Economics and Human Biology 13 (2014) 66–75

Contents lists available at SciVerse ScienceDirect

Economics and Human Biology

journal homepage: http://www.elsevier.com/locate/ehb

Income inequalities in unhealthy life styles in England and Spain

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ARTICLE INFO

Article history:
Received 14 May 2012
Received in revised form 22 March 2013
Accepted 22 March 2013
Available online 8 April 2013

Keywords:
Inequalities in unhealthy lifestyles
Obesity
Alcohol consumption
Smoking
Reporting bias

ABSTRACT

Health inequalities in developed societies are persistent. Arguably, the rising inequalities in unhealthy lifestyles might underpin these inequality patterns, yet supportive empirical evidence is scarce. We examine the patterns of inequality in unhealthy lifestyles in England and Spain, two countries that exhibit rising obesity levels with a high prevalence of smoking and alcohol use. This study is unique in that it draws from health survey data spanning over a period in which major contextual and policy changes have taken place. We document persistent income-related inequalities in obesity and smoking; both unhealthy lifestyles appear to be disproportionately concentrated among the relatively poor in recent decades. In contrast, alcohol use appears to be concentrated among richer individuals in both periods and countries examined.

1. Introduction

The mechanisms underpinning the pattern of socio-economic inequalities in health over the last two decades are still a black box for social and economic scientists. Mainstream explanations point towards either a direct impact of income inequality on health inequalities (Marmot et al., 1978), or indirectly through mental health pathways (e.g. depression, anxiety, work stress) (Wilkinson, 1997).[1] Alternatively, one could consider behavioural explanations. That is, it is possible to hypothesise that if life course events such as the adoption of poor dietary habits, early smoking or binge drinking are concentrated among the less affluent, then health inequalities might well persist despite efforts to improve access to health care. Findings pointing out that education is the main underpinning determinant of income inequalities in health status are consistent with such explanations (Cutler et al., 2008; Brunello et al., 2011). To date, the potential influence of unequal unhealthy lifestyles in explaining the persistence of health inequalities over time has received little attention despite its obvious policy implications.[2] More specifically, whether or not a health behaviour income gradient exists is an empirical question that has only partially been addressed in the literature by a few studies (Balia and Jones, 2008).

Three examples of unhealthy lifestyles are responsible for a large share of preventable mortality in the developed world (WHO, 2002), namely smoking, alcohol use and more

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[1] Alternatively, another hypothesis is that inequalities are the result of different foetal conditions (Osmani and Sen, 2003).

[2] If that is the case, one would expect public health, as opposed to health services policies, to take a central role in shaping health inequalities.

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http://dx.doi.org/10.1016/j.ehb.2013.03.003

recently, the obesity epidemic (WHO, 2006).[3] Some existing studies point towards the existence of income-related inequalities in obesity (Costa-Font and Gil, 2008; Offer et al., 2010; Ljungvall and Gerdtham, 2010; Philipson and Posner, 1999; Costa-Font and Jofre-Bonet, 2013).[4] A similar effect is found when socio-economic status and smoking prevalence is examined (Hiscock et al., 2012). However, the existence of an income gradient in alcoholism is less clear-cut. A so-called "alcohol income puzzle" claims that there is a positive income gradient for moderate drinking and this effect remains even when controlling for endogeneity (Mullahy and Sindelar, 1991; Auld, 2005). However, epidemiological studies have documented clear and persistent inequalities in alcohol use and consumption on the basis of socio-economic status (Makela, 1999; Harrison and Gardiner, 1999).

In this study, we document trends in income inequalities in unhealthy lifestyles. The latter enables the identification of some non-causal associations that allow us to test the consistency of existing explanations for a socio-economic gradient in unhealthy lifestyles. Given the lack of Europe-wide longitudinal and cross-country European data we draw upon health survey data from samples of adults of two countries, namely England and Spain, where prior studies suggest widespread changes in health behaviour in the last few decades.[5] More specifically, Spain and England top the rankings of European countries with regard to changes in obesity as well as smoking and alcohol use.[6] While most existing longitudinal data lack sufficient information to undertake cross-country analysis,[7] health survey data appears as a second best measurement instrument[8] that can provide us with an empirical support for our questions.

Our results point towards a persistent pattern of income-related inequalities in unhealthy lifestyles. However, the evolution of such inequalities differs according to the specific lifestyle factor under consideration, gender and age. The next section describes the methods employed for this analysis. Section 3 outlines the data in our study and Section 4 provides the results. Section 5 discusses some relevant methodological considerations for cross-country comparisons of inequalities in lifestyle factors, and finally Section 6 concludes.

2. Methods

The methodology used to measure inequality in this study is based on the Concentration Index (CI), one of the most commonly employed measures of income-related inequality in the health economics literature (Wagstaff et al., 1989, 1991; Costa-Font and Hernandez-Quevedo, 2012). The CI provides a measure of the extent of health inequalities that are systematically related with socio-economic status (SES), and ranges between −1 and +1. When the variable under consideration is "unhealthy lifestyle behaviour", negative (positive) values of the CI indicate that this variable is concentrated among the relatively poor (rich); that is, inequalities are "pro-rich" ("pro-poor") or favour high SES individuals (low SES individuals). If, instead, the variable of interest is "healthy lifestyle behaviour", negative (positive) values of the CI show "pro-poor" ("pro-rich") inequalities; that is, a distribution of the lifestyle variable that favours the poor (rich). If the CI equals 0, there is no evidence of inequalities in the lifestyle variable considered that is systematically related to socioeconomic status.

There are various ways of expressing the CI algebraically. The one that is most convenient for our purpose is:

$$CI = \frac{2}{\mu}\mathrm{cov}(h_{it}, R_i) \quad (1)$$

This shows that the value of the Concentration Index is equal to the covariance between individual health (h_i) and the individual's relative rank (R_i), scaled by the mean of health in the population (μ). Then we have multiplied the whole expression by 2, to ensure the Concentration Index ranges between −1 and +1. Eq. (1) indicates that the CI is a measure of the degree of association between an individual's level of health and their relative position in the income distribution.

We calculate the CIs on the basis of a convenient regression formula (Kakwani et al., 1997; O'Donnell et al., 2008), in which a fractional rank variable is created. We correct for a cross-cluster correlation given that it is a form of serial correlation always likely to be present owing to the rank nature of the regressor (Kakwani et al., 1997). For this purpose we use the Newey–West (Newey and West, 1994) variance–covariance matrix, which provides standard errors that are robust to autocorrelation, as well as heteroscedasticty. In STATA, the command "newey"

[3] The latter is responsible for the prevalence expansion of chronic conditions (Costa-Font and Gil, 2005). Among the three, obesity possibly is the unhealthy behaviour most on the rise as it has grown on average by 8% among OECD countries (Flegal et al., 2002), and its prevalence has tripled in Europe, where it now reaches epidemic proportions (Branca et al., 2007; WHO, 2010).

[4] These inequalities tend to favour better-off individuals; arguably implying that closeness to one's ideal weight is a normal good.

[5] Unhealthy lifestyles have recorded relevant increases during the period 1987–2006 in Spain, and 1997–2007 in England.

[6] While Spain has had one of the highest growth rates in obesity in Southern Europe in recent years, in England the upsurge has been particularly high, with 24% of men and women over 16 suffering from obesity (HSE, 2007; Costa-Font et al., 2009). In addition, it has been predicted that in 2050, the prevalence of obesity in England could affect 60% of adult men, 50% of adult women and 25% of children (HSE, 2007). Spain is traditionally regarded as a country with high levels of tobacco consumption, with the second highest consumption in the EU-15 after Greece. Both the UK and Spain stand among the highest ranked EU countries in terms of alcohol consumption (WHO, 2012).

[7] To date, the only survey that includes data on lifestyle factors for a wide set of European countries is the European Household Panel Data (ECHP) which follows up individuals for 8 years until 2001, but its use is limited for current social analysis. The European Union Survey of Income and Living Conditions (EU-SILC) was launched in 2003, and although it was intended to replace the ECHP, it does not include lifestyle indicators.

[8] Previous attempts to draw upon cross-country analysis of inequalities in health have focused on inequalities in self-reported health, rather than health lifestyles. van Doorslaer et al. (1997), for example, estimate income inequalities in self-assessed health (SAH) for seven EU countries and the US. For this particular study, cross-country data of health survey data is used.