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The impact of immigration on health, longevity and dependency of the elderly in the Spanish and European population

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July 2009

Ph.D. Dissesrtation. Years 2005-2007
Program: Doctorat en Estudis Empresarials. Especialitat en Ciències Actuarials i Financeres.
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Chapter 2

Gender differences in Health in 11 European countries: Results from the Survey of Health, Ageing and Retirement in Europe

While research reports that females universally experience longer life expectancy than males in countries with relatively low mortality (Nathanson, 1984; Murray and Lopez, 1996; Kinsella and Gist, 1998; Gjonca et al., 1999; Barford et al., 2006), there is less uniformity in reports of morbidity differences. Although the generalization was that women experience worse health but lower mortality than men (Verbrugge, 1984), this generalization arose from analyses of health surveys collected from the 1960s through 1980s when the indicators of health were limited to self-reported health, functioning problems and disability. More recent analysis using a wider range and more

nuanced indicators of health has shown that morbidity differences between men and women differ across some other dimensions of health (Macintyre et al., 1996; Macintyre et al., 1999; Rieker and Bird, 2005; Case and Paxson, 2005; Gorman and Read, 2006).

Research findings agree that women report more disability and problems with physical functioning (Gorman and Read, 2006). For other dimensions, gender differences are less clear-cut. Generally, women report a higher prevalence of diseases and conditions that are not-fatal but are debilitating or acute such as arthritis, asthma, depression, and cognitive loss; men, on the other hand, report higher prevalence of some diseases which are major cases of death such as cardiovascular conditions (Verbrugge, 1982; Verbrugge, 1984; Verbrugge, 1985; Case and Paxson, 2005; Rieker and Bird, 2005). Men appear to have more of these life-threatening diseases at earlier ages with a reduction in the gap at older ages (Macintyre et al., 1999; Rieker and Bird, 2005; Gorman and Read, 2006). But the gap in cardiovascular risk factors between men and women appears to be closing at an earlier age, at least in the United States (Kim et al., 2006).

Clearly, the gap between men and women in mortality and morbidity is not fixed over time. While women in every country now have higher life expectancy than men, in some countries the gap has been narrowing in recent years (Preston and Wang, 2006).

In European countries, gender differentials in individual characteristics such as health behaviours, education, employment and occupational experience, and social support contribute to both men's and women's health status (Lahelma and Arber, 1994; Braveman and Tarimo, 2002; Molarius et al., 2006), and vary across countries and over time. Men have become less

likely to work at physically challenging occupations while women have become more likely to work in the labor force. Such sweeping social changes could affect the relative health of men and women. Most research has led to the generalization that men tend to engage in more risky health behaviours such as heavy drinking and smoking (Denton and Walters, 1999; Courtenay et al., 2002; Barbeau et al., 2004; Denton et al., 2004), and the risk factors in changing gender differentials in mortality (Waldron, 1993; Waldron, 1995a; Waldron, 1995b; Waldron, 2000). Smoking patterns among both men and women have changed over time, which may be partly responsible for the change in life expectancy differences in recent years (Waldron, 1993; Preston and Wang, 2006). Men are also more likely to be overweight (Galuska et al., 1996), but at least in the U.S., women are more likely to be obese (Kim et al., 2006). Mortality and heart disease in men may be more related to fat consumption and/or weight (Lawlor et al., 2001). Changes in both the level of accumulated fat and the links between weight and morbidity and mortality could affect gender differences in health outcomes.

In this chapter, we take advantage of a relatively new survey from 11 European countries, the Survey of Health, Ageing and Retirement in Europe (SHARE), to examine gender differences in a number of dimensions of health including self-reported global health, functioning, the prevalence of diseases, and health behaviours. We also examine the role that differences in functioning loss and disease play in gender differences in self-reported health in these countries. This survey represents a unique opportunity to examine the similarity of gender differences in a sample of 11 European countries which have many similarities in social and economic circumstances but also significant differences in health behaviours by gender as well as cultural milieu.

2.1 Methodology

2.1.1 The SHARE Study

SHARE provides information on health, socio-economic status and social and family networks of individuals aged 50 and over in participating countries. The first wave of this survey was collected in 2004 and 2005 in 11 Continental European countries. The sample size for the 50+ population is 27,444. While each country conducted its own national survey using a common questionnaire translated into the appropriate languages; the Mannheim Research Institute for the Economics of Aging in Germany coordinates this collaborative effort. The names of the individual countries are shown in Table 2.1. The SHARE dataset is described in Börsch-Supan et al. (2005). Sampling designs vary across countries from a simple random sample of households to complex multi-stage designs (Börsch-Supan and Jürges, 2005). In four countries the sample unit was a household (Austria, Greece, Switzerland, and Denmark) and in the remaining countries individuals were the unit sampled. All persons 50+ in households contacted were included in the samples. Data are collected in personal interviews and proxies.

In comparing countries, we need to be mindful of some differences in the quality of the surveys. Household response rates vary markedly across the SHARE countries from a low of 39% in Switzerland to as high of 81% in France; and individual response rates range from 74% in Spain to as high of 93% in France (SHARE, 2007). In most countries, the response rate in SHARE for men and women were within two percentage points – with the

exception of Spain where the response rate for women was 34% and the response rate for men was 40% (SHARE, 2007). The overall response rate in SHARE is slightly lower than the response rate in two official Eurostat surveys but it is substantially higher than that generally achieved in scientific surveys (Börsch-Supan and Jürges, 2005).

2.1.2 The Sample

The total sample size, the average age, and the percentage female in each country are presented in Table 2.1. The sample size varies markedly across countries with the smallest sample in Switzerland (N=960) and the largest in Belgium (N=3,649). This must be kept in mind when examining statistical significance of results. The proportion of the sample by gender is quite similar across countries, with the percent female ranging from 60% in Spain to 53% in Belgium, Denmark and Switzerland. Mean age of the sample is highest in Spain (67.2) and lowest in Netherlands (64.1) and Belgium (64.2). When the proportions female and the mean age in these samples are compared to Eurostat population estimates, the mean age for those 50 and over reported in Eurostat in each of the countries is within half a year in 7 of the 11 countries. It is most different in Belgium (1.2 year lower age in SHARE sample), Italy (1.1 year lower) and Spain (1.3 year higher age in SHARE sample). The percent of females in the population estimates is also comparable: less than 2% difference from the SHARE sample except in Austria and Spain (2.3%, 5.5% more females in SHARE, respectively). The SHARE data have been found to be comparable to that of other European surveys in levels of health, education, income and employment (Börsch-Supan et al., 2005a; Buber, 2007).

2.1.3 Measures

SHARE sample members provide self-reported information on whether they have disease, disability and functioning problems, as well as health behaviours. Three indicators of problems are used with functioning and disability include self-reported difficulty performing at least one of 10 tasks related to mobility, strength and endurance which are known as Nagi activities (Nagi, 1976), difficulty doing at least one of 6 activities of daily living (ADLs) which represent ability to provide self-care, and difficulty with at least one of 7 instrumental activities of daily living (IADLs) which represent ability to live independently. ADL functions include walking across a room, getting in and out of bed, bathing or showering, eating (such as cutting up your food), dressing (including putting on shoes and socks) and using the toilet (including getting up or down). IADL abilities include using a map to figure out how to get around in a strange place, preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden and managing money, such as paying bills and keeping track of expenses.

In addition, information on the presence of 8 chronic diseases is reported in response to the question, "Has a doctor ever told you that you had any of the following conditions?" Chronic diseases include hypertension, diabetes, cancer, depression, lung disease, heart disease, stroke and arthritis. In SHARE data, cancers, other than skin cancer, that affect only women (breast, ovary, cervix and endometrium) account for 42% of reported cancers in the pooled sample; cancers that affect only men (prostate and testicular) accounted for another 14% of all cancers. The most common cancers (other than skin) that affect both men and women in SHARE are colon (13% in both

men and in women) and lung (7% in men and 2% in women). It is difficult to study these cancers using reports in surveys, because high mortality rates mean that many do not survive to report cancers.

Self-perceived health is assessed using the question, "Would you say your health is excellent, very good, good, fair or poor?" We group self-perceived health into two categories: excellent, good or very good health, and less than good health. While these indicators represent different domains of health, they are related. Some of the diseases are common causes of disability (Stuck et al., 1999; Spiers et al., 2005) and self-assessments of health are certainly based on the presence of diseases and disability (Deeg and Bath, 2003).

We also examine self-reported indicators of weight, smoking behaviour and health care usage. Information on self-reported of height and weight are converted into body mass index (BMI) which is divided into normal weight (BMI<25), overweight (25<=BMI<30), and obese (BMI>=30). Current smoking status is also examined. The health care use measure indicates that a person has seen or talked to a doctor at least once in the past 12 months. We are not as interested in the treatment-related use of health care but in the fact that some people who have not seen a doctor recently would not report the presence of conditions like heart disease and hypertension. Specifically, because we include a working age sample, men might be less likely to have regular contact with physicians and thus report disease differentially (Juel and Christensen, 2008).

2.1.4 Analysis

The age-standardized percent of men and women in each country with each health problem or behaviour and the significance of the difference with no controls are presented. In order to make comparisons across sex and across countries where the age-structures differ, the confounding effect of age by age standardization is eliminated using the direct method for age standardization along with a standard population for 2001 provided by Eurostat[1]. Age-adjusted prevalence rates are calculated using the SAS survey program and standardizing for age-groups 50-59, 60-69, 70-79, and 80+. The age-specific prevalence from each study population is multiplied by the proportion of people in that age group in the standard population, and the sum of the results to get the age-adjusted estimate[2].

Using the results from logistic regressions, the odds ratios from logistic regressions are presented to indicate the link between being female and the likelihood of having these behaviours and health problems with age controlled, and then with age, current and past smoking and being overweight and obese controlled. The odds ratio with smoking and weight controlled indicate the level of gender differences if these behaviours were the same for both men and women. Additional regressions on the disease presence variables to control for having seen a doctor or a general practitioner in the last year in order to eliminate the effect of gender differences in health care usage on reporting the presence of a disease or condition are performed. Because this is not a perfect control and because these regressions resulted in no differences in the results, they are not shown. Most of the analyses are

[1] http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/
[2] For details on this procedure refer to the tutorial:
http://www.cdc.gov/nchs/tutorials/Nhanes/NHANESAnalyses/AgeStandardization/age_standardization_intro.htm

based on logistic regression with dichotomous outcome. The confidence intervals for the odds ratios are also shown.

In the analysis of differences in self-rated health, I determine how gender is associated with self-rated health when men and women have the same level of functioning problems and diseases by examining the effect of being female once the presence of functioning problems, difficulties with ADL/IADL tasks, and all disease as well as age and health behaviours are controlled. This provides an assessment of whether men and women would assess their health differently if they reported the same level of functioning problems and disease prevalence.

All analyses are run with weights reflecting the probability of selection into the sample. Weights are constructed based on the original design and by comparing samples to other estimates of population characteristics including age and sex. These weights make the sample representative of the group from which they were selected.

2.2 Results

On the basis of self-reported height and weight, a higher proportion of males than females were overweight in each country although not significantly so in Spain (Table 2.1). France and Switzerland have the largest gender difference in the prevalence of self-reported overweight (16.3% and 18.2%) and Spain the lowest (2.7%). The odds ratios indicate that the odds of women being overweight are 24% to 53% of that of a man in these countries.

Table 2.1. Sample Characteristics by Country; Age-adjusted prevalence of Overweight, Obesity, Fair or Poor Self-Rated health; Current Smoker; Ever smoke and Seeing a Doctor in Last Year by Gender and Country, 2004; Odds Ratios of Being Female on Health Behaviors and Health Care Use

Country	Total N	Mean Age	% Female	Overweight (25<=BMI <30)			Obese (BMI>=30)			Fair or Poor Self-rated health		
				Males	Females	OR[1]	Males	Females	OR[1]	Males	Females	OR[1]
Austria	1,849	65.4	58.0	68.9	55.1*	0.55* (0.46-0.65)	17.2	19.9	1.19 (0.96-1.46)	37.5	41.5	1.18 (1.01-1.28)
Belgium	3,649	64.2	53.3	66.4	54.3*	0.59* (0.53-0.67)	18.7	17.7	0.93 (0.80-1.10)	30.6	34.9*	1.21* (1.04-1.41)
Denmark	1,615	64.6	53.1	59.3	44.5*	0.55* (0.45-0.67)	14.0	13.2*	0.94 (0.70-1.26)	30.2	32.3*	1.09 (0.88-1.36)
France	3,038	64.6	55.0	63.7	47.4*	0.51* (0.44-0.60)	14.7	16.2	1.11 (0.92-1.34)	39.6	38.0	0.92 (0.81-1.04)
Germany	2,941	64.5	54.9	67.4	55.2*	0.58* (0.49-0.69)	16.7	17.4	1.03 (0.82-1.29)	44.3	48.1	1.14 (0.96-1.35)
Greece	2,669	64.7	53.5	70.4	64.4*	0.76* (0.64-0.89)	16.1	21.3*	1.40* (1.15-1.71)	32.0	44.2*	1.80* (1.52-2.14)
Italy	2,508	64.9	55.4	67.1	54.4*	0.58* (0.49-0.68)	15.8	17.9	1.16 (0.94-1.42)	46.1	55.3*	1.48* (1.20-1.82)
Netherlands	2,865	64.1	53.9	61.5	52.9*	0.69* (0.59-0.82)	12.8	16.8*	1.36* (1.08-1.71)	31.5	34.3	1.13 (0.96-1.32)
Spain	2,353	67.2	59.9	70.3	67.6*	0.87 (0.70-1.08)	20.3	25.7*	1.36* (1.08-1.70)	41.9	53.7*	1.65* (1.36-1.99)
Sweden	2,997	65.4	54.3	60.2	49.1*	0.63* (0.55-0.73)	13.0	14.7	1.15* (1.01-1.31)	32.6	39.6*	1.35* (1.17-1.57)
Switzerland	960	65.2	53.3	60.0	41.8*	0.47* (0.36-0.62)	12.9	12.5	0.96 (0.65-1.42)	17.6	22.3	1.34 (0.96-1.87)
Total	27,444	65.3	54.2	65.3	54.0*	0.62* (0.59-0.65)	15.8	17.8*	1.15* (1.07-1.22)	36.0	41.5*	1.26* (1.18-1.36)

Source: SHARE, 2004 (individuals 50+).
OR: Odds Ratios from logistic regressions
[1]with age controlled
*males and females significantly different- p<.05

Continue Table 2.1

Country	Current Smoker			Ever Smoke			Health Care Use[2]		
	Males	Females	OR[1]	Males	Females	OR[1]	Males	Females	OR[1]
Austria	21.7	15.9*	0.67* (0.54-0.83)	48.7	27.7*	0.39* (0.32-0.48)	83.9	87.2*	1.30* (1.02-1.66)
Belgium	21.7	12.3*	0.49* (0.42-0.59)	70.1	28.8*	0.17* (0.14-0.20)	91.5	94.4*	1.57* (1.20-2.05)
Denmark	31.5	29.4*	0.93 (0.75-1.15)	71.7	57.8*	0.54* (0.44-0.67)	81.1	82.2*	1.06 (0.82-1.37)
France	19.1	9.5*	0.43* (0.35-0.52)	63.7	22.6*	0.16* (0.14-0.19)	91.5	95.6*	2.05* (1.53-2.74)
Germany	23.8	13.7*	0.49* (0.37-0.63)	62.4	27.6*	0.22* (0.18-0.27)	90.1	94.4*	1.88* (1.39-2.55)
Greece	32.6	17.9*	0.41* (0.34-0.50)	63.0	24.9*	0.18* (0.15-0.21)	74.4	83.3*	1.75* (1.44-2.13)
Italy	23.3	14.8*	0.55* (0.42-0.73)	62.9	29.0*	0.23* (0.19-0.30)	80.0	86.4*	1.60* (1.23-2.08)
Netherlands	26.6	21.0*	0.73* (0.64-0.84)	75.3	48.5*	0.30* (0.23-0.38)	78.9	84.7*	1.46* (1.22-1.74)
Spain	27.7	8.8*	0.22* (0.17-0.29)	66.6	14.1*	0.08* (0.06-0.10)	84.0	91.3*	1.96* (1.45-2.64)
Sweden	14.2	19.4*	1.49* (1.25-1.78)	60.1	49.7*	0.65* (0.57-0.74)	75.2	79.2*	1.25* (1.07-1.46)
Switzerland	19.8	18.8	0.95 (0.68-1.31)	53.8	34.7*	0.46* (0.35-0.60)	81.0	87.3*	1.59* (1.12-2.27)
Total	23.5	15.7*	0.60* (0.51-0.69)	64.4	32.4*	0.26* (0.21-0.31)	83.4	87.3*	1.51* (1.34-1.71)

Source: SHARE, 2004 (individuals 50+).
OR: Odds Ratios from logistic regressions
[1]with age controlled
[2]In the past 1 year
*males and females significantly different- p<.05

Significant gender differences in obesity were not as common; where significant differences existed, more women were obese than men (Netherlands, Greece, Spain, and Sweden). In most countries females are more likely to report their health as fair or poor.

In most countries, a higher percentage of men than women report themselves to be current smokers. The gender difference in the age-adjusted prevalence of current smoking is greatest in Spain where females have a very low rate of smoking (27.7% for males and 8.8% for females). Men are significantly more likely to smoke than women with age controlled in all but three countries: in Denmark and Switzerland, there is no gender difference in the odds of smoking. In Sweden, women are more likely to be current smokers than men. In all of these countries men are more likely than women to report being ever-smokers.

The vast majority of people in each county, both male and female have seen a doctor in the past year and in every country this percentage is higher for females. However, this difference by gender was not significant in Denmark.

ADL difficulties are not always more common among women although in most countries the prevalence is somewhat higher among women (Table 2.2). In 7 countries the differences between men and women are significant with women reporting more problems in 6 countries, but in French men report more ADL problems than women. On the other hand, functioning and IADL difficulties are more prevalent among women; these differences are statistically significant with and without controls for age in all countries (Table 2.2). The presence of some difficulty with functioning ranges from about a third to a half (31.0%-49.7%) among men and from a half to two-

Table 2.2. Age-adjusted percent with Functioning- ADL and IADL Difficulty by Gender and Country- 2004; Odds Ratios Indicating Effect of Being Female on Functioning- ADL and IADL Difficulties

	Functioning				ADL				IADL			
Country	Males	Females	OR[1]	OR[2]	Males	Females	OR[1]	OR[2]	Males	Females	OR[1]	OR[2]
Austria	45.8	57.4*	1.63* (1.39-1.92)	1.80* (1.49-2.17)	8.9	10.0	1.16 (0.88-1.53)	1.18 (0.89-1.57)	13.6	20.9*	1.81* (1.40-2.35)	1.88* (1.46-2.43)
Belgium	41.2	57.2*	2.00* (1.75-2.29)	2.46* (2.13-2.84)	10.7	15.4*	1.61* (1.28-2.02)	1.75* (1.38-2.22)	14.9	23.0*	1.86* (1.56-2.21)	2.11* (1.72-2.59)
Denmark	36.5	49.9*	1.79* (1.45-2.21)	2.05* (1.64-2.57)	10.8	10.3*	0.92 (0.66-1.29)	0.90 (0.64-1.28)	13.4	21.1*	1.84* (1.38-2.45)	1.88* (1.39-2.54)
France	39.9	57.1*	2.23* (1.98-2.50)	2.64* (2.29-3.05)	13.5	10.8	0.77* (0.62-0.97)	0.87 (0.67-1.12)	14.0	19.1*	1.56* (1.25-1.94)	1.50* (1.20-1.87)
Germany	49.7	59.6*	1.57* (1.35-1.83)	1.71* (1.45-2.02)	9.9	10.8	1.10 (0.81-1.48)	1.14 (0.81-1.60)	12.9	17.1*	1.45* (1.16-1.81)	1.45* (1.13-1.85)
Greece	45.5	63.5*	2.36* (2.01-2.81)	2.60* (2.15-3.14)	7.3	10.7*	1.63* (1.29-2.30)	1.86* (1.31-2.64)	12.2	24.8*	2.94* (2.28-3.64)	2.92* (2.23-3.83)
Italy	44.6	58.1*	1.83* (1.55-2.17)	2.21* (1.77-2.77)	10.7	12.3	1.20 (0.88-1.65)	1.24 (0.90-1.72)	10.3	18.6*	2.20* (1.64-2.94)	2.02* (1.44-2.82)
Netherlands	34.1	51.1*	2.14* (1.81-2.53)	2.21* (1.86-2.64)	7.5	10.0*	1.46* (1.12-1.90)	1.43* (1.07-1.92)	12.0	21.0*	2.11* (1.70-2.60)	2.07* (1.63-2.63)
Spain	43.5	62.4*	2.43* (2.00-2.96)	2.63* (2.06-3.38)	10.3	13.0*	1.36* (1.05-1.76)	1.31 (0.89-1.91)	17.1	27.2*	1.97* (1.61-2.42)	1.92* (1.41-2.61)
Sweden	36.1	53.1*	2.18* (1.87-2.54)	2.37* (2.03-2.77)	8.0	10.8	1.38* (1.11-1.73)	1.32* (1.03-1.69)	11.5	19.8*	1.99* (1.75-2.27)	1.98* (1.81-2.16)
Switzerland	31.0	46.4*	2.07* (1.55-2.75)	2.47* (1.80-3.39)	5.1	8.7*	1.82* (1.04-3.18)	2.13* (1.15-3.94)	5.4	11.6*	2.43* (1.44-4.11)	2.74* (1.53-4.89)
Total	41.3	56.8*	2.00* (1.89-2.12)	2.22* (2.08-2.37)	9.7	11.6*	1.25* (1.13-1.38)	1.28* (1.16-1.41)	13.1	20.9*	1.92* (1.76-2.08)	1.92* (1.77-2.09)

Source: SHARE, 2004 (individuals 50+).
OR: Odds Ratios from logistic regressions
[1]with age controlled
[2]with age, current and past smoking and overweight, and obese controlled
*significantly different from males- $p < .05$
Note: Nagi activities include walking one block- climbing several flights of stairs- climbing one flight of stairs- sitting for about 2 hours- getting up from a chair- lifting or carrying weights over 10 lbs- stooping- kneeling or crouching- picking up a dime from a table- reaching or extending arms- and pulling or pushing large objects; ADL functions include walking across a room- getting in and out of bed- bathing or showering- eating (such as cutting up your food)- dressing (including putting on shoes and socks)- and using the toilet (including getting up or down); IADLs include using a map to figure out how to get around in a strange place- preparing a hot meal- shopping for groceries- making telephone calls- taking medications- doing work around the house or garden- and managing money such as paying bills and keeping track of expenses.

thirds among women (46.4%-63.5%). The relative odds of having functioning problems for women ranged from 1.57 in Germany to 2.43 in Spain; those are controlled for age (OR^1). The relative odds of IADL difficulties among females ranged from 1.45 in Germany to 2.94 in Greece; those are also controlled for age (OR^1).

In order to see how gender differences in health behaviours mediate gender differences in the prevalence of functioning, ADL and IADL difficulties, I controlled smoking and overweight status in the logistic regression models (Table 2.2, OR^2). As would be expected given the higher odds for men to be overweight and smoke, this increased the effect of being female in the majority of the equations. This means that if men and women were alike in smoking behaviour and propensity to be overweight, the differences would be even larger than those observed.

Table 2.3 shows the percent of men and women who self-reported having 8 major chronic diseases in the 11 European countries as well as the odds of women having each disease when age is controlled (OR^1) and when health behaviours are also controlled (OR^2). Self-reports of hypertension are more prevalent among females in most countries; although the gender difference is significant in only 7 countries and the pooled sample for continental Europe. Swiss women are actually less likely to report themselves hypertensive than Swiss men. When health behaviours are controlled, the results are fairly similar; only in Switzerland the difference is eliminated, indicating that if men and women had the same health behaviours, women would have higher prevalence of hypertension in 6 countries.

Self-reported heart disease is less prevalent among females with the difference significant in every country except Spain. The odds ratios indicate

Table 2.3. Age-adjusted percent with Selected Diseases by Gender and Country- 2004; Odds Ratios Indicating Effect of Being Female on Having Selected Diseases

Country	Hypertension				Heart				Stroke				Depression[3]			
	Males	Females	OR[1]	OR[2]	Males	Females	OR[1]	OR[2]	Males	Females	OR[1]	OR[2]	Male	Female	OR[1]	OR[2]
Austria	27.9	33.3*	1.27* (1.05-1.55)	1.37* (1.13-1.66)	12.2	7.3*	0.55* (0.39-0.77)	0.58* (0.41-0.81)	5.2	3.5	0.64* (0.42-0.97)	0.70 (0.45-1.03)	13.1	25.4*	2.34* (1.86-2.94)	2.30* (1.82-2.89)
Belgium	29.1	34.0*	1.25* (1.09-1.43)	1.37* (1.16-1.61)	18.8	11.8*	0.55* (0.44-0.69)	0.71* (0.55-0.91)	3.9	4.2	1.07 (0.77-1.47)	1.18 (0.87-1.61)	17.4	33.1*	2.40* (2.10-2.75)	2.64* (2.33-3.00)
Denmark	31.4	28.6*	0.84 (0.68-1.05)	0.96 (0.76-1.21)	10.8	7.6*	0.64* (0.45-0.92)	0.68* (0.47-0.98)	6.5	4.6*	0.67 (0.43-1.04)	0.69 (0.44-1.08)	14.3	21.5*	1.66* (1.27-2.16)	1.78* (1.35-2.34)
France	26.2	31.2*	1.27* (1.08-1.49)	1.43* (1.22-1.68)	19.3	9.8*	0.43* (0.35-0.52)	0.44* (0.35-0.56)	3.7	3.5	0.93 (0.66-1.31)	0.92 (0.62-1.38)	24.3	40.8*	2.16* (1.90-2.46)	2.27* (1.98-2.62)
Germany	34.3	36.9	1.10 (0.92-1.31)	1.24 (1.01-1.51)	14.2	9.3*	0.56* (0.42-0.72)	0.63* (0.47-0.85)	5.5	3.1*	0.51* (0.33-0.79)	0.63 (0.37-1.05)	13.8	26.8*	2.40* (1.97-2.92)	2.47* (2.05-2.99)
Greece	31.4	40.1*	1.47* (1.25-1.74)	1.54* (1.28-1.86)	14.9	10.7*	0.67* (0.53-0.85)	0.70* (0.53-0.91)	4.1	3.5	0.84 (0.56-1.28)	1.03 (0.64-1.67)	14.5	34.0*	3.22* (2.63-3.93)	3.67* (2.92-4.61)
Italy	36.1	37.3	1.04 (0.82-1.31)	1.17 (0.92-1.48)	12.7	9.1*	0.68* (0.52-0.91)	0.74* (0.53-1.03)	3.8	2.5	0.63 (0.35-1.14)	0.78 (0.41-1.45)	26.0	42.8*	2.20* (1.77-2.74)	2.14* (1.69-2.71)
Netherlands	23.8	28.1*	1.24* (1.05-1.48)	1.26* (1.05-1.51)	14.7	8.9*	0.52* (0.38-0.72)	0.57* (0.41-0.79)	5.0	4.8	0.92 (0.66-1.27)	1.09 (0.73-1.63)	16.3	26.0*	1.83* (1.55-2.16)	1.84* (1.49-2.27)
Spain	27.2	36.5*	1.53* (1.26-1.86)	1.61* (1.29-2.02)	11.4	10.0	0.86 (0.66-1.13)	1.07 (0.77-1.49)	2.4	1.8	0.74 (0.42-1.29)	1.23 (0.45-3.36)	21.5	46.8*	3.35* (2.75-4.07)	3.43* (2.63-4.47)
Sweden	28.1	29.5	1.05 (0.87-1.28)	1.13 (0.93-1.36)	20.3	13.0*	0.55* (0.43-0.70)	0.57* (0.47-0.70)	6.3	3.6	0.53* (0.42-0.68)	0.52* (0.40-0.68)	13.1	26.8*	2.45* (2.19-2.73)	2.47* (2.22-2.75)
Switzerland	30.1	24.2*	0.72* (0.53-0.97)	0.84 (0.60-1.16)	9.5	5.4*	0.50* (0.29-0.85)	0.57* (0.31-1.01)	2.9	2.2*	0.72 (0.31-1.68)	0.95 (0.37-2.41)	12.1	24.8*	2.43* (1.70-3.47)	2.32* (1.59-3.39)
Total	29.6	33.4*	1.18* (1.07-1.31)	1.26* (1.13-1.41)	15.4	9.9*	0.58* (0.53-0.63)	0.63* (0.58-0.69)	4.5	3.5*	0.74* (0.64-0.84)	0.76* (0.66-0.87)	17.4	32.5*	2.34* (2.18-2.51)	2.35* (2.16-2.55)

Source: SHARE, 2004 (individuals 50+).
OR: Odds Ratios from logistic regressions
[1]with age controlled
[2]with age, current and past smoking and overweight, and obese controlled
[3] depression is based on 12 item EURO-D scale >=4
*significantly different from males- p<.05

Continue Table 2.3

Country	Diabetes				Lung				Cancer				Arthritis			
	Male	Female	OR[1]	OR[2]	Male	Female	OR[1]	OR[2]	Male	Female	OR[1]	OR[2]	Male	Female	OR[1]	OR[2]
Austria	10.1	7.0*	0.67* (0.50-0.88)	0.73* (0.55-0.98)	4.1	2.6	0.63 (0.38-1.03)	0.59 (0.34-1.03)	1.9	5.1*	2.80* (1.65-4.75)	3.00* (1.77-5.10)	8.1	13.1*	1.71* (1.30-2.24)	1.74* (1.34-2.26)
Belgium	7.6	9.3	1.25 (0.97-1.61)	1.30* (0.97-1.74)	6.7	5.0*	0.73* (0.56-0.94)	1.17 (0.89-1.53)	6.0	6.4	1.04 (0.78-1.37)	1.09 (0.81-1.46)	18.3	29.2*	1.84* (1.60-2.12)	2.01* (1.73-2.33)
Denmark	8.5	6.7*	0.77 (0.53-1.12)	0.83 (0.56-1.23)	8.7	7.0*	0.76 (0.52-1.11)	0.95 (0.64-1.41)	5.2	11.2*	2.38* (1.59-3.58)	2.52* (1.66-3.82)	20.0	32.5*	1.91* (1.52-2.42)	2.13* (1.67-2.72)
France	11.2	8.4*	0.72* (0.58-0.91)	0.73 (0.59-0.92)	6.7	5.2	0.75* (0.57-0.98)	1.00 (0.71-1.40)	5.8	5.9	0.98 (0.74-1.30)	0.91 (0.70-1.20)	24.1	36.4*	1.84* (1.58-2.13)	1.89* (1.60-2.25)
Germany	11.4	12.2	1.08 (0.84-1.37)	1.07 (0.83-1.39)	5.5	4.5	0.81 (0.55-1.17)	0.86 (0.58-1.27)	5.9	6.2	1.00 (0.69-1.44)	0.98 (0.66-1.44)	9.8	13.7*	1.46* (1.10-1.94)	1.40* (1.01-1.93)
Greece	8.9	9.4	1.05 (0.81-1.37)	1.13 (0.84-1.54)	3.7	3.5	0.94 (0.62-1.42)	1.15 (0.72-1.86)	2.3	2.2	0.98 (0.59-1.64)	1.02 (0.60-1.71)	10.8	24.7*	2.90* (2.31-3.63)	2.68* (2.08-3.46)
Italy	12.9	10.9	0.81 (0.61-1.08)	0.77 (0.58-1.02)	8.5	6.1	0.69 (0.48-1.00)	0.82 (0.56-1.18)	3.5	6.7*	2.19* (1.21-3.19)	2.20* (1.20-3.39)	21.5	38.6*	2.32* (1.90-2.84)	2.27* (1.82-2.82)
Netherlands	8.3	9.3	1.11 (0.90-1.38)	1.07 (0.85-1.34)	6.7	7.4	1.10 (0.88-1.38)	1.25 (0.96-1.62)	5.8	6.3	1.07 (0.75-1.52)	1.08 (0.76-1.52)	5.9	13.9*	2.64* (1.88-3.71)	2.76* (1.92-3.97)
Spain	15.4	13.3	0.84 (0.64-1.10)	1.04 (0.76-1.42)	7.1	3.9*	0.53* (0.35-0.79)	1.01 (0.60-1.70)	4.1	3.1	0.78 (0.47-1.27)	0.86 (0.49-1.52)	18.9	35.3*	2.39* (1.91-2.99)	2.20* (1.66-2.91)
Sweden	10.4	7.8	0.72* (0.53-0.99)	0.72 (0.51-1.03)	3.0	3.0*	1.01 (0.76-1.35)	1.03 (0.75-1.42)	6.8	7.9	1.17 (0.91-1.49)	1.22 (0.95-1.57)	6.0	13.7*	2.48* (2.14-2.88)	2.44* (2.15-2.76)
Switzerland	7.5	4.1*	0.50* (0.28-0.89)	0.71 (0.38-1.34)	2.8	3.7	1.30 (0.61-2.76)	1.57 (0.71-3.50)	6.2	4.6*	0.69 (0.39-1.24)	0.68 (0.37-1.23)	7.9	15.6*	2.26* (1.45-3.52)	2.80* (1.73-4.54)
Total	10.3	9.4	0.89* (0.81-0.99)	0.91 (0.82-1.01)	5.9	4.8*	0.79* (0.71-0.89)	1.00 (0.89-1.12)	5.0	5.9*	1.18* (1.02-1.38)	1.19* (1.01-1.40)	14.1	24.7*	2.02* (1.84-2.22)	2.01* (1.83-2.21)

Source: SHARE, 2004 (individuals 50+).
OR: Odds Ratios from logistic regressions
[1]with age controlled
[2]with age, current and past smoking and overweight, and obese controlled
[3] depression is based on 12 item EURO-D scale >=4 for SHARE
*significantly different from males- p<.05

that heart disease is about forty percent as likely to be reported by females in most European countries. These differences are very stable and do not change with the introduction of controls for health behaviors.

Gender differences in the prevalence of stroke are not significant in most of the continental European countries. Men are significantly more likely to have had a stroke in three SHARE countries and the pooled European sample. When health behaviours are controlled, the results were only significant in the pooled European sample and Sweden. Depression is more prevalent among females in all countries and for gender differences is significant in all countries. Women in every country are significantly more likely to report depressive symptoms with odds ratios ranging from 1.66 in Denmark to 3.35 in Spain. When health behaviours are controlled, the differences are still significant in the same countries, indicating that if men and women had the same health behaviors, women would have higher prevalence of depression in all countries under study.

Diabetes is significantly more common among men in four countries in Europe (Austria (OR=.67), France (OR=.72), Sweden (OR=.72) and Switzerland (OR=.50)) and the pooled European sample. With controls for health behaviours, gender differences in the odds of having diabetes were no longer significant in Sweden or Switzerland or the pooled European group indicating that they may have arisen from higher levels of overweight among men.

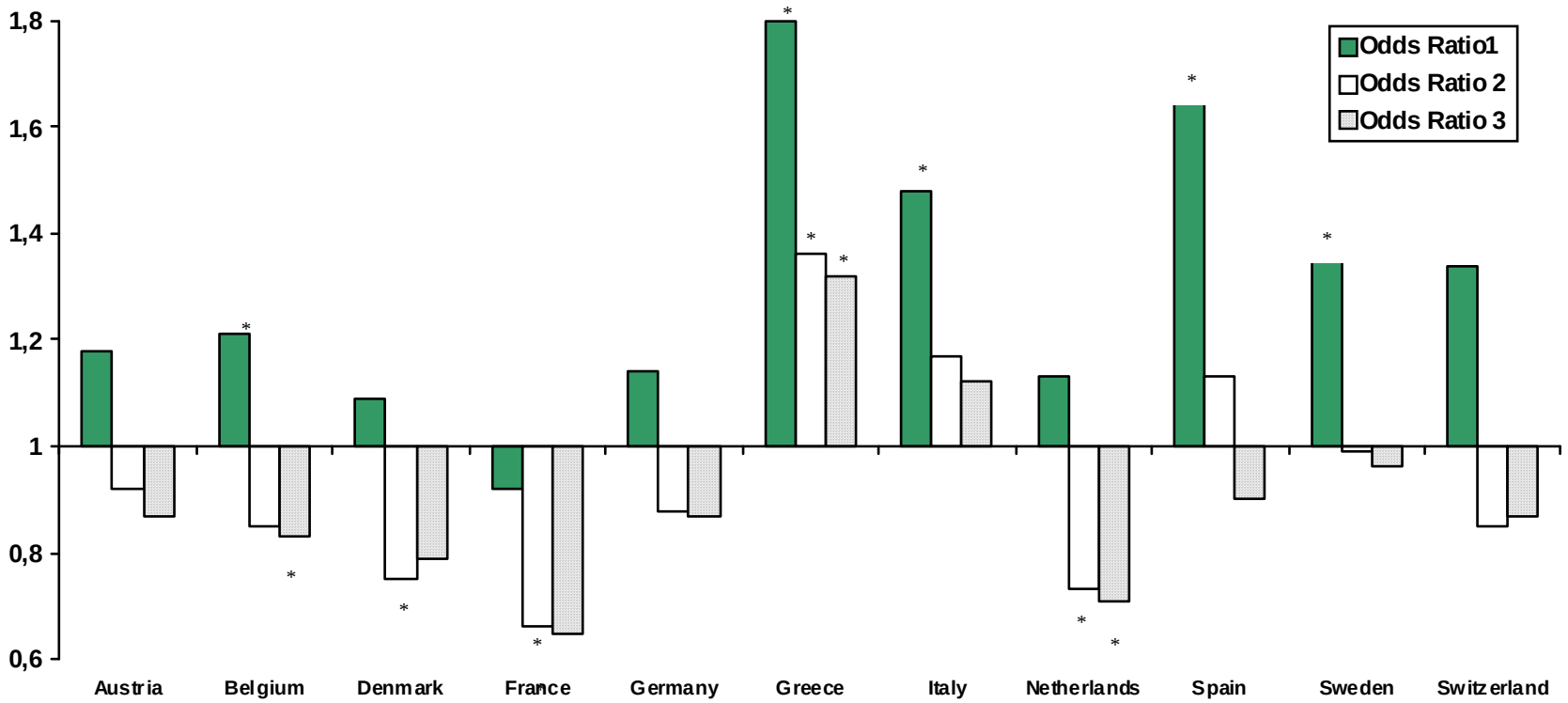
Self-reported lung disease does not differ by sex in most countries; however, it is significantly more common among men in three countries: Belgium (OR on female =.73), France (OR on female =.75), and Spain (OR on female =.53). Controls for smoking and being overweight eliminate the

significance of these gender differences. Being female is related to an increased odd of having had cancer in Austria (OR=2.80), Denmark (OR=2.38) and Italy (OR=2.19). The significant differences remain with controls for smoking and weight.

Arthritis is significantly more likely to be reported among females in all countries. The odds ratios indicate that the relative odd of females reporting arthritis are in the range of 1.46 in Germany to 2.90 in Greece. As expected, this is not affected much by controls for age and health behaviours.

I now turn to gender differences in self-rated health or subjective assessment of overall health (Figure 2.1). Self-reported health differs from other aspects of health examined to this point in that is reflects an overall assessment of one's health based on the presence of chronic conditions, both physical and mental, and functioning problems (Liang et al., 1991). It may also be affected by age, education and other social circumstances. This analysis is designed to determine the effect of gender differences in disease presence and functioning on self-assessed health. As with earlier health outcomes, first I examine gender differences with only age controlled (Table 2.3); then I examine change in the odds ratio when first functioning and then the presence of the chronic diseases and depressive symptoms are controlled. With only age-controlled, a higher percentage of females than males in 5 countries reported having poor or fair health (Figure 1). When indicators of functioning were added to the equation, the odds of females rating their health poorly were higher only in Greece and males rated their health worse in 3 European countries (Denmark, France and The Netherlands). When diseases were added, the effect of being female did not change markedly. This means the greater odds of women reporting poorer health are explained in large part by differences in functioning and disability; and that if men and women had

Figure 2.1. Odds Ratios Indicating Effect of Being Female on Reporting Fair or Poor Self-Rated Health



Source: SHARE, 2004 (individuals 50+).
Odds Ratio 1: with age controlled
Odds Ratio 2: with age, functioning and ADL/IADL controlled
Odds Ratio 3: with age, functioning, ADL/IADL and diseases controlled
* p<.05

the same disabilities and diseases; it is more likely that men, rather than women, would report worse health.

2.3 Discussion

The question we set out to answer was "how does the health of men differ from that of women in 11 European countries?" From this data, one can conclude that gender differences in some conditions are quite large and regular across these countries. Women in late middle-aged and older have worse functioning and higher disability than men; but that differences in disease presence are not as well predicted by gender. Arthritis is clearly higher among women; this may reflect women's greater susceptibility to inflammatory conditions. Women are also more likely to report depressive symptoms across these countries.

On the other hand, self-reported heart disease is higher among men across countries and this may reflect a greater susceptibility of men to heart disease. The differences between the genders in stroke and diabetes were not as regularly observed as the above differences; although more men tended to report both of these conditions. It appears that without gender differences in weight, there would not be significant gender differences in diabetes in these European countries. Most countries had no differences in lung conditions and where they existed, they were at least partly the result of smoking differences. The lack of gender differences in the prevalence of stroke is also interesting. Stroke has been thought to be more common among men but recently there has been a surge in stroke among women in the U.S. (Towfighi et al., 2007). The similarity among middle-aged and older men and women in stroke in European countries may be related to the reported higher prevalence of hypertension among women in many countries. Many of the earlier studies

that have concluded that men are more likely than women to have hypertension have been based on younger samples than those studied here (Wolf-Maier et al., 2003). Clearly, the idea that women need to be regularly screened and treated for hypertension at the same ages as men needs to become part of public health policy.

Hypertension is also less clearly different by gender; although where there are differences; women tend to have more hypertension. A higher prevalence of hypertension among females may reflect a recent change in gender differences in hypertension. In the U.S., recent increases in hypertension among women have resulted in approximately ten year reduction in the age where hypertension is equal for men and women and an increase in hypertension for women above that age (Kim et al., 2006). This indicates that some of the differences that were once assumed to have solely a biological basis must also have a social and behavioural component. It also emphasizes that our findings are relevant to not only a particular age group but a particular set of cohorts and gender differences can vary both by age and by cohort.

There is little consistent difference in self-rated health between men and women. According to the results, women's poorer self-rated health is partly related to poorer functioning and this has important public health implications. Appropriate preventive interventions could lead to improved functioning, and enhanced well-being. Interventions to prevent falls and the provision of devices to improve performance of daily activities might be inexpensive but effective in improving both men's and women's functioning, self-rated health and overall health status.

While the eleven countries examined here are remarkably consistent in the gender differences observed, there are several countries where some

differences are notable. Swedish females smoke more than Swedish males; and the current level of smoking is very similar among Danish and Swiss men and women. On the other hand, very few women in France or Spain smoke now or smoked in the past.

France is the only country where females have a lower probability of having ADL difficulties as well as reporting poorer health status. Gender differences in the prevalence of cancer are also notable in some countries, but not others. While 8 out of 11 countries have similar cancer prevalence for males and females, females in three countries are more than twice as likely to have had cancer as males. The relative level of cancer between men and women obviously depends on the distribution of some types of cancer (Bray et al., 2002).

I have reported my findings mainly based on self-report of the presence of health conditions; however, the reliance on self-reported health conditions is one of the limitations of this study. My conclusions depend on whether men and women report accurately their conditions and report their functioning and disability in the same way. In general, research has shown relatively high agreement between the self-report and medical record report of some common medical conditions (Bergmann et al., 1998).

Another limitation of this study is that it is based on cross-sectional differences. Without longitudinal data it is not possible to understand the processes that led to the observed differences in prevalence. All of the people interviewed are survivors to the age of interview. Because of mortality differentials women are more likely to survive to a given age than men.

Comparable surveys across a number of countries allow us to make generalizations that cannot be made with isolated surveys in individual countries. These 11 surveys provide convincing evidence that gender differences at ages 50 and older in many aspects of health are similar across countries in Northern and Southern Europe and in a variety of cultural circumstances. A number of differences fit in with the conclusions that women are more likely to have conditions that disable you but men to have conditions that kill you. But patterns of differences in other diseases do not allow this conclusion.

Studies that examine differences in health status across countries (Jürges, 2007) not only increase our understanding of cross-cultural differences in health status and their connection with health behaviours, but they also provide evidence that some gender differences may transcend cultural differences. They also provide evidence of the potential for the design of health care policies and services to address health problems common among males and females in various countries.