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## Past Unemployment Experience and Health Status

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**Abstract:** This paper explores the relationship between individual past unemployment experience and alternative measures of individual health state after controlling for a number of current characteristics and current socio-economic status. Three alternative indicators of past unemployment status are used namely; the number and the duration of past unemployment spells. The study finds a cumulative effect of prolonged past unemployment experience on current individual health status. It also finds that those who are wealthier are also healthier. Finally the different institutional and cultural frameworks prevailing across different E.U countries appear to affect the health - past unemployment experience relationship.

**JEL Classification Code:** D31, I12, I32, J64

**Keywords:** Health status, Unemployment duration, Relative income position

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## 1. Introduction

Given that many countries fund health care, the link between health and unemployment is a central one for policy makers as unemployment tends to be unequally distributed among individuals. Thus, both the economics and the non-economics literatures have investigated this link and have found that unemployment exerts a detrimental effect on individual health status, even after controlling for income and other confounders (Junankar, 1991; Martikainen and Valkonen, 1996; Gerdtham and Johannesson, 2003).

Both the direct link and the multiple pathways that operate on the unemployment-health relationship are well documented in the literature (Stern, 1983; Creed, 1998; Theodossiou, 1998; Ungváry *et al.*, 1999). Unemployment has negative economic consequences on the individual's standard of living through the restriction of his/her financial resources (Stern, 1983). The income loss suffered due to unemployment can cause a deterioration of health through its effect on certain environmental features (such as housing conditions and dietary habits), which in turn can cause increased stress, anxiety and morbidity (Junankar, 1991; Warr, 1987). Furthermore, unemployment *per se* damages individual's perception of self-worth and generates feelings of social isolation and deprivation (Goldsmith *et al.*, 1996; Stern, 1983; Rantakeisu and Jönsson, 2003). Indeed the findings support the involuntary character of unemployment since the latter is accompanied with a higher incidence of psychological and behavioural disorders, psychosomatic diseases, even suicide or parasuicide (Moser *et al.*, 1986; Junankar, 1991; Morrell *et al.*, 1994; Lewis and Sloggett, 1998; Theodossiou, 1998; Ungváry *et al.*, 1999; Flatau *et al.*, 2000).

However, the dynamic character of the unemployment-health relationship constitutes an under researched area in empirical research. Studies show that mental health is negatively affected by past unemployment experience (Clark *et al.*, 2001). The duration of unemployment spells is found to have an impact on physical health, even after controlling for potential confounders such as age, race, marriage, and income (Grundy and Holt, 2000; Morris *et al.*, 1994; Lavis, 1998). However, the deterioration in mental health of the unemployed is found to be frequently followed by a marked reversal of reported health scores (Warr and Jackson, 1984; Clark and Oswald, 1994) and the negative effects of unemployment are usually reversed after re-employment (Morrell *et al.*, 1994). Hence there is evidence of adaptation to unemployment.

When investigating the various pathways through which unemployment may lead to health problems, one should also consider the effect of income loss on health status. Indeed, lack of financial resources during a period of unemployment can affect health through increased financial anxiety. Studies show a strong relationship between financial problems and mental health scores among unemployed individuals (Warr, 1987).

Empirical research appears to ignore the differential cultural or institutional factors among countries that might influence the evidence (Murphy and Athanasou, 1999). Yet differential factors related to the environmental, cultural, health and labor market frameworks in different countries can affect the robustness and the strength of the relationship of interest.

This study adds to the existing research by exploring the relationship between the individual's past unemployment experience and alternative measures of individual health state after controlling for a number of current characteristics and current socio-economic status including the income deprivation and relative income indicators. It also attempts to assess the effect of cultural or institutional factors on this relationship by resorting in a cross-country comparison for five E.U. countries (Denmark, France, Greece, the Netherlands and the UK). Furthermore, since most studies adopt a cross-sectional framework their results are hampered from the simultaneous nature of the unemployment-health relationship (Claussen *et al.*, 1993; Crossley and Kennedy, 2002). Endogeneity is not an issue in this study, since it investigates the effect of past unemployment spells on current health status and past unemployment precedes current health status.

The paper is structured as follows: Section 2 provides details on the dataset used, the definition of the variables of interest and the econometric techniques utilised in the study. Section 3 presents the results for the whole sample and for disaggregations by gender and employment status. Section 4 concludes.

## 2. *The Dataset*

The study draws data from the eight waves (1994- 2001) of the European Community Household Panel survey (ECHP), a representative panel of individuals and households in fifteen European countries. It offers information for a wide range of individual characteristics, such as income, housing, education, health, demographics and employment.

The main variables of interest in this study are the measures of past unemployment experience, namely the duration and the number of past unemployment spells experienced by the individual respondent. The survey limits such information to five years before the individual joined the survey. This creates a problem in measuring individuals' past unemployment experience since some individuals are observed over the whole 8 years period, others enter the survey later, as the panel is replenished, and others leave the panel. To resolve this issue the authors considered appropriate to construct the sample in such a way as each individual to be observed only in the wave that he/she enters the survey for the first time, so that each individual  $n_i$  appears only once during the eight waves that is:

$$n_i \neq n_j, \quad i, j = 1, \dots, 8$$

Thus, the obtained sample is an independently pooled cross-section.<sup>1</sup> To obtain a degree of sample homogeneity, only individuals aged between 23 and 70 years are included in the sample. Hence, only individuals who are in the workforce over the five years before joining the survey are included in the analysis.

The final sample includes 5617 observations for Denmark, 8196 observations for France, 11539 for Greece, 5906 for the Netherlands, and 9268 observations for UK. The analysis is carried out separately for each country. The detailed definitions of the variables are presented in Table 1. Table 2 reports the means of the variables for each of the five countries included in the study.

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<sup>1</sup> The drawback of this set up is that the panel element of the survey is lost. Yet, on balance the authors considered that the approach adopted in this study is appropriate. Given the short duration of the ECHP and the fact that health responds only slowly to changes in socio-economic status, the effect of the time element in a fixed effect model may distort important cross sectional effects.

### **3.1 Health status indicators**

The analysis is carried out using three alternative health status indicators derived from the available information in the ECHP survey. The first measure is the self-assessed health status (SAHS) which is widely used in applied research. SAHS has the advantage of accommodating the individual's own perceptions and judgements of his/her health status and it has been shown to be a strong predictor of objective health measures, such as mortality (Allison and Foster, 2004). In this study, SAHS is obtained from the question:

*“How is your health in general?”*

The answers are classified into four scale points (4: “very good”, 3: “good”, 2: “fair”, 1: “bad/very bad”).

The second health status indicator is the absence of any mental or physical health problems (Theodossiou, 1998; Metcalfe *et al.*, 2003). This indicator of overall health state is obtained from the question:

*“Are you hampered in your daily activities by any physical or mental health problem, illness or disability?”*

The responses are rescaled into a binary response of 1 indicating the absence of any such health problems and 0 otherwise.

Finally, a composite index of health status is obtained by using Principal Component (PC) analysis. The PC methodology is applied on three measures of health namely the self-assessed health status, the absence of physical or mental health problems and the number of nights spent in hospital over the past twelve months. The first PC is used as the composite index of health status (CIHS). The common variation of the above measures explained by the first PC varies across the five countries. For Denmark the common variation explained by the first PC is 57%, for France 54%, for Greece 59% for the Netherlands: 50% and for the UK 51%.

### **3.2 Independent variables**

The main aim of this study is to examine the effect of the number and the duration of past unemployment spells on current individual health state. The following are used to derive the variables of interest:

- (i) *“Number of times the person has been unemployed during the five years before joining the survey.”*
- (ii) *“Is one of the unemployment spells (during the five years before joining the survey) longer than one year?”*

From the above five dummy variables, capturing both the number and the duration of past unemployment spells, are constructed. Individuals with no unemployment history over the past five years before joining the survey are omitted from the regressions.

A number of other variables are also included in the regressions as controls. The current employment status is controlled for by including asset of dummy indicating whether the individual is currently unemployed or is out of the labour force or is currently employed / self-employed (the omitted reference dummy variable).

Furthermore, equivalised household income is also included in the regressions together with the equivalised household income quintiles to account for any possible non-linearities in the income-health relationship. Furthermore, Wagstaff and van Doorslaer (2000) formulated the deprivation hypothesis by arguing that “... it is not absolute income that matters for individual health rather the extent of deprivation as measured by the income gap” (p. 548). In this study “income deprivation” is defined as the gap between the highest income in the sample and the individuals own income level. The income deprivation index is calculated separately for each wave and country.<sup>2</sup>

A set of demographic characteristics and individual personal characteristics are also included in the regressions in order to control for confounding factors. Specifically, the following variables are included: Age and age squared, to capture any non-linearity in the age-health relationship, gender, marital status, social networks (approximated by individual membership

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<sup>2</sup> For estimation purposes the Income deprivation index is divided by 10000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1000 in the case of France.

in social groups, such as sports, entertainment clubs, political parties, etc)<sup>3</sup> and educational attainment. Finally, the linear trend of time and regional dummies variables for each country are also controlled in order to account for the effects of aggregate changes over time and across regions respectively.<sup>4</sup>

### **3.3 Econometric modelling**

The econometric modelling is identical across all five countries, so one can perform cross-country comparisons. The analysis is applied to the overall sample and to the employed and the unemployed sample separately. The analysis is then repeated for individuals aged below and above 45 years of age.

The endogeneity issue is a problem encountered in the studies of the unemployment-health relationship. Not only unemployed individuals experience lower levels of health, but also individuals with lower health state face more risk of exiting employment. The issue of endogeneity is not a major issue in this study since it investigates the effect of past unemployment state on current health, thus eliminating the reverse causality. Furthermore, several studies argue that despite the existence of a dual path relationship, the deteriorating health effects of unemployment remain significant (Hamilton *et al.*, 1997; Catalano *et al.*, 1999; Murphy and Athanasou, 1999; Vesalainen and Vuori, 1999).

Ordered logistic regressions are utilised to assess the impact of individual characteristics on SAHS.<sup>5</sup> Similarly, a logistic regression is used in order to assess the effect of individual SES characteristics on the (binary) indicator of the absence of physical and mental health problems. Finally the standard OLS linear regression is applied to assess the impact of individual determinants to the health indicator derived via the principal component analysis. Heteroskedasticity-robust standard errors are calculated for all regression models.

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<sup>3</sup> In the case of UK, due to a large number of missing values in the social networks question, an additional dummy variable is used as a regressor indicating individuals that have not answered the question.

<sup>4</sup> In alternative specifications year dummies variables are also used in the regressions instead of the linear trend of time. The specification tests are in favour of the inclusion of the latter. Furthermore, the relationships of interest do not differ significantly. In the case of Denmark and the Netherlands, there is no information about the regions in the survey, thus no regional dummies are included in the regressions.

<sup>5</sup> In addition, standard linear regression techniques are employed for standardised scores (z-scores) of SAHS. Due to space consideration, these results are not presented in the paper but they are in line with the results of the ordered logistic regression.



#### ***4. Past Unemployment Experience and Health Status: Results***

##### ***4.1 Health status and its correlates.***

The aggregated regression results in Tables 3-5 show the effect of individual characteristics on SAHS, the absence of mental and physical health problems, and the health measure derived via PC, for each of the five E.U. countries respectively<sup>6</sup>.

Overall, the detrimental effect of past unemployment experience on the relevant measures of overall health state is confirmed for all countries. However, the results exhibit some differences depending on the health indicator or the country examined. Past unemployment spells are a significant contributor of SAHS in the case of Denmark, Greece and the UK. The strongest deleterious effect of past unemployment experience on SAHS is observed for individuals reporting multiple long-term spells where at least one of the spells has duration of more than a year (“Unemspell5”). The odds of reporting a higher level of SAHS for these individuals are lower by a factor of 0.69 for Denmark, 0.63 for Greece and 0.70 for the UK, compared to those with no unemployment history (“Unemspell1”). The regression coefficients reveal that past unemployment experience has the most significant effect on the SAHS of the Greek workforce. This finding may reflect the high unemployment rate that characterises Greek labour markets. Nevertheless, Crossley and Kennedy (2002) argue that SAHS can differentiate significantly among different population subgroups for a number of reasons including cultural factors or even cultural normalisation of unemployment and protective institutional schemes, such as high unemployment benefits (Schaufeli and Van Yperen, 1992) that mitigate the harmful effects of unemployment experience on SAHS. This view is supported by the findings of this study since it is shown that the health measure based on the absence of specific mental and physical health problems is consistently inversely related to the individual’s unemployment history for all five countries examined in the study. Similarly to the SAHS measure, the strongest impact of past unemployment spells on the objective health status measure is observed in Greece. Greek workers with past unemployment experience the most significant risk of mental and physical health problems in comparison to the remainder, independently of the number or the duration of past unemployment spells. Interestingly, contrary to the findings when the SAHS measure of

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<sup>6</sup> The results the health index derived from the PC analysis are reported in Tables 5, 8, 11, 14 and 17 and are very similar to those of the SAHS. Hence, they are not further discussed for space considerations.

health is used, past unemployment for the Dutch and French sample turns out to be significant a determinant of the objective health status indicator in both of these countries casting some doubt on the consistency of the SAHS for cross group comparisons.

A number of the control variables used reveal some interesting results<sup>7</sup>. Thus, in the relevant literature current unemployment is consistently found to negatively affect individual health status (Theodossiou, 1998; Rantakeisu and Jönsson, 2003). This study provides evidence that being currently unemployed hampers health status, independently of the way health is approximated. The finding is robust for all the countries used in this study. Unemployed individuals have lower odds of reporting higher SAHS which vary from 0.57 for the Netherlands up to 0.85 for the U.K., compared to their employed counterparts. Similarly, compared to the employed counterparts, the odds of reporting absence of specific mental and physical health problems for the unemployed are lower and vary from 0.47 for the Netherlands and Denmark to 0.77 for Greece. Similar patterns are observed for individuals who are out of the labour force. Being out of the labour force is accompanied with lower odds of reporting higher SAHS and absence of specific health problems in four out of the five countries.

The results appear to support the “relative-position” hypothesis for all countries with the exception of the Netherlands. For an individual, a move from one income quintile to the next is associated with an increase in both SAHS and the absence of specific physical and mental health problems. Thus, an increase in the individual relative income position is associated with 1.07 times greater odds of reporting higher levels of SAHS in the case of Denmark and France, 1.12 in the case of Greece and 1.09 in the case of UK. Similarly, for the absence of mental and physical health problems measure of health the respective odds are 1.09 for Denmark, 1.14 for France, 1.19 for Greece, and 1.12 for the UK. The effect of relative economic position on individual health is consistently greater in magnitude for the Greek sample and lower for the Danish one. This finding appears to reflect that the degree of economic inequality at a national level affects significantly individual health status.

Turning to the ‘income deprivation’ measure it seems that it has an independent deleterious effect on SAHS independently of past and current employment situation. However, ‘income

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<sup>7</sup> However, it should be recognised that the results concerning the control variables indicate a strong association between the variable in question and the measure of health. The issue of endogeneity may affect the respective estimates to varying degrees. Thus, the results should be viewed under this caveat.

deprivation' appears to affect mainly the SAHS and not the objective health status indicator. The most significant effect is observed for the Netherlands where a unit increase in economic deprivation is associated with a reduction in the odds of reporting a higher level of SAHS and absence of specific physical and mental health problems by a factor of 0.27 and 0.22 respectively. The 'income deprivation' effect is much weaker in the case of the physical and mental health problems health indicator for the French and the Dutch sample.

It is well established in the literature that education determines earnings from work and it also leads to the adoption of healthier lifestyles and engagement in health investing activities (Duncan *et al.*, 2002; Fuchs, 2004). Furthermore, educational attainment is found to be associated positively with re-employment opportunities (Vesalainen and Vuori, 1999). This study shows that having higher or middle educational levels is associated consistently with higher odds of reporting better health status compared to individuals of lower educational attainment. In general, this is consistent for all health status indices and all countries examined. Furthermore, the education effect on health is greater in magnitude for individuals of highest educational class in comparison to individuals in middle educational class.

Warr (1987) argues that unemployment can lead to decreasing social activities and social integration through the income loss suffered by individuals. In turn, decreased social contacts may lead to deterioration in the individual's mental health state. Furthermore, Gore (1978) and Paton and Donohue (1998) argue that engagement in social activities moderates the effects of unemployment and economic deprivation on health, through increasing the individual's ability to cope with the repercussions of unemployment. The results of this study provide only limited support to this hypothesis. The positive effect of engagement in social activities on SAHS is significant only in the case of Greece, the Netherlands and the UK. Furthermore, individuals in France and the Netherlands who report engagement in social activities exhibit lower odds of reporting absence of specific mental and physical health problems.

The effects of the remaining control regressors reveal a number of interesting patterns which are consistent with the literature. As one would expect a negative relationship between age and health is shown. The evidence also supports the importance of gender differences in health inequalities. In line with earlier findings, women systematically report lower scores of SAHS in comparison to men (Theodossiou, 1998; Eriksson *et al.*, 2001). However, females

report less physical and mental health problems compared to their male counterparts. This pattern is consistent for France, Greece, and the UK. In contrast, being a female is associated with lower odds of reporting higher levels of health in the Netherlands.

Being married exerts a beneficial effect on the individual's health status since married individuals may benefit from the partner's emotional support or the adoption of healthier lifestyles and higher standards of living (Collins and Coltrane, 1992; Gardner and Oswald, 2002, 2004; Wilson and Oswald, 2002). This beneficial effect is confirmed for Greece and the UK. Furthermore, divorce or death of the partner can be a source of great stress (Wilson and Oswald, 2002). In line with this the results for Denmark, France, and Greece show that being divorced or widowed is associated with lower odds of reporting higher levels of health in comparison to single individuals.

#### ***4.2 Health status and its correlate by age***

One important result reported in Tables 3 to 5 is that age affects negatively the health status. Thus, the study proceeds by disaggregating the sample by age. To keep the analysis simple two age groups are used; those aged less than 45 years old and those aged 45 years or more. Tables 6-8 present the regression results for the younger age group, whereas Tables 9-11 presents the respective results for the older age group.

The results obtained from this disaggregation show that past unemployment spells affect negatively the health of the younger age group, whereas this effect does not persist for the older group. In general, for all countries utilised in this study, the effect of past unemployment spells on the health is significant for the younger age group. This effect persists only in the case of Greece when the older age group is examined. This finding reflect the evidence from the literature which indicates that those approaching retirement age are able to cope better with unemployment compared to their younger counterparts (Osipow and Fitzgerald, 1993). Furthermore, individuals approaching retirement exhibit a low labour force participation commitment (Warr and Jackson, 1984) reduces the individual's unemployment experience as near retirement individuals tend to withdraw from the labour market rather than be recorded as unemployed (Vesalainen and Vuori, 1999; Rantakeisu and Jönsson, 2003). Similar result is

also found with regard the current unemployment indicator. The deleterious effect of being currently unemployed upon health status is significant mainly for younger age groups.

The “relative income position” effect on health is significant for both the younger and the older age groups in France, Greece, and the UK. The effect persists on the older age groups as well. In contrast, income deprivation turns out to be significant mainly on the health of the younger group (except in the case of France). All in all, it appears that the effect of income deprivation on health is stronger on the younger member of the workforce, whereas the relative income position effect operates on the whole range of ages.

#### ***4.3 Health status and its correlates by employment status***

One would expect that the components of SES such as the individual’s past unemployment experience or income rank should affect in different ways the health of the employed and the unemployed individuals respectively. This issue is tentatively exploited in this section by repeating the above analysis separately for the sample of the employed and the unemployed individuals in order to distinguish any differential effects of past unemployment on those currently employed compared to those currently unemployed<sup>8</sup>. Tables 12-14 present the regression results for the employed sample and Tables 15-17 present the results for the unemployed sample.

Studies show that once individuals re-enter the labour market, past unemployment effects on health diminish (Morrell *et al.*, 1994; Murphy and Athanasou, 1999; Vesalainen and Vuori, 1999). The results of this study support this hypothesis. In general, the effect of past unemployment spells upon current health status is significantly lower among the currently employed compared to their unemployed counterparts. A surprising pattern is observed for Denmark and the Netherlands. Experience of past unemployment is associated positively with current health status among the currently unemployed sample. Schaufeli and Van Yperen (1992) attribute this phenomenon to a combination of the egalitarian labour market policy (such as the ones embedded in the institutional frameworks of Denmark and the Netherlands)

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<sup>8</sup> However, it should be noted that in disaggregating the sample by employment status the issue of selectivity bias may arise. For this tentative investigation no attempt is made to correct for selectivity bias. Thus, the results should be looked upon under this caveat.

or the gradual strengthening of social acceptance of the unemployed by the community. In the light of this study, institutional and cultural differences between countries appear to moderate in a differential way the harmful effects of unemployment on health.

Finally, for those in employment both the “relative position” and the “income deprivation” hypotheses are supported by the findings of this study. Surprisingly, no evidence is found to support the “income deprivation” hypothesis for the sample of the unemployed individuals. In fact, it appears that for the majority of countries investigated both the relative income rank and the deprivation indicators are more important for the employed than the unemployed individuals. This may imply that the employed are more aware of their position in the income distribution and the associated social ranking than their unemployed counterparts who mostly face similar social and financial situation.

## ***5. Conclusions***

This paper shows that past unemployment is detrimental to current health status after controlling for other personal characteristics including current unemployment and income status. Both the frequency and the duration of unemployment spells seem to exert an important effect on the health of the individual though the importance of this effect tends to be not a similar in magnitude and importance across countries. This may mirror the different institutional frameworks and social arrangements prevailing across countries. The income deprivation effect appears to be important mainly in the case of the self assessed measure of health. Furthermore, the health effect of relative income position and income deprivation appears to be important mainly for the employed. It is possible that employed individuals are much more concerned with their financial position and social in the community than the unemployed.

All in all not only current unemployment status, but past unemployment history imposes a direct burden on individual health state. This study shows that the socio-economic gradient acts cumulatively upon individual health; namely, past unemployment history can affect health status. However, the observed past unemployment effects on health differentiate in magnitude and sign, with respect to the cultural and policy framework.

**References:**

- Allison, A.R., Foster, J.E., 2004. Measuring health inequality using qualitative data. *Journal of Health Economics*, 23(3): 505-524.
- Catalano, R., Drake, R.E., Becker, D.R., Clark, R.E., 1999. Labor Market Conditions and Employment of the Mentally Ill. *Journal of Mental Health Policy and Economics*, 2: 51-54.
- Clark, A.E., Oswald, A.J., 1994. Unhappiness and Unemployment. *Economic Journal*, 104: 648-659.
- Clark, A.E., Georgellis, Y., Oswald, A.J., 2001. Scarring: The Psychological Impact of Past Unemployment. *Economica*, 68: 221-241.
- Claussen, B., Bjørnal, A., Hjort, P.F., 1993. Health and re-employment in a two year follow up of long term unemployed. *Journal of Epidemiology and Community Health*, 47(1): 14-18.
- Collins, R., Coltrane, S., 1992. *Sociology of Marriage and the Family: Gender, Love and Property*, 3rd ed. Nelson Hall, Chicago.
- Creed, P.A., 1998. Improving the mental and physical health of unemployed people: why and how? *Medical Journal of Australia*, 168(4): 177-178.
- Crossley, T.F., Kennedy, S., 2002. The reliability of self-assessed health status. *Journal of Health Economics*, 21: 643-658.
- Duncan, G.J., Daly, M.C., McDonough, P., Williams, D.R., 2002. Optimal Indicators of Socioeconomic Status for Health Research. *American Journal of Public Health*, 92(7): 1151-1157.
- Eriksson, I., Unden, A., Elofsson, S., 2001. Self-rated health. Comparisons between three different measures. Results from a population study. *International Journal of Epidemiology*, 30: 326-333.
- Flatau, P., Galea, J., Petridis, R., 2000. Mental Health and Well-being and Unemployment. *Australian Economic Review*, 33(2): 161-181.
- Fuchs, V.R., 2004. Reflections on the socio-economic correlates of health. *Journal of Health Economics*, 23: 653-661.
- Gardner, J., Oswald, A., 2002. Is it money or marriage that keeps people alive? Royal Economic Society Annual Conference 2003, Working Paper Series No. 155.
- Gardner, J., Oswald, A., 2004. How is mortality affected by money, marriage and stress? *Journal of Health Economics*, 23(6): 1181-1207.
- Gerdtham, U.-G., Johannesson, M., 2003. A note on the effect of unemployment on mortality. *Journal of Health Economics*, 22: 505-518.

- Goldsmith, A.H., Veum, J.R., Darity, W.Jr., 1996. The impact of labor force history on self-esteem and its component parts, anxiety, alienation and depression. *Journal of Economic Psychology*, 17: 183-220.
- Gore, S., 1978. The Effect of Social Support in Moderating the Health Consequences of Unemployment. *Journal of Health and Social Behavior*, 19(2): 157-165.
- Grundy, E., Holt, G., 2000. Adult life experiences and death in early old age in Great Britain. *Social Science & Medicine*, 51: 1061-1074.
- Hamilton, V.H., Merrigan, P., Dufresne, E., 1997. Down and out: Estimating the relationship between mental health and unemployment. *Health Economics*, 6: 397-406.
- Junankar, P.N., 1991. Unemployment and mortality in England and Wales: A preliminary analysis. *Oxford Economic Papers*, 43(2): 305-320.
- Lavis, J.N., 1998. Unemployment and mortality: A longitudinal study in the United States, 1968-1992. McMaster University Centre for Health Economics and Policy Analysis, Working Paper Series No. 98-5.
- Lewis, G., Sloggett, A., 1998. Suicide, deprivation and unemployment: record linkage study. *British Medical Journal*, 317: 1283-1286.
- Martikainen, P.T., Valkonen, T., 1996. Excess mortality of unemployed men and women during a period of rapidly increasing unemployment. *Lancet*, 348: 909-912.
- Morrell, S., Taylor, R., Quine, S., Kerr, C., Western, J., 1994. A cohort study of unemployment as a cause of psychological disturbance in Australian youth. *Social Science & Medicine*, 38(11): 1553-1564.
- Morris, J.K., Cook, D.G., Shaper, A.G., 1994. Loss of employment and mortality. *British Medical Journal*, 308: 1135-1139.
- Moser, K.A., Fox, A.J., Goldblatt, P.O., Jones, D.R., 1986. Stress and heart disease: evidence of associations between unemployment and heart disease from the OPCS Longitudinal Study. *Postgraduate Medical Journal*, 62: 797-799.
- Murphy, G.C., Athanasou, J.A., 1999. The effect of unemployment on mental health. *Journal of Occupational and Organizational Psychology*, 72: 83-99.
- Osipow, S., Fitzgerald, L., 1993. Unemployment and mental health: A neglected relationship. *Applied and Preventive Psychology*, 2: 59-69.
- Patton, W., Donohue, R., 1998. Coping with Long-term Unemployment. *Journal of Community & Applied Social Psychology*, 8: 331-343.



- Rantakeisu, U., Jönsson, L.R., 2003. Unemployment and mental health among white-collar workers-a question of work involvement and financial situation? *International Journal of Social Welfare*, 12(1): 31-41.
- Schaufeli, W.B., Van Yperen, N.W., 1992. Unemployment and psychological distress among graduates: A longitudinal study. *Journal of Occupational and Organisational Psychology*, 65: 291-305.
- Stern, J., 1983. The relationship between unemployment, morbidity and mortality in Britain. *Population Studies*, 37: 61-74.
- Stewart, J.M., 2001. The impact of health status on the duration of unemployment spells and the implications for studies of the impact of unemployment on health status. *Journal of Health Economics*, 20: 781-796.
- Theodossiou, I., 1998. The effects of low-pay and unemployment on psychological well-being: A logistic regression approach. *Journal of Health Economics*, 17(1): 85-104.
- Ungváry, G., Morvai, V., Nagy, I., 1999. Health risk of unemployment. *Central European Journal of Occupational and Environmental Medicine*, 5(2): 91-112.
- van Rossum, C.T.M., van de Mheen, H., Mackenbach, J.P., Grobbee, D.E., 2000. Socioeconomic status and mortality in Dutch elderly people-The Rotterdam study. *European Journal of Public Health*, 10: 255-261.
- Vesalainen, J., Vuori, J., 1999. Job-seeking, Adaptation and Re-employment Experiences of the Unemployed: A 3-year Follow-up. *Journal of Community and Applied Social Psychology*, 9: 383-394.
- Wagstaff, A., van Doorslaer, E., 2000. Income Inequality and Health: What does the Literature Tell Us? *Annual Review of Public Health*, 21: 543-567.
- Warr, P., 1987. *Work, Unemployment and Mental Health*. Oxford University Press, New York.
- Warr, P., Jackson, P., 1984. Men without jobs: Some correlates of age and length of unemployment. *Journal of Occupational Psychology*, 57: 77-85.
- Wilson, C.M., Oswald, A.J., 2002. How Does Marriage Affect Physical and Psychological Health? A Survey of the Longitudinal Evidence. Mimeo, Department of Economics, University of Warwick.

Table 1. Definitions of Variables

<i>Variables</i>	<i>Definitions</i>
SAHS	Self-Assessed Health Status (1=bad/very bad, 2=fair, 3=good, 4=very good)
Health Problems	Hampered in daily activities by physical or mental health problems (0=yes, 1=no)
Pca Health	Principal component of health (constructed by SAHS, Health Problems, Inpatient Nights)
Age	Age in years (23-70 years)
Age <sup>2</sup>	Age squared
Female	A Dummy variable equal to 1 if the respondent is a female, 0 otherwise
Married	A Dummy variable equal to 1 if the respondent is married, 0 otherwise
Divorced/ Widowed	A Dummy variable equal to 1 if the respondent is either separated/divorced or widowed (for Netherlands separated individuals are included in the “Married” dummy variable by the designers of the survey), 0 otherwise
Educllevel1	A Dummy variable equal to 1 if the respondent is of higher level education, 0 otherwise
Educllevel2	A Dummy variable equal to 1 if the respondent is of middle level education, 0 otherwise
Unemployed	A Dummy variable equal to 1 if the respondent is unemployed, 0 otherwise
Out of Labour Force	A Dummy variable equal to 1 if the respondent is out of the labour force (inactivity is defined by: working in apprenticeship, working for training, working in unpaid work, being in education, being retired, being inactive, working less than 15 hours/week), 0 otherwise
Income Quintiles	Equivalised household income in quintiles, highest: 5 – lowest: 1 (calculated separately for each wave)
Income Deprivation	The difference between maximum income and equivalised household income, calculated separately for each wave (divided by 10000 for DK GR, NL, by 100 for UK, and by 1000 for FR)
Unemspell1	A Dummy variable equal to 1 if the respondent has not experienced any unemployment spells during the five years before joining the survey, 0 otherwise (omitted from regressions)
Unemspell2	A Dummy variable equal to 1 if the respondent experienced one unemployment spell with duration of less than a year during the five years before joining the survey, 0 otherwise
Unemspell3	A Dummy variable equal to 1 if the respondent experienced one unemployment spell with duration of more than a year during the five years before joining the survey, 0 otherwise
Unemspell4	A Dummy variable equal to 1 if the respondent experienced more than one unemployment spells all with duration of less than a year during the five years before joining the survey, 0 otherwise
Unemspell5	A Dummy variable equal to 1 if the respondent experienced more than one unemployment spells with at least one of them with duration of more than a year during the five years before joining the survey, 0 otherwise
Social Networks	A Dummy variable equal to 1 if the respondent is member in any social club, such as sports or entertainment club, a local or neighbourhood group, a party, etc., 0 otherwise
Social Networks (missing)	A Dummy variable equal to 1 if the respondent did not answer the above question about social networks (only for UK), 0 otherwise
Time	Linear term of time (1-8)
GRregion1	A Dummy variable equal to 1 if the respondent lives in South Greece, 0 otherwise
GRregion2	A Dummy variable equal to 1 if the respondent lives in Central Greece, 0 otherwise
GRregion3	A Dummy variable equal to 1 if the respondent lives in Attica Region of Greece, 0 otherwise
FRregion1	A Dummy variable equal to 1 if the respondent lives in Île de France, 0 otherwise
FRregion2	A Dummy variable equal to 1 if the respondent lives in Bassin Parisien, 0 otherwise

Table 1. Definitions of Variables (continued)

<i>Variables</i>	<i>Definitions</i>
FRregion3	A Dummy variable equal to 1 if the respondent lives in Nord - Pas-de-Calais, 0 otherwise
FRregion4	A Dummy variable equal to 1 if the respondent lives in Est, 0 otherwise
FRregion5	A Dummy variable equal to 1 if the respondent lives in Ouest, 0 otherwise
FRregion6	A Dummy variable equal to 1 if the respondent lives in Sud-Ouest, 0 otherwise
FRregion7	A Dummy variable equal to 1 if the respondent lives in Centre-Est, 0 otherwise
UKregion1	A Dummy variable equal to 1 if the respondent lives in North, 0 otherwise
UKregion2	A Dummy variable equal to 1 if the respondent lives in Yorkshire and Humberside, 0 otherwise
UKregion3	A Dummy variable equal to 1 if the respondent lives in East Midlands, 0 otherwise
UKregion4	A Dummy variable equal to 1 if the respondent lives in East Anglia, 0 otherwise
UKregion5	A Dummy variable equal to 1 if the respondent lives in South East, 0 otherwise
UKregion6	A Dummy variable equal to 1 if the respondent lives in South West, 0 otherwise
UKregion7	A Dummy variable equal to 1 if the respondent lives in West Midlands, 0 otherwise
UKregion8	A Dummy variable equal to 1 if the respondent lives in North West, 0 otherwise
UKregion9	A Dummy variable equal to 1 if the respondent lives in Wales, 0=otherwise

\* Regional dummies are not available for Denmark and the Netherlands.

Table 2. Means of Variables

<i>Means</i> <i>Variables</i>	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
SAHS	3.32	2.75	3.20	3.03	2.90
Health Problems	0.83	0.81	0.86	0.82	0.89
Age	41.13	45.27	43.08	39.37	39.62
Female	0.50	0.50	0.52	0.45	0.52
Married	0.50	0.67	0.71	0.65	0.54
Divorced/ Widowed	0.13	0.12	0.07	0.08	0.14
Edulevel1	0.31	0.19	0.18	0.21	0.40
Edulevel2	0.42	0.37	0.28	0.44	0.13
Unemployed	0.09	0.10	0.08	0.03	0.05
Out of Labour Force	0.24	0.35	0.43	0.20	0.28
Income Quintiles	2.98	3.00	2.98	2.99	3.00
Income Deprivation*	6.42	5.68	225.35	0.52	57.58
Unemspell2	0.11	0.07	0.04	0.07	0.10
Unemspell3	0.06	0.05	0.06	0.04	0.04
Unemspell4	0.09	0.04	0.04	0.02	0.04
Unemspell5	0.06	0.02	0.04	0.01	0.02
Social Networks	0.58	0.28	0.11	0.49	0.53
Social Networks (missing)					0.14
GRregion1			0.32		
GRregion2			0.23		
GRregion3			0.33		
FRregion1		0.16			
FRregion2		0.19			
FRregion3		0.07			
FRregion4		0.09			
FRregion5		0.14			
Frdummy6		0.11			
Frdummy7		0.12			
UKregion1					0.06
UKregion2					0.09
UKregion3					0.09
UKregion4					0.04
UKregion5					0.30
UKregion6					0.08
UKregion7					0.09
UKregion8					0.10
UKregion9					0.05
Observations	5617	8196	11539	7503	9268

\* Income deprivation was divided by 10000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1000 in the case of France.

\*\* Regional dummies are not available for Denmark and the Netherlands.

Table 3. Self Assessed Health Status Ordered Logistic Regressions, Total Sample

<i>Independent Variables</i>	<i>Self Assessed Health Status, Total Sample</i>				
	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Age	0.88 ***	0.95 ***	0.90 ***	0.96 **	0.97 ***
Age <sup>2</sup>	1.00 ***	1.00	1.00 **	1.00	1.00 *
Female	1.00	0.85 ***	0.89 **	0.72 ***	0.92 *
Married	1.02	1.06	1.14 *	1.06	1.11 *
Divorced/ Widowed	0.85 *	0.82 **	0.83 *	1.06	1.03
Edulevel1	1.95 ***	1.17 **	1.49 ***	1.56 ***	1.33 ***
Edulevel2	1.67 ***	1.17 ***	1.46 ***	1.17 **	1.21 ***
Unemployed	0.75 **	0.81 **	0.74 ***	0.57 **	0.85 *
Out of Labour Force	0.43 ***	0.70 **	0.67 ***	1.11	0.53 ***
Income Quintiles	1.07 ***	1.07 ***	1.12 ***	0.96	1.09 ***
Income Deprivation	0.95 *	0.91 **	1.00 ***	0.27 ***	0.99 ***
Unemspell2	1.00	1.03	0.95	0.96	0.88 *
Unemspell3	0.78 *	0.92	0.80 **	0.88	0.76 **
Unemspell4	0.82 *	0.88	1.08	0.78	0.88
Unemspell5	0.69 ***	0.88	0.63 ***	0.91	0.70 ***
Social Networks	1.07	1.06	1.14 **	1.16 ***	1.14 ***
Time Trend	0.87 ***	0.79 ***	1.04	0.87 ***	0.88 ***
Regional dummies	No	Yes	Yes	No	Yes
Wald chi square	831.66	980.82	4098.58	271.82	636.98
Log Likelihood	-5674.93	-9475.88	-11095.80	-5837.47	-10957.37
Observations	5617	8196	11539	5906	9268

\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

\*\* All regressions are estimated with heteroskedasticity-robust standard errors.

\*\*\* Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France.

Table 4. Absence of Physical and Mental Health Problems Logistic Regressions, Total Sample

<i>Independent Variables</i>	<i>Absence of Physical or Mental Health Problems, Total Sample</i>				
	<i>Countries</i>				
	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Age	0.85 ***	0.95 **	0.85 ***	0.98	0.84 ***
Age <sup>2</sup>	1.00 ***	1.00	1.00 ***	1.00	1.00 ***
Female	0.95	1.22 ***	1.35 ***	0.78 ***	1.30 ***
Married	1.02	1.16	1.90 ***	1.19	1.01
Divorced/ Widowed	0.81	0.76 **	1.29 *	1.17	0.98
Educllevel1	1.62 ***	1.53 ***	1.79 ***	1.52 ***	1.17 *
Educllevel2	1.62 ***	1.24 ***	1.64 ***	1.17	0.93
Unemployed	0.47 ***	0.72 ***	0.77 *	0.47 ***	0.48 ***
Out of Labour Force	0.23 ***	0.56 ***	0.41 ***	1.00	0.19 ***
Income Quintiles	1.09 ***	1.14 ***	1.19 ***	0.97	1.12 ***
Income Deprivation	0.97	0.80 **	0.99	0.22 ***	1.01
Unemspell2	1.01	1.01	0.67 **	0.95	1.18
Unemspell3	1.14	0.90	0.72 **	0.84	0.77 *
Unemspell4	0.77 *	0.67 **	0.67 **	0.70	0.95
Unemspell5	0.98	0.81	0.43 ***	0.42 **	0.77
Social Networks	0.94	0.88 *	1.04	1.18 **	1.00
Time Trend	0.97	0.70 ***	1.14 *	0.90 *	1.04
Regional dummies	No	Yes	Yes	No	Yes
Wald chi square	526.38	711.46	1165.25	197.20	742.65
Log Likelihood	-2276.34	-3557.24	-3944.73	-2528.85	-2668.15
Observations	5617	8196	11539	5906	9268

\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

\*\* All regressions are estimated with heteroskedasticity-robust standard errors.

\*\*\* Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France.

Table 5. Principal Component of Health OLS Regressions, Total Sample

<i>Independent Variables</i>	<i>Principal Component of Health, Total Sample</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
Age	-0.08 ***	-0.02 *	-0.01 *	-0.01	-0.03 ***
Age <sup>2</sup>	0.001 ***	-0.0001	-0.0003 ***	-0.0002	0.0002 **
Female	-0.01	0.01	0.04	-0.18 ***	0.02
Married	0.04	0.06 *	0.18 ***	0.05	0.05
Divorced/ Widowed	-0.16 **	-0.19 ***	-0.07	0.05	-0.003
Educllevel1	0.38 ***	0.14 ***	0.20 ***	0.25 ***	0.13 ***
Educllevel2	0.30 ***	0.13 ***	0.21 ***	0.11 ***	0.08 **
Unemployed	-0.30 ***	-0.15 ***	-0.13 ***	-0.46 ***	-0.15 **
Out of Labour Force	-0.80 ***	-0.32 ***	-0.33 ***	0.003	-0.65 ***
Income Quintiles	0.03 **	0.06 ***	0.07 ***	-0.02	0.04 ***
Income Deprivation	-0.02	-0.08 ***	-0.001 **	-0.78 ***	-0.001
Unemspell2	-0.01	0.01	-0.07	-0.004	-0.03
Unemspell3	-0.03	-0.05	-0.13 ***	-0.06	-0.23 **
Unemspell4	-0.13 **	-0.12 *	-0.03	-0.14	-0.07
Unemspell5	-0.09	-0.11	-0.25 ***	-0.34	-0.19 **
Social Networks	0.01	-0.004	0.05	0.10 ***	0.06 **
Time Trend	-0.03 *	-0.15 ***	0.01	-0.08 ***	-0.04 ***
Constant	1.99 ***	1.43 ***	0.87 ***	1.10 ***	0.79 ***
Regional dummies	No	Yes	Yes	No	Yes
R <sup>2</sup>	0.17	0.13	0.25	0.05	0.11
F-statistic	48.21	45.94	180.08	15.78	31.27
Observations	5617	8196	11539	5906	9268

\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

\*\* All regressions are estimated with heteroskedasticity-robust standard errors.

\*\*\* Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France.

Table 6. Self Assessed Health Status Ordered Logistic Regressions, 23-44 Years Age Group

<i>Countries</i>	<i>Self Assessed Health Status, 23-44 Years Age Group</i>				
	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
<i>Independent Variables</i>					
Unemployed	0.83	0.86	0.70 ***	0.83	0.79 **
Income Quintiles	1.04	1.05	1.05 **	0.94 *	1.10 ***
Income Deprivation	0.95 *	0.94	1.00 ***	0.24 ***	0.99 ***
Unemspell2	0.92	1.08	0.96	0.93	0.83 **
Unemspell3	0.54 ***	0.90	0.90	0.85	0.70 **
Unemspell4	0.76 **	0.87	0.91	0.75	0.92
Unemspell5	0.53 ***	0.77	0.70 ***	0.89	0.69 ***
Wald chi square	180.91	151.60	628.84	160.91	302.91
Log Likelihood	-3050.66	-4611.59	-4593.68	-4069.73	-6944.46
Observations	3422	4126	6345	4212	5999

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.



Table 7. Absence of Physical and Mental Health Problems Logistic Regressions, 23-44 Years Age Group

<i>Independent Variables</i>	<i>Absence of Physical or Mental Health Problems, 23-44 Years Age Group</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Unemployed	0.58 ***	0.77 *	0.63 **	0.58 *	0.36 ***
Income Quintiles	1.01	1.11 *	1.16 ***	0.90 *	1.11 **
Income Deprivation	0.94	0.89	0.99	0.10 ***	1.00
Unemspell2	0.81	0.91	0.75	0.94	1.22
Unemspell3	0.82	0.57 ***	0.80	0.69 *	0.81
Unemspell4	0.59 ***	0.65 **	0.61 **	0.69	0.96
Unemspell5	0.67 *	0.67	0.51 ***	0.40 **	0.93
Wald chi square	136.27	94.14	225.69	89.65	253.92
Log Likelihood	-1181.78	-1322.38	-1229.76	-1665.57	-1274.11
Observations	3422	4126	6345	4212	5999

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 8. Principal Component of Health OLS Regressions, 23-44 Years Age Group

<i>Independent Variables</i>	<i>Principal Component of Health, 23-44 Years Age Group</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
Unemployed	-0.22 ***	-0.09 *	-0.14 ***	-0.24	-0.21 ***
Income Quintiles	0.004	0.04 **	0.03 ***	-0.03	0.03 ***
Income Deprivation	-0.02 *	-0.05	-0.001 **	-0.90 ***	-0.002
Unemspell2	-0.09 *	0.01	-0.03	-0.02	-0.04
Unemspell3	-0.22 **	-0.17 **	-0.08 *	-0.11	-0.28 **
Unemspell4	-0.20 ***	-0.12 *	-0.07	-0.15	-0.06
Unemspell5	-0.25 ***	-0.19	-0.18 ***	-0.37	-0.16 *
R <sup>2</sup>	0.07	0.03	0.08	0.04	0.06
F-statistic	9.85	4.75	20.77	10.06	11.27
Observations	3422	4126	6345	4212	5999

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 9. Self Assessed Health Status Ordered Logistic Regressions, 45-70 Years Age Group

<i>Countries</i>	<i>Self Assessed Health Status, 45-70 Years Age Group</i>				
	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Unemployed	0.53 ***	0.65 ***	0.83	0.21 ***	0.98
Income Quintiles	1.14 ***	1.10 ***	1.18 ***	1.01	1.10 ***
Income Deprivation	0.97	0.91	1.00	0.39	0.99
Unemspell2	1.18	0.95	0.99	1.08	1.11
Unemspell3	1.37	0.99	0.58 ***	1.09	0.96
Unemspell4	1.00	0.84	1.40 *	0.83	0.84
Unemspell5	1.15	1.26	0.47 ***	0.92	0.67
Wald chi square	398.38	327.55	1128.96	55.91	315.29
Log Likelihood	-2576.03	-4843.53	-6448.71	-1749.42	-3966.62
Observations	2195	4070	5194	1694	3269

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 10. Absence of Physical and Mental Health Problems Logistic Regressions, 45-70 Years Age Group

<i>Independent Variables</i>	<i>Absence of Physical or Mental Health Problems, 45-70 Years Age Group</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Unemployed	0.28 ***	0.63 **	1.22	0.31 ***	0.78
Income Quintiles	1.21 ***	1.13 ***	1.19 ***	1.09	1.17 ***
Income Deprivation	1.00	0.71 ***	1.00	0.66	1.01 *
Unemspell2	1.56	1.20	0.56 *	0.99	1.19
Unemspell3	1.85 **	1.29	0.64	1.41	0.78
Unemspell4	2.23 *	0.64	0.69	0.47	1.06
Unemspell5	2.15 **	0.97	0.34 ***	0.40	0.58
Wald chi square	317.29	309.32	400.71	64.33	337.12
Log Likelihood	-1060.96	-2219.69	-2690.29	-848.17	-1368.58
Observations	2195	4070	5194	1694	3269

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 11. Principal Component of Health OLS Regressions, 45-70 Years Age Group

<i>Independent Variables</i>	<i>Principal Health Component, 45-70 Years Age Group</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
Unemployed	-0.62 ***	-0.37 ***	0.02	-1.01 ***	0.01
Income Quintiles	0.10 ***	0.09 ***	0.12 ***	0.02	0.08 ***
Income Deprivation	-0.01	-0.08 **	-0.0004	-0.59	0.003
Unemspell2	0.22 *	0.06	-0.17	0.07	0.04
Unemspell3	0.36 **	0.14	-0.30 **	0.17	-0.09
Unemspell4	0.24	-0.26	0.03	-0.32	-0.04
Unemspell5	0.39 **	0.04	-0.61 ***	-0.30	-0.38
R <sup>2</sup>	0.21	0.10	0.14	0.05	0.14
F-statistic	30.30	20.36	53.85	3.72	17.89
Observations	2195	4070	5194	1694	3269

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 12. Self Assessed Health Status Ordered Logistic Regressions, Employed Only Sample

<i>Countries</i>	<i>Self Assessed Health Status, Employed Sample</i>				
	<b>Denmark</b> <i>exp(coefficient)</i>	<b>France</b> <i>exp(coefficient)</i>	<b>Greece</b> <i>exp(coefficient)</i>	<b>The Netherlands</b> <i>exp(coefficient)</i>	<b>UK</b> <i>exp(coefficient)</i>
<i>Independent Variables</i>					
Income Quintiles	1.06 **	1.02	1.06	0.96	1.11 ***
Income Deprivation	0.98	0.90	0.99 ***	0.23 ***	0.99 ***
Unemspell2	1.04	1.06	0.94	0.92	0.83 **
Unemspell3	0.69 **	0.88	0.83	0.86	0.93
Unemspell4	0.72 ***	0.76 *	1.23	0.74	0.89
Unemspell5	0.57 ***	1.02	0.77	1.17	1.15
Wald chi square	177.59	208.33	609.90	197.43	180.77
Log Likelihood	-3148.05	-4466.26	-2712.92	-4290.38	-6109.04
Observations	3464	4066	3484	4417	5420

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 13. Absence of Physical and Mental Health Problems Logistic Regressions, Employed Only Sample

<i>Independent Variables</i>	<i>Absence of Physical or Mental Health Problems, Employed Sample</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Income Quintiles	1.06	1.02	1.19 **	0.98	1.21 ***
Income Deprivation	0.96	0.65 ***	0.99	0.22 ***	1.01
Unemspell2	1.45	0.79	0.56 **	0.92	0.86
Unemspell3	1.14	0.96	0.58 **	0.94	0.64
Unemspell4	0.63 **	0.64 *	0.72	0.82	0.93
Unemspell5	0.68	0.87	0.79	0.51	1.06
Wald chi square	51.46	95.86	168.66	96.42	82.72
Log Likelihood	-1117.10	-1376.86	-673.69	-1833.43	-945.81
Observations	3464	4066	3484	4417	5420

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 14. Principal Component of Health OLS Regressions, Employed Only Sample

<i>Independent Variables</i>	<i>Principal Component of Health, Employed Sample</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
Income Quintiles	0.03 **	0.02	0.03 ***	-0.01	0.05 ***
Income Deprivation	-0.005	-0.10 ***	-0.001 ***	-0.81 ***	-0.002 **
Unemspell2	-0.01	0.002	-0.08	-0.02	-0.08 *
Unemspell3	-0.03	-0.06	-0.10 *	-0.06	-0.06
Unemspell4	-0.19 ***	-0.18 **	-0.01	-0.13	-0.04
Unemspell5	-0.20 **	0.01	-0.05	-0.24	0.03
R <sup>2</sup>	0.04	0.04	0.15	0.04	0.02
F-statistic	8.79	7.32	25.67	13.00	5.62
Observations	3464	4066	3484	4417	5420

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.



Table 15. Self Assessed Health Status Ordered Logistic Regressions, Unemployed Only Sample

<i>Independent Variables</i>	<i>Self Assessed Health Status, Unemployed Sample</i>					
	<i>Countries</i>	<b>Denmark</b>	<b>France</b>	<b>Greece</b>	<b>The Netherlands</b>	<b>UK</b>
		<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Income Quintiles		1.06	0.20 ***	1.05	1.37	1.14
Income Deprivation		0.89	1.14	0.99	77.81	0.99
Unemspell2		2.55 **	0.99	1.09	2.99 *	0.61 **
Unemspell3		2.44 **	0.95	0.73	1.19	0.46 ***
Unemspell4		3.15 ***	1.06	0.80	2.79	0.65
Unemspell5		2.30 **	0.73	0.56 **	0.85	0.29 ***
Wald chi square		72.89	93.09	221.78	28.71	40.78
Log Likelihood		-567.84	-983.35	-749.03	-128.56	-620.59
Observations		518	821	909	113	507

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 16. Absence of Physical and Mental Health Problems Logistic Regressions, Unemployed Only Sample

<i>Independent Variables</i>	<i>Absence of Physical or Mental Health Problems, Unemployed Sample</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>	<i>exp(coefficient)</i>
Income Quintiles	1.19	1.32 **	1.30 *	1.00	0.92
Income Deprivation	0.96	1.08	1.00	5.82	1.00
Unemspell2	3.11 *	1.25	0.78	5.16 *	2.54 **
Unemspell3	1.96	0.81	0.65	2.09	1.01
Unemspell4	2.00	0.76	0.43	0.97	1.71
Unemspell5	2.39 *	0.74	0.39 **	0.26	1.00
Wald chi square	40.82	66.16	69.42	22.63	33.39
Log Likelihood	-249.80	-349.40	-236.71	-57.62	-167.64
Observations	518	821	909	113	507

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.

Table 17. Principal Component of Health OLS Regressions, Unemployed Only Sample

<i>Independent Variables</i>	<i>Principal Component of Health, Unemployed Sample</i>				
	<i>Denmark</i>	<i>France</i>	<i>Greece</i>	<i>The Netherlands</i>	<i>UK</i>
Income Quintiles	0.05	0.13 ***	0.03	0.21	0.04
Income Deprivation	-0.05	0.07	-0.001	3.23	-0.003
Unemspell2	0.71 **	0.003	0.04	0.47	-0.01
Unemspell3	0.61 **	-0.08	-0.13	0.42	-0.31 *
Unemspell4	0.61 **	-0.04	-0.08	0.51	-0.04
Unemspell5	0.70 ***	-0.22	-0.30 **	-0.50	-0.44 **
R <sup>2</sup>	0.12	0.11	0.15	0.19	0.07
F-statistic	5.60	4.53	10.51	2.90	1.65
Observations	518	821	909	113	507

\* All regressions include controls for age, age<sup>2</sup>, female, married, divorced/widowed, educlevel1, educlevel2, social networks, time trend, and regional dummies. Due to space consideration, only the results on the variables of interest are presented. The full tables are available from the authors upon request. Income deprivation was divided by 10,000 in the case of Denmark, Greece, and the Netherlands, by 100 in the case of UK, and by 1,000 in the case of France. All regressions are estimated with heteroskedasticity-robust standard errors.

\*\* The signs next to coefficients indicate statistical significance: \*\*\* significance at 1%, \*\* significance at 5%, \* significance at 10% respectively.