimated the impact of health inequalities on health care costs as €26 billion for physician services, and €59 billion for hospital services. According to OECD data, physician visits and hospitalizations represent almost half of total health care costs (see data base at OECD website). Analyses of utilization of other health services (e.g. physical therapy, home care, mental health services) in the Netherlands demonstrated that an identical or even stronger association exists with poor general health and with low education (Kunst et al., 2007). If the empirical results for physician visits and hospitalizations were to apply to total health care, the total impact of health inequalities on health care costs would represent €177 billion euro, or around 20% of total health care costs in the EU25.

5. Conclusion

Our estimates suggest that the economic impact of socioeconomic inequalities in health is likely to be substantial. While the estimates of inequalities-related losses to health as a 'capital good' (leading to less labour productivity) seem to be modest in relative terms (1.4% of GDP), they are large in absolute terms (€141 billion). It is valuing health as a 'consumption good' which makes clear that the economic impact of socioeconomic inequalities in health is really huge: in the order of about €1,000 billion, or 9.5% of GDP). The separately calculated impacts on costs of social security and health care systems and health care support these conclusions. Inequalities-related losses to health account for 15% of the costs of social security systems, and for 20% of the costs of health care systems in the European Union as a whole. It is important to emphasize that all these estimates represent yearly values, and that as long as health inequalities persist, these losses will continue to accumulate over the years. What can be done to narrow the health gap? Several policy options are available:

- **Reducing economic and social inequalities:** Poverty and poor health can turn into a true vicious cycle from birth to death. Children born into disadvantaged families tend to have a lower birth weight due to harmful influences during pregnancy and are more likely to incur accidents. Underprivileged people are also at higher risk of chronic stress and repeatedly disappointed professional and private expectations not only cause long-term disease, but can also push people towards substance abuse.
- **Redistributive tax policy:** Research indicates that even a minor shift in wealth could prevent numerous premature deaths. The reintroduction of a redistributive tax policy could therefore play a role in preventing premature death. Nevertheless, reality shows that redistribution of income in Europe is currently moving in the opposite direction, as relative poverty continues to rise with incomes of top executives rising sharply.
- **Social transfer payments:** Countries that are most successful at reducing inequality and poverty are those that spend the largest amounts on social transfer payments, such as rent rebates and child allowances, and other than pensions, as they help reduce poverty.
- **Reform of the Common Agricultural Policy:** According to the WHO, 14% of all deaths in the European region are caused by a poor or unhealthy diet (called "food inequity").
- **Reducing homelessness and housing improvements:** A study by researchers at the London School of Hygiene and Tropical Medicine shows that the lives of several hundred people in the UK each year could probably be saved by improvements in the insulation and heating of their homes.
- **Supporting health promotion activities:** Health promotion is "the process of enabling people to exert control over the determinants of health and thereby improve their health." Traditional approaches to health promotion, such as providing health information, fail to reduce health inequalities effectively because they tend to benefit the wealthy more than the poor.
- **Integrating health determinants into other policy areas:** The health sector in itself can only achieve limited results in reducing health inequalities. However, by integrating health

determinants into fiscal, education, agriculture and housing policy, a great deal could be done to narrow the "health gap".

References

1. Mackenbach JP. (2006), Health inequalities: Europe in profile. London: Department of Health
2. Mackenbach JP, Bakker MJ, Sihto M, Diderichsen F. (2002), Strategies to reduce socioeconomic inequalities in health. In: Mackenbach JP, Bakker MJ, editors. Reducing inequalities in health. A European perspective. London: Routledge, 2002: 25-50.
3. Kunst AE, Meerding WJ, Polder JJ, Mackenbach JP. Social inequalities in utilization and costs of health care in the Netherlands [In Dutch]. Bilthoven, Netherlands: RIVM/Erasmus MC/CBS, 2007.
4. Mackenbach JP, Meerding W.J., Kunst A. (2007), Economic implications of socio-economic inequalities in health in the European Union, European Commission, Health & Consumer Protection DG
5. Suhrcke M, McKee M, Sauto Arce R, Tsovala S, Mortensen J. (2005), The contribution of health to the economy in the European Union. EC
6. Suhrcke M, McKee M, Sauto Arce R, Tsovala S, Mortensen J. (2005), The contribution of health to the economy in the European Union. EC
7. World Health Organisation ROE. Health 21: the health for all policy for the WHO European Region: 21 targets for the 21st century. Copenhagen: WHO Regional Office for Europe, 1998.