

Health impact on the labour force

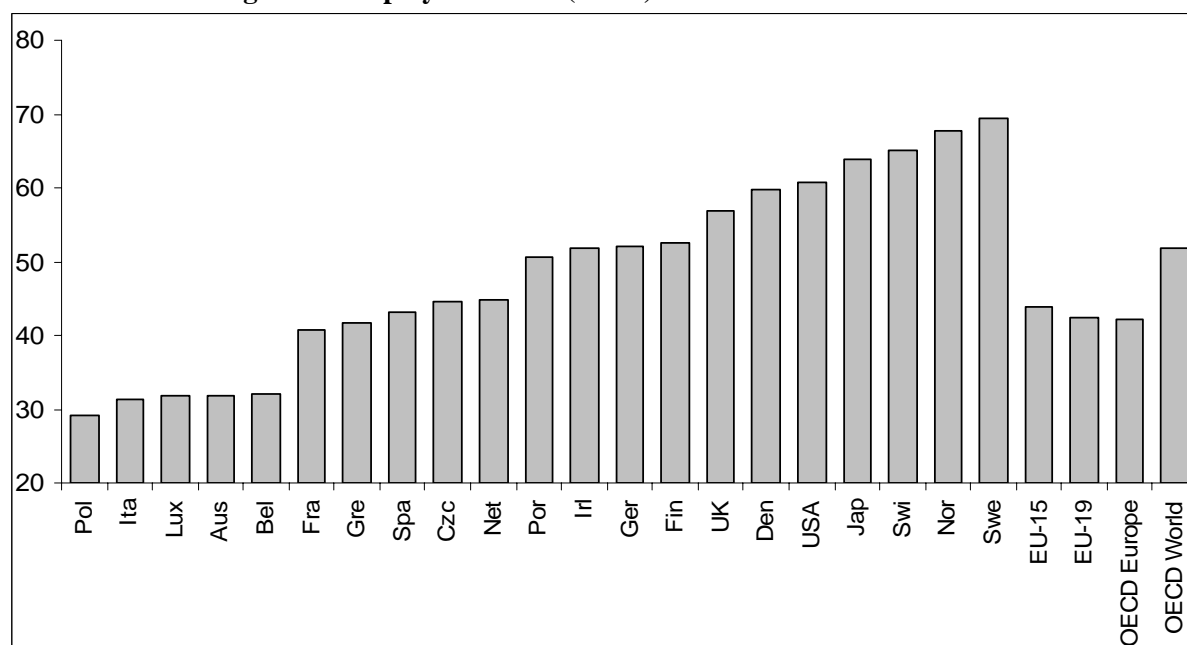
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For IRDES (Institute of Research and Documentation in Health Economics)

1. Decline in health status: an obstacle to increasing the retirement age in Europe

Every government in Europe is looking for ways to increase the number of over 50 year olds in work. This is because they wish to ensure the long-term financial viability of retirement systems hit hard by the baby-boom generation, which is now retiring in large numbers. The successive reforms of pay-as-you-go systems during the last ten years, whether they are moderate (France, Germany or the United Kingdom) or more radical (Sweden and Italy) have resulted overall in an increase in retirement age and tougher criteria governing access to early retirement. Nevertheless there are two contrasting approaches to reform: the Swedish and Italian models which have dispensed with the criterion of age in favour of the flexibility of an actuarial approach, and the German, British or French models which are making structural adjustments to enable, in particular, an increase in retirement age. Several European countries (Sweden, Switzerland, Denmark, the UK, Germany and Portugal) have already met the Stockholm conference (2001) objective of 50% of 55 to 64 year olds in employment by 2010. On the other hand the employment rate of older persons in France, Greece, Spain, the Czech Republic and the Netherlands is between 40 and 50%, and Poland is at the bottom of the league with rates below 30% (OECD, 2006).

Figure 1: Employment rate (55-64) in OECD countries in 2005



Source: OECD, 2006 (ranked by employment rate)

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Various factors may explain the weak employment rates of older persons: the nature of the labour market, cultural differences in managing the end of employment time and moving from work into retirement (approaches to accessing early retirement and weak incentives for pursuing professional activity), and also deterioration in health status. If the legal age of retirement is tending towards 65 across Europe, differences remain in the age at which people stop working. This was 61 on average across the 25 Member States in 2004. In Austria and France it was below 60, whereas in Greece and the UK it was equal to or above 63 (Eurostat, 2005). These differences in age at retirement may be explained by different mechanisms for early retirement, whether justified principally on economic grounds or those of old age or disability. These may consist of unemployment benefits, often through waiving the requirement to seek work (Belgium, Finland, France), or old-age pensions (Italy). Disability pensions are another route to early retirement (Austria, Luxembourg, Netherlands, Sweden and the UK), with disability benefits also being accessed through long term sick leave (Sweden, Norway). The classic routes to early retirement are gradually being abolished. It is still possible to retire early due to incapacity: physical incapacity (disability) where deterioration in health status results in a loss of earnings and hence eligibility for an disability pension; but also inability to work due to difficulty entering the labour market (often related to age) which “justifies” waiving the job seeking requirement, or enables early retirement. Here we consider the health status of older persons and in particular the relationship between health status and labour market participation, looking in particular at cardiovascular disease and mental health.

2. The interrelation between health and work: a brief review of the theoretical literature

In theory, the connection between health and work is clear but unravelling the causality is complex (Strauss and Thomas, 1998). It is the case that health status in part affects participation in the labour market (Currie and Madrian, 1999), but hard working conditions can also affect health status (Stern, 1980 and Leung and Wong, 2002). Here we present the first relationship.

In the economic literature health status is one of the most important determinants of labour supply among older workers (Lindeboom, 2006). Many empirical studies have demonstrated a selective effect of health on socioeconomic status (*healthy worker effect*). Hence deterioration in health status results in early departure from the labour market (Bound and *al*, 1999; Dwyer and Mitchell, 1999; Kerkhofs and *al.*, 1999; Campolieti, 2002). Rust and Phelan (1997) have shown that most individuals in bad health will stop working at 62 (the age at which they are entitled to benefits in the USA) while individuals in good health will retire later at about 65 years of age. Generally speaking the least favoured classes, which are also those whose health status has changed most, retire the earliest (Burtless and Moffitt, 1984). In France, studies of have shown that poor health greatly increases the risk of being excluded from work (Derriennic and *al*, 1996). We have shown elsewhere that deteriorating health reduces retirement age, after controlling financial and family constraints (Barnay, 2005). However, institutional and family constraints mean that those on low incomes are forced to reach the legal age of retirement (60 years in France and 62 in the USA) before receiving their benefits (Blanchet and Mahieu, 2001). Moreover, various forms of bias may affect the quality of measurement of this double causality between health and work. This reporting bias relate to the way in which information on health status is collected. This bias may result from financial incentives to claim disability benefits or from individual using illhealth as a reason retirement.

2.1 Problems with self reporting

Firstly declaration bias is inherent in this type of investigation, with individual declarations, which we have in most health surveys, being affected by social characteristics and by the health status of individuals (Bound, 1991; Anderson and Burckhauser, 1985). Thus some authors compile objective measures (such as mortality) using subjective measures of health status.

2.2 How measuring the “true” health status of populations?

The difficulty of measuring the “true” health status of individuals results in a second type of bias: measurement bias. As Sermet (1993) emphasises, self reported morbidity is only a part of perceived morbidity, which in turn is only a part of “true” morbidity. Added to the problem of determining true morbidity is the choice of indicator for measuring the interrelation between health and work. The most natural indicator for measuring this would appear to be disability (often presented in surveys as *restrictions in Activities of daily living, activity daily living ADL or Instrumental activity daily living IADL*). However this indicator only covers one aspect of health, and it therefore makes sense to use several health status indicators to measure their impact on employment, in order to take into account the multidimensional nature of health (Loprest and al, 1995).

2.3 Specific features of the over 50-year-old population

Furthermore studying the over 50 year old population further complicates the analysis because older persons face severe constraints on the labour market (difficulties to find job), and may cease work in order to take advantage of early retirement or disability pensions with better replacement rates than retirement pensions. This may be termed incentive bias, and is not necessarily related to health status. These constraints are essentially related to the “employability” of older persons and the attitude of businesses in this regard. Finally, there may be justification bias, whereby individuals explain their departure from employment in terms of health problems rather than redundancy, which tends to over emphasise the health work interrelation (Brenner, 2001).

3. Health and work interrelations: empirical evidence from SHARE data

The Survey of Health, Ageing and Retirement in Europe (Share) is a multidisciplinary and cross national data base of micro data on health, socio-economic status and social and family networks of individuals aged 50 or over. Eleven countries have provided micro data (Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain, Italy and Greece) for the first wave in 2004².

3.1 Differences in employment in Europe

On average, the employment rate of 50 to 64 year olds is 51.8% for this group of countries. This proportion varies from 32.7% in Austria to 73.9% in Sweden³. These values correspond to those given elsewhere in employment rates published by Eurostat. We can discern two models here: a north European model of employment with employment rates above 60% (Sweden, Denmark and Switzerland) and a southern model characterised by a large population out of work (employment rates below 50%) and a high proportion of people at home.

² The SHARE data collection has been primarily funded by the European Commission through the 5th framework programme (project QLK6-CT-2001-00360 in the thematic programme Quality of Life). Additional funding came from the US National Institute on Ageing (U01AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, Y1-AG-4553-01 and OGHA 04-064).

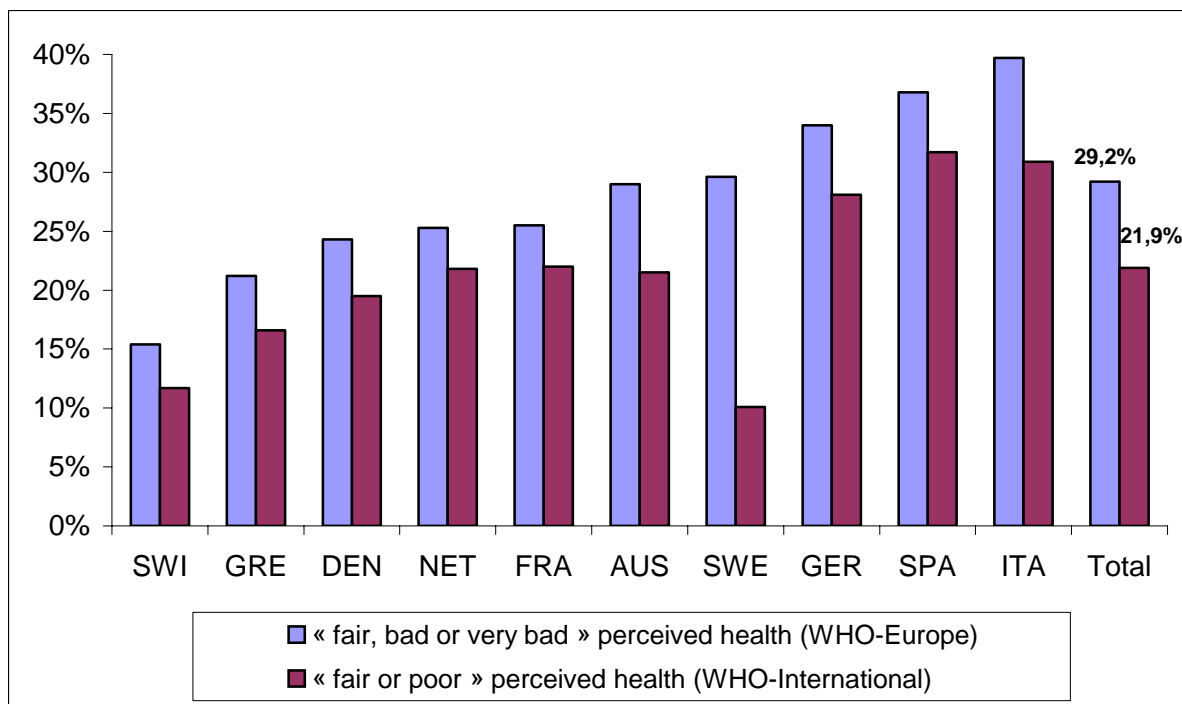
³ In these countries, on average the effective age of retirement is 58.8 in Austria and 63.1 in Sweden.

3.2 Health differences in Europe

Disparities in health in Europe vary widely depending on the indicator chosen. Analysis of these inequalities using perceived general health reveals a substantial gradient from north to south with poorer health in the countries of the south. The European Office of the WHO has suggested a standardized question (WHO and Statistics Netherlands, 1996): “*How is your health in general?*”, with five levels of response “*very good, good, fair, bad, very bad*”. The international office of WHO provided another indicator with the same question but with different answer items “*excellent, very good, good, fair, poor*”.

The proportion of the self-reporting poor health population considerably differs depending on the indicator selected. On average, 29.2% of the population report average, “fair, poor or very poor health” (Europe scale). Switzerland has the lowest proportion: 15.4%, followed by Greece (21.2%). In contrast other countries report considerably “worse” health status, this being the case in Germany (34%), Spain (36.8%) and in Italy (39.7%). If we analyse these differences using the second indicator of perceived health, about one fifth (21.9%) of the population reports “fair or bad” perceived health status. The north/south gradient is more or less the same (except for Sweden where there are important differences between indicators) and the differences are a little greater (from 10.1% in Sweden to 31.7% in Spain).

Figure 2: Perceived Health in European countries (50-64)

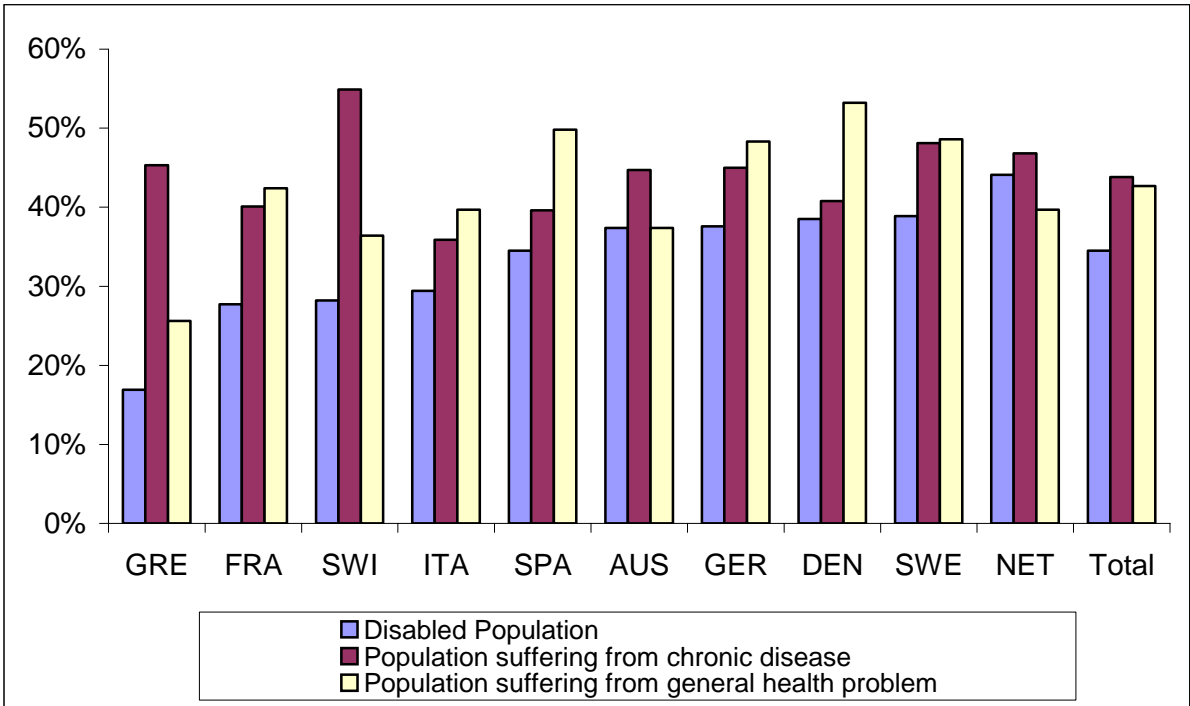


Sources : Share, 2004. Irdes calculations (ranked by prevalence of WHO-Europe perceived health indicator)

Indicators of restrictions in activity enable us to determine or at least estimate the capacity of individuals to participate in the labour market. Approximately one third (34.5%) of the European population aged between 50 and 64 is restricted in activities of daily living. The gradient described above is completely reversed. The Mediterranean countries and Switzerland are characterised by less restriction in activity (16.9% in Greece, 27.7% in France, 28.2% in Switzerland and 29.4% in Italy) whereas the Scandinavian countries have rates above 35% (up to 44.1% in the Netherlands). These results may be subject to justification bias. Individuals may be inclined to declare restrictions in activity in order to obtain an disability pension. This assumption could explain the contrasting results for

different health indicators, and also highlights the difficulty of evaluating the “true” health of populations using declared indicators for households. Lilja (1996) and Dahl and *al.*(2000) have shown that in a period of strong recession, there is increased uptake of disability pensions in Scandinavian countries but this is not related to any particular deterioration in health status. Moreover, others indicators can be used to measure health status: for example disease prevalence and general health problem. Suffering from at least a disease doesn’t give *a priori* an indication on the capacity of work nor of indication on the date of appearance of the disease. Diseases such as the diabetes or cholesterol concern more food practices or genetic heritages and are very generalized. 56.2 % of the European population declares to suffer from at least a disease and this proportion varies from 45.1 % in Switzerland to 64.1 % in Italy. Swedish and Dutch seem less often sick than Italian, Spanish or French.

Figure 3: Severe or moderate disability, chronic disease and general health problem in European countries (50-64)



Sources : Share, 2004. Irdes calculations (ranked by prevalence of disabled population)

This first statistical analysis of health in Europe leads to coherent results with a north/south hierarchy. However, it is important to note that it does not take into account the age structures, sex or occupational status differences between countries. However, it underlines exclusive operational limit of an indicator. Finally, reasons of these international disparities supposes the research deepened on health systems (diseases prevention, tracking, care access and recourse) or the practices cultural and food by considering on measurement problems and cultural skews specific to the exercises of international comparison.

3.3 Health and the employment of older persons in Europe ⁴

The statistical interrelation between health and labour market participation in Europe shows that whatever health measurement tool is used, deterioration in health status leads to a reduction of the probability of employment for 50 to 64 year olds. 62.6% of men and 42.8% of women aged between 50 and 65 are employed in Europe. 27% of employed men declare

⁴ This paragraph is based in part on a communication of Barnay and Debrand (2005).

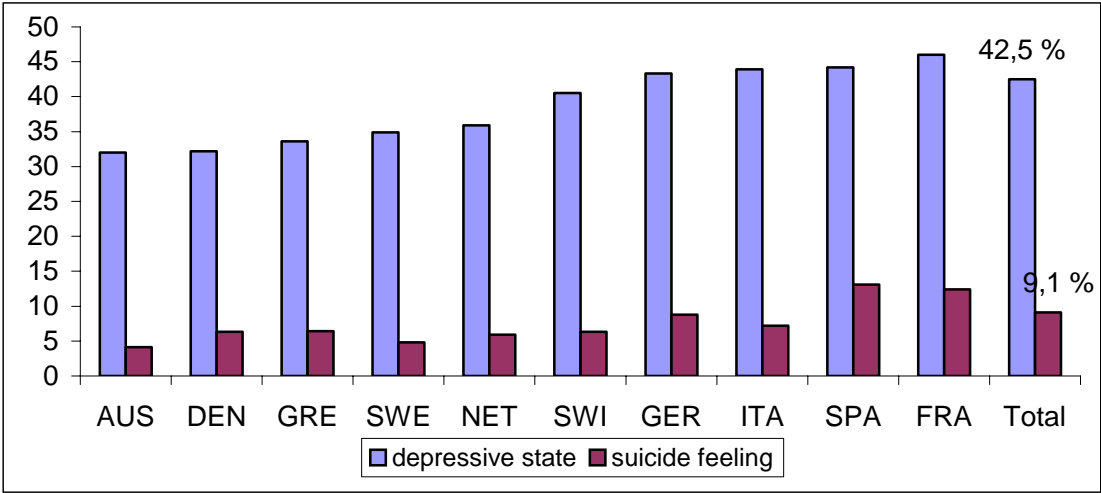
severe restrictions in their activity (24.1% of women). If we consider self reported illness, the employment rate ranges from 18.2% for men with Parkinson’s Disease to 58.8% for those declaring high cholesterol, while for women this is between 9.1% (Parkinson’s Disease) and 40% (asthma).

4. Mental health, cardiovascular illness and employment⁵

4.1 Mental health in Europe

Among elderly people, those with dementia are an important group, in view of their number and above all the fact that they almost double in incidence every 5 years. In Europe, dementia from whatever cause affects 6.4% of persons aged 65 or more. The two most common types of dementia, Alzheimer’s and dementia of vascular origin affect 4.4% and 1.6% respectively of persons in this age group. The prevalence of this condition⁶ increases with age, rising from 0.8% for 65 to 69 year olds to 28.5% for those aged 90 or more. Overall it is more common in women, above all at advanced ages. Although these results must be interpreted cautiously given differences in diagnostic criteria and small sample sizes, there nevertheless appear to be differences in prevalence between European countries. Thus, for persons aged 85 and over, the prevalence of dementia is 16.9% in Italy, 23% in the Netherlands, 29.8% in Sweden and 43.1% in Germany. At age 90 and over, it is estimated to be 14.3% in Italy, 26% in France and 40.7% in Japan (Ankri and al, 2003). The incidence⁷ among women ranges from 2.9 per 1000 persons per year for 65 to 69 year olds to 100.9 for women over 90. For men, the incidence ranges from 2 per 1000 persons per year to 53.9 for the oldest age group, while for women the incidence doubles between 85-89 and 90 years and older. For men there is very little change in incidence between these two age groups (Andersen and al, 1999; Lobo and al, 2000).

Figure 4: Prevalence of depressive state and suicide feeling in European countries (more 50)



Sources : Share, 2004. Idres calculations, ranked by prevalence of depressive state.

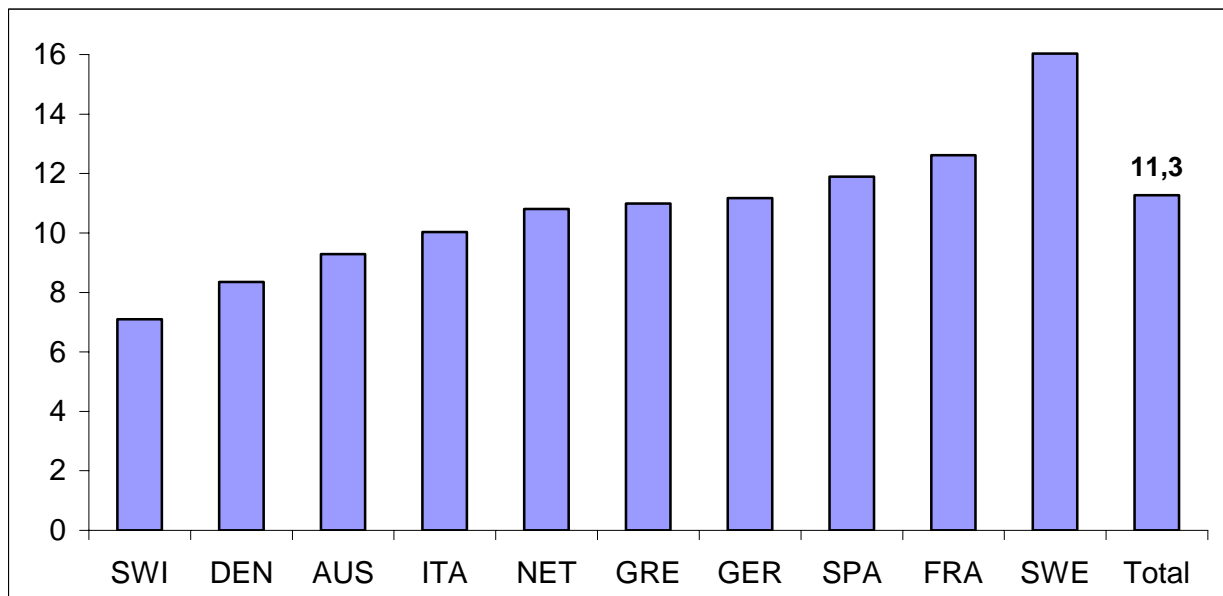
In SHARE, several indicators of mental health are available. The figure 4 shows the prevalence of depressive state and suicide feeling in Europe for population more 50 years old. On average, the prevalence of depressive state is equal to 42,5 % in the European population (between 32 % in Austria and 46 %in France) and the prevalence of suicide feeling

⁵ This paragraph is based in part on one chapter of an article by Barnay and Sermet to be published in 2007.
⁶ Prevalence is the number of cases of a illness at a specific point in time.
⁷ Incidence is the number of cases declared in a given period.

corresponds to 9,1 % varying from 4,1 % in Austria to 31,1 % in Spain. Mental health cut Europe in two specific parts : Mediterranean countries with high prevalence and Nordic countries with weak prevalence.

4.2 Cardiovascular disease in Europe

Figure 5: Prevalence of self reported cardiac disease in European countries (50-64)



Sources : Share, 2004. Irdes calculations, ranked by prevalence

There is relatively a few data with which to compare the frequency of cardiovascular disease in elderly persons in Europe. Most of the analyses carried out are based on mortality or on the MONICA study, which examined the incidence of cardiovascular disease in a younger population, aged between 35 and 64.

According to SHARE, if we only consider potential active population (50-64 years old) 11% of Europeans declare cardiac disease of any type - coronary insufficiency, chest pain, myocardial infarction or cardiac insufficiency - diagnosed by a doctor. The Swiss and the Danes declare the lowest prevalence of cardiac disease, 7.1% and 8.4% respectively, and the Swedes the highest at 16%. In the other countries, the prevalence of cardiac disease ranges from 9% to 13%. Rather surprisingly, this self reported illness does not correspond exactly to mortality data. Hence France and Spain are the two countries with the lowest overall cardiovascular mortality, but these countries report more or less average levels of self declared cardiovascular illness. Many factors could explain these differences. Apart from the usual forms of bias in surveys, and in particular declaration bias between countries, differences in population age structure and the capacity of health systems to treat and to improve survival in patients with chronic illness probably explain the variation observed.

4.3 The interrelation between cardiovascular disease and employment in Europe ⁸

According to SHARE, cerebrovascular accidents (strokes) affect 2.4% of men and 1.7% of women between 50 and 65 years old. 8.2% of men and 4.6% of women of this age declare a cardiovascular disease. Cerebrovascular accidents in particular affect individuals' capacity to participate in the labour market, with only 28.1% of men and 21.6% of women in employment. Moreover, 42.1% of men and 33.8% of women affected by cardiac disease are

⁸ This paragraph is based in part on an article by Barnay and Debrand (2006).

in employment, (compared to 62.6% and 42.8% respectively for the European population of 50 to 65 year olds). It is necessary to control for the other socioeconomic variables (age, education level and marital status) in order to carry out a more detailed analysis of the interrelation between cerebrovascular accidents and employment rates of older persons in Europe. Hence, self-reporting a cerebrovascular accident reduces the probability of being in employment by 21 points for men (17 for women) compared to those not declaring this, after controlling for age, education level and marital status. Similarly, reporting a cardiac disease reduces the probability of being in work by 9 points for men (11 for women) compared to those reporting no such disease, all other things being equal. Cerebrovascular accidents have the most significant impact on the employment of older persons, for both men and women.

5. Conclusion

From now on, incapacity becomes the main reason for early retirement. This trend is clear from the mechanisms proposed for physical incapacity (disability pensions) and likewise for inability to enter the labour market, the two being clearly related, which is resulting in some confusion in the roles of sickness insurance and of unemployment benefits. Viebrok (2003) has shown this for the German system, but it applies to European cases also. European countries appear to be moving away from a model of incapacity towards one based on capacity, with two objectives in mind: to get handicapped persons into the labour market, and to compensate handicap where this has become too disabling for a decent income. However as long as the income available for inactivity is higher than that which may be earned in the labour market, there is a strong disincentive to work, which remains the case in the Scandinavian countries in particular.

If the objective is to increase the employment rate of over 50 year olds, it would seem necessary to regulate the range of mechanisms available to facilitate early retirement in order to avoid any possible substitutions, and ahead of this to propose measures to encourage older people to return to work and to improve working conditions. Furthermore such preventive policies could help to improve the health of older workers and help them to remain in work.

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