



Determinants of the magnitude of socioeconomic inequalities in mortality: A study of 17 European countries



Johan P. Mackenbach^{a,*}, Matthias Bopp^b, Patrick Deboosere^c, Katalin Kovacs^d, Mall Leinsalu^{e,f}, Pekka Martikainen^g, Gwenn Menvielle^h, Enrique Regidorⁱ, Rianne de Gelder^a

^a Department of Public Health, Erasmus MC, University Medical Center Rotterdam, P.O. Box 2040, 3000 CA Rotterdam, Netherlands

^b Epidemiology, Biostatistics and Prevention Institute, University of Zürich, Zürich, Switzerland

^c Department of Sociology, Vrije Universiteit Brussel, Brussels, Belgium

^d Demographic Research Institute of the Central Statistical Office, Budapest, Hungary

^e Department of Epidemiology and Biostatistics, National Institute for Health Development, Tallinn, Estonia

^f Stockholm Centre for Health and Social Change, Södertörn University, Huddinge, Sweden

^g Department of Sociology, University of Helsinki, Helsinki, Finland

^h Institut Pierre Louis d'Epidémiologie et de Santé Publique (IPLESP UMRS 1136), Sorbonne Universités, UPMC Univ Paris 06, INSERM, Paris, France

ⁱ Department of Preventive Medicine and Public Health, Universidad Complutense de Madrid, Madrid, Spain

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ABSTRACT

The magnitude of socioeconomic inequalities in mortality differs importantly between countries, but these variations have not been satisfactorily explained. We explored the role of behavioral and structural determinants of these variations, by using a dataset covering 17 European countries in the period 1970–2010, and by conducting multilevel multivariate regression analyses. Our results suggest that between-country variations in inequalities in current mortality can partly be understood from variations in inequalities in smoking, excessive alcohol consumption, and poverty. Also, countries with higher national income, higher quality of government, higher social transfers, higher health care expenditure and more self-expression values have smaller inequalities in mortality. Finally, trends in behavioral risk factors, particularly smoking and excessive alcohol consumption, appear to partly explain variations in inequalities in mortality trends. This study shows that analyses of variations in health inequalities between countries can help to identify entry-points for policy.

1. Introduction

Inequalities in mortality and morbidity between people with a higher and lower socioeconomic position, as indicated by educational level, occupational class, or income level, are a persistent challenge for health policy. These inequalities are present within all European countries with available data, as shown in a series of comparative studies funded by the European Commission (Mackenbach et al., 2008). These comparative studies offer a rare ‘macroscopic’ view of health inequalities which has challenged conventional ideas. For example, the finding that health inequalities within countries are not smaller in European countries with more egalitarian social policies, such as the Nordic countries, suggests that health inequalities are not primarily determined by inequalities in material living conditions (Mackenbach et al., 1997; Dahl et al., 2006).

Most of these studies have focused on inequalities in mortality by

level of education. Fig. 1a illustrates the remarkable differences between countries: relative inequalities in mortality are largest in the East (Czech Republic, Lithuania, Hungary, Estonia, and Slovenia), and smallest in the South (Spain and Italy).

This geographical pattern also applies to absolute inequalities in mortality (Web Appendix Fig. A1), because the mortality rates of the higher educated are rather similar between countries, whereas the mortality rates of the lower educated are much higher in some countries than in others (Lundberg et al.; van Raalte et al., 2011).

Another remarkable feature of this geographical pattern is that it is a recent phenomenon. Relative inequalities in mortality have widened considerably in many countries during the last decades, particularly among men, mainly because mortality has declined more strongly among the high than among the low educated (Mackenbach et al., 2015a; de Gelder et al., 2017; Mackenbach et al., 2016). Fig. 1b illustrates that the current geographical pattern of inequalities in

* Corresponding author.

E-mail address: j.mackenbach@erasmusmc.nl (J.P. Mackenbach).

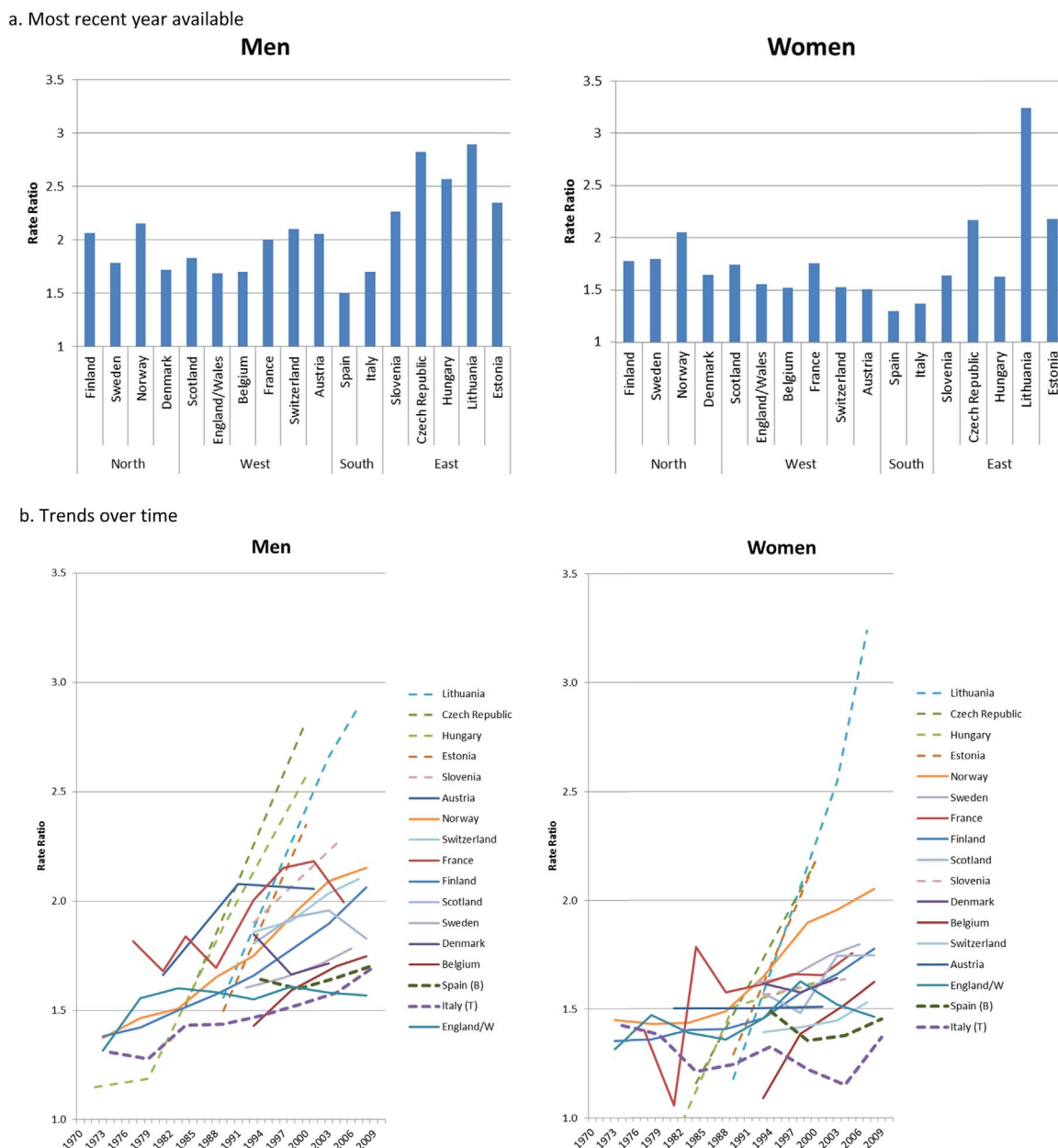


Fig. 1. Relative inequalities in mortality by education. (a) Note: Rate Ratio (RR) of age-standardized mortality among ‘low’ as compared to ‘high’ educated (reference category). Most recent year available: most recent of periods covered as given in Web Appendix Table A1. (b) Note: Rate Ratio (RR) of age-standardized mortality among ‘low’ as compared to ‘high’ educated (reference category). Broken lines for countries in Eastern and Southern Europe.

mortality is the result of a strong divergence between countries starting in the 1980s. Both among men and women, variation between countries was small in the 1980s, but since then inequalities in mortality have risen much more in some countries than in others, and as a result relative inequalities in mortality are now very large in Eastern Europe, and have remained small in Southern Europe (de Gelder et al., 2017).

The explanation of these between-country patterns is largely unknown. Although there have been many social-epidemiological studies of the contribution of specific determinants to inequalities in mortality at the individual level, between-country variations in the magnitude of health inequalities at the aggregate level have only rarely been studied. Detailed descriptions of between-country variations have been published for ischemic heart disease (Avendano et al., 2006), stroke (Avendano et al., 2004, 2005), lung cancer (Mackenbach et al., 2004; Van der Heyden et al., 2009), breast cancer (Strand et al., 2007), diabetes (Vandenheede et al., 2015; Espelt et al., 2008), tuberculosis

(Alvarez et al., 2011; Nagavci et al., 2016), road traffic accidents (Borrell et al., 2005), suicide (Lorant et al., 2005a, 2005b) and homicide (Stickley et al., 2012), but in none of these studies an attempt has been made to relate variations in inequalities of cause-specific mortality to variations in inequalities in determinants of mortality.

Some recent studies by our group have analyzed the impact of inequalities in behavioral risk factors (Eikemo et al., 2014), particularly smoking (Kulhanova et al., 2014a; Cavelaars et al., 2000; Huisman et al., 2005; Kulik et al., 2014; Kulik et al., 2013; Gregoraci et al., 2017), excessive alcohol consumption (Mackenbach et al., 2015b), and obesity (Roskam et al., 2010; Hoffmann, 2015; Hoffmann et al., 2015), but did not directly address why inequalities in mortality are larger in some European countries than in others. Previous studies of between-country variations in the magnitude of inequalities in mortality have also largely ignored the possible role of structural determinants of health inequalities, such as poverty and other economic conditions and social and health care policies. The study reported in this paper

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