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ORIGINAL ARTICLE

Self-perceived health among Eastern European immigrants over 50 living in Western Europe

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Abstract

Objectives This paper examines whether Eastern European immigrants aged 50 and over living in Northern and Western Europe face a health disadvantage in terms of self-perceived health, with respect to the native-born. We also examined health changes over time (2004–2006–2010) through the probabilities of transition among self-perceived health states, and how they vary according to nativity status and age group.

Methods Data were obtained from the Survey of Health, Ageing and Retirement in Europe (SHARE). Logistic regressions and probabilities of transition were used.

Results Results emphasise the health disadvantage of Eastern European immigrants living in Germany, France and Sweden with respect to the native-born, even after controlling for socio-economic status. Probabilities of transition also evidenced that people born in Eastern Europe were more likely to experience worsening health and less likely to recover from sickness.

Conclusions This paper suggests that health inequalities do not affect immigrant groups in equal measure and confirm the poorer and more steeply deteriorating health status of Eastern European immigrants.

Keywords Self-perceived health · Eastern European immigrants · Europe · SHARE · Probabilities of transition

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Introduction

Following the Second World War, mass migration from Eastern Europe to the West definitely influenced the size and structure of international flows. Despite the presence of the Iron Curtain, nearly "12 million people were able to leave their Eastern European home countries between 1950 and 1990" (Fassmann and Münz 1992), and many immigrants from areas of political crisis in Eastern Europe, such as Poland, Czechoslovakia, Hungary, and the states of the former Soviet Union, settled in Western Europe. These flows are also explained by the emigration of people belonging to ethnic and religious minorities such as Jews, ethnic Germans and Hungarians, Muslims, etc. (Münz 1995). The demise of the communist regime and consequent opening of borders between Eastern and Western Europe at the end of the 1980s also marked the beginning of a new large-scale process of migration affecting Europe as a whole (Salt 1989).

One strand of the demographic literature shows that immigrants and minority groups in later life tend to have poorer health than the majority population (e.g., Solé-Auró and Crimmins 2008; Nielsen and Krasnick 2010). Several studies have demonstrated the poorer health status of Eastern Europeans compared with Westerners (Witvliet et al. 2014; Lanari and Bussini 2012). Carlson (1998) showed that mens' perceived health in Eastern Europe was about 25 % lower than in Western Europe, and the east–west gap increases for women, being on average about 29 % worse than that of Western women. Weziak-Bialowolska (2014) recently showed that people living in central-eastern European countries are more likely to report poorer self-rated health than those in the West. The relative importance of the heterogeneity of immigrants in explaining health differentials according to country of

origin was also highlighted for France by Vaillant and Wolff (2010), showing that immigrants from Eastern Europe have poorer health. Ronellenfitsch and Razum (2004) demonstrated that the perceived health status of immigrants from Eastern Europe living in Germany was worse than that of native-born Germans, independently of their improved socio-economic status. Nor are subjective health indicators the only ones which differ. Analyses of mortality rates have revealed a widening gap between Eastern and Western Europe since the 1970s, especially after the transition period (Boback and Marmot 1996). The situation of older Eastern European people thus deserves attention, because the "healthy migrant effect" model does not apply, in view of the health disadvantages experienced in their countries of origin before they travelled to their host countries.

This paper examines whether Eastern European immigrants aged 50 and over living in Northern and Western Europe face a disadvantage in terms of self-perceived health, with respect to the native-born and other immigrant groups. Data were obtained from the Survey of Health, Ageing and Retirement in Europe (SHARE) from which we selected five European countries—Austria, France, Germany, Sweden and Switzerland—which became the most important European receiving countries after the Second World War and recorded higher percentages of immigrants from Eastern Europe than other countries in the dataset. Since immigrants are a heterogeneous group with respect to culture, health practices, historical roots and ethnic patterns—a fact which may influence health status—we allowed for differences across immigrants from different countries of birth classified as "Eastern Europe", "Other countries in Europe" and "Extra–Europe". We also considered the length of time spent in the host country since immigration, distinguishing immigrants who arrived before 1945, between 1945 and 1989, and after 1989. This was to capture the various waves of migration towards Western Europe, such as the pre-war period, which was characterised by migration of political and ethno-religious refugees from central-eastern Europe to Germany and Austria, and was also due to recruitment of foreign labour. The post-war period was mainly marked by the migration of refugees, displaced persons, returnees from the colonies, and unskilled workers. The third period was directly associated with political events, such as the dismantling of the Iron Curtain in 1989 which gave rise to another large wave of ethnic-political refugees and asylum-seekers from East to West (Münz 1995).

We then examined health changes over time through the probabilities of transition among self-perceived health states for the native-born and immigrants, and how they vary according to age and gender. We hypothesised that Eastern Europeans are more likely to rate poor health and to undergo deteriorating health, or difficulty in recovering from sickness, as they age. Understanding the transition towards poor health which occurs with age, permanence in a state of sickness or its resolution in various groups, may help to target and improve interventions such as reducing mortality and morbidity or estimating health trajectories over time (Diehr and Patrick 2001).

Methods

Data came from the first wave of SHARE collected in 2004/2005 (SHARE 2.5.0). We also used the second and fourth waves (2006 and 2010) to investigate changes in health over time of respondents interviewed in the 2004 SHARE baseline study, which was our initial state. The third wave was not used, because it mainly focuses on life histories, and some important information concerning the current situation of respondents was not collected. SHARE is a multidisciplinary, cross-national panel database of micro-data, covering a broad range of topics, including health, income, assets, employment, retirement, insurance, and family structure of individuals aged 50+.

The selected countries in the baseline survey comprised 12,099 persons, of whom 1,665 were defined as "immigrants", i.e., born in a country different from that of their residence (about 13.8 %). The response rates in the first wave of SHARE among the five selected countries were in line with other surveys, ranging from the highest recorded in France (73.6 %) and Germany (63.4 %) to the lowest in Switzerland (37.9 %). Three broad immigrant groups were distinguished, independently of citizenship: immigrants from "Eastern Europe" (East-EU), "Other countries in Europe" (Other-EU) and "Extra-Europe" (Extra-EU). Classifying countries into geographical regions followed the method used by the Population Division of the United Nations (United Nations 2008). In choosing these groups, we tried to maintain a sufficient number of observations in each subgroup and to focus, especially on the health transition of immigrants from Eastern Europe, the most vulnerable. In view of the importance of the destination country in influencing health status, interaction variables between origin and destination countries were created (see Huijts and Kraaykamp 2012). Information on time of arrival in the host country allowed us to classify immigrants in different periods of immigration (before 1945, 1945–1989, after 1989). Self-rated health is the indicator most widely used to assess immigrant health, since it captures overall health status (Idler and Benyamini 1997) and is robust in predicting mortality and morbidity (Kaplan et al. 1996) and the need for healthcare (Fylkesnes 1993). Mitrushina and Satz (1991) also found this indicator to be a good measure of health status among the elderly.

Nevertheless, since this is a comparative study, some problems arise regarding the validity of the interpretation of self-perceived health, since perceptions of health are influenced by cultural and social values and norms which vary within and across ethnic groups and which may thus affect measurements of self-rated health (Agyemang et al. 2006; Nielsen and Krasnick 2010). However, several studies have confirmed the validity and reliability of this indicator of a person's general health and well-being (Lundberg and Manderbacka 1996), even in differing ethnic groups (Chandola and Jenkinson 2000). Self-perceived health was dichotomised into two groups: "positive" (good, very good, excellent) and "negative" (less than good). Binary logistic regression models were used to estimate the effects of immigrant status on the health status of respondents as opposed to the native-born. Specifically, Model 1 accounts for the relative likelihood of immigration-related variables on "poor health perception" (less than good) and controls for demographic variables such as gender, age, and type of household. We then extended the model to include socio-economic effects (Model 2), i.e., educational level, occupational status, and the perceived economic state of households. Educational level was self-reported and reclassified with the UNESCO International Standard Classification of Education (ISCED) to harmonise education systems across countries (UNESCO 1997). The original ISCED was re-coded into three broader education levels: "low", "medium" and "high", the last used as the reference. We examined current labour force situations by grouping respondents into three categories: employed (those doing or not doing physically demanding jobs) and people out of the labour force (reference modality). Among several economic indicators for households, we used the "make ends meet" question, which includes four decreasing modalities of difficulty encountered in meeting needs with respect to monthly income. This categorical variable was then reclassified into three modalities of perceived economic resources: high (reference), intermediate and low. Both models were estimated including weights adjusted for different sampling schemes at country level.

We then calculated transition probabilities with the non-parametric count method used by Diehr and Patrick (2001), which consists of counting the number of transitions from the initial state to states some period ahead (Jung 2006), according to age and immigration status. Those who reported "excellent", "very good" and "good" general health were defined as "Healthy", and those who answered "fair" or "poor" as "Sick". In addition, as individuals face a mortality risk, we considered death as one of the possible health states ("Dead"). For example, an individual may move from being "Healthy" to being healthy/sick/dead or, conversely, from "Sick" to healthy/sick/dead. To show the heterogeneous age effects of the probability of transition, individuals were grouped into three age categories: 50–64, 65–74, and 75+. It should be noted native-born and immigrants could contribute data to more than one age category, depending on their age at the start of each transition.

Descriptive statistics

Table 1 lists the descriptive statistics of all variables used in multivariate analyses. We compared the native-born and immigrants from Europe and Extra-Europe with people born in Eastern Europe, who represent 27.9 % of total immigrants ($n = 464$). Analysis by country of birth showed that most migration flows occurred within Europe. We also indicate individuals' date of arrival in the host country: the majority of immigrants aged 50+ arrived after the Second World War, between late 1945 and 1989. Self-rated health was shown to be less than good for 54 % of the Eastern European immigrants, as opposed to 35.9 % of native-born people. Taking into account individual variables, the sample contained a higher proportion of women than men, especially from Eastern Europe.

About 82 % of Eastern Europe immigrants stated that they had retired, but only 25.4 % reported a low educational level (versus 40.6 % of the native-born). Despite this result, the proportion of Eastern European immigrants reporting "making ends meet with difficulty/great difficulty" was almost 14 points higher than the native-born (39.1 vs. 25.5 %). To show the cross-country variability of native-born/immigrant health differences among the European countries, we first listed the percentage distribution of foreign-born people in each country (Table 2). The highest percentage of Eastern European immigrants was recorded in Germany. Specifically, looking at the distribution of Eastern Europeans across the receiving countries, it turns out that most of them (71 %) reside in Germany and about 20 % in Austria and Sweden, whereas smaller percentages are recorded in Switzerland and France (5.2 and 4.0 %, respectively).

Figure 1 compares native-born with foreign-born individuals on the health measure considered and examines variability across the five European countries. Eastern European immigrants report poorer self-perceived health with respect to the native-born and other groups of immigrants in all countries.

Table 3 shows the prevalence of respondents' poor health status by age category and country of birth pooling together all waves. The native-born had a significantly lower prevalence of poor health: about 21 % aged 50–64 stated they were in poor health. For immigrants in the same age range, the prevalence of poor health was higher, 31.2 %. Over the three age groups, the prevalence of poor self-rated health for the native-born increases from 21.1 to

Table 1 Descriptive statistics for native-born (NB), immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five European countries (Austria, France, Germany, Sweden and Switzerland, 2004)

Variables	NB (%)	East-EU (%)	Other-EU (%)	Extra-EU (%)	Variables	NB (%)	East-EU (%)	Other-EU (%)	Extra-EU (%)
Self-rated health					Type of household				
Poor health	35.9	54.0	43.2	41.2	Living in couples	70.6	70.7	68.8	72.9
Good health	64.1	46.0	56.8	58.8	Divorced	8.9	9.3	9.8	9.3
					Never married	6.2	5.2	5.2	7.1
Country of birth		27.9	47.4	24.7	Widowed	14.2	14.8	16.2	10.7
Time of arrival					Education				
Arrived before 1945		26.7	17.6	3.4	Low	40.6	25.4	44.4	53.0
Arrived during 1945–1989		53.7	74.0	81.5	Intermediate	39.4	47.6	34.3	22.1
Arrived after 1989		19.6	8.4	15.1	High	20.0	27.0	21.3	24.9
Gender					Economic resources				
Male	44.8	42.2	43.3	44.7	Low	25.5	39.1	36.5	60.3
Female	55.2	57.8	56.7	55.3	Intermediate	41.9	33.1	35.0	25.1
					High	32.6	27.8	28.5	14.6
Age					Occupation				
Cohorts 1900–1924	9.7	10.2	9.2	5.5	Retired (out of labour force)	67.5	82.4	68.8	63.1
Cohorts 1925–1934	21.8	25.7	19.2	12.7	Employed (physically demanding job)	14.1	10.0	15.3	17.2
Cohorts 1935–1944	32.8	43.1	35.1	29.7	Employed (not physically demanding job)	18.4	7.6	15.9	19.7
Cohorts 1945–1954	35.7	21.0	36.5	52.1					

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Notes: number of observations: 12,099 individuals aged 50 and over (10,434 native-born, 1,665 foreign-born)

30.3 to 44.4 %, and that of immigrants from 31.2 to 40.5 to 55.3 %. The striking result was that Eastern European immigrants reported the highest values of poor health in the 50–64 and 75+ age groups with respect to the native-born and other immigrants. The prevalence values were significantly higher at each subsequent age group compared with the younger one. The last line of Table 3 reports the number of observations (transition pairs).

When we analysed the prevalence of poor health status by gender and immigrant status, we found that immigrant men were significantly healthier than women; no significant differences were found among the native-born (Table 4). In particular, the percentage of Eastern European women reporting poor health was consistently higher than that of the native-born and immigrant groups of both genders.

Table 2 Share of immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five european countries (Austria, France, Germany, Sweden and Switzerland, 2004)

	East-EU		Other-EU		Extra-EU		Total
	n	%	*n*	%	*n*	%	*n*
Austria	51	28.7	107	60.1	20	11.2	178
France	17	3.4	192	38.3	292	58.3	501
Germany	330	59.1	188	33.7	40	7.2	558
Sweden	42	16.2	179	69.1	38	14.7	259
Switzerland	24	14.2	123	72.8	22	13.0	169
Total	464		789		412		1665

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Notes: number of observations: 12,099 individuals aged 50 and over (10,434 native-born, 1,665 foreign-born)

Results

Logistic regression: effect of nativity status

Table 5 lists the logistic regression results of the effect of “being an immigrant” on poor self-perceived health. We stress that the inclusion of country of origin variable interacted with the country of residence allows for the latter

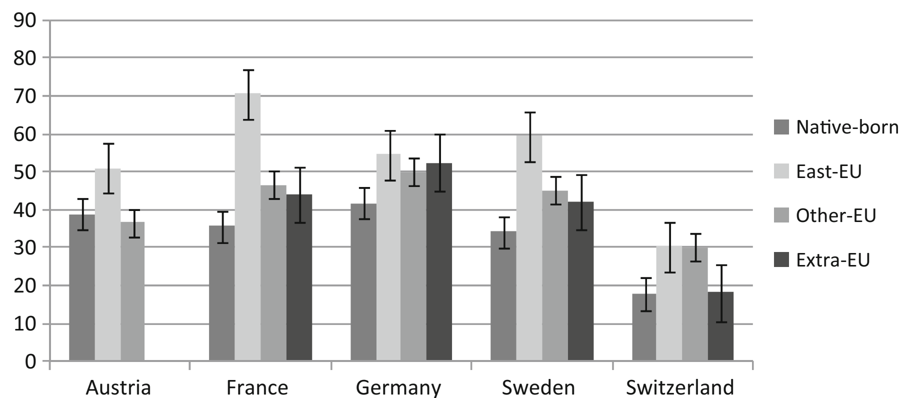

Fig. 1 Share of native-born and immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five european countries (Austria, France, Germany, Sweden and Switzerland) declaring poor self-perceived health (2004)

Table 3 Prevalence of poor state of health by age among native-born and immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five European countries (Austria, France, Germany, Sweden and Switzerland, 2004–2006–2010)

	50–64	65–74	>75
Native-born	21.1	30.3	44.4
All immigrants	31.2	40.5	55.3
East-EU	40.9	43.7	59.7
Other-EU	28.3	36.4	54.3
Extra-EU	29.2	46.0	47.4
Number of observations	11,431	8,096	4,884

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Table 4 Prevalence of poor state of health by gender among native-born and immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-Eu) in five European countries (Austria, France, Germany, Sweden and Switzerland, 2004–2006–2010)

	Men	Women
Native-born	31.6	32.5
All immigrants	37.3	42.6
East-EU	44.1	50.3
Other-EU	34.7	41.5
Extra-EU	35.0	35.5
Number of observations	16,170	20,109

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Table 5 Binary logistic regression models: odds ratio for poor self-perceived health for immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five European countries (Austria, France, Germany, Sweden and Switzerland, 2004)

Variables	Poor health	
	Model 1	Model 2
Country of origin		
Native-born (ref)		
East-EU* Germany	1.52 (0.18)***	2.01 (0.30)***
Other-EU* Germany	1.38 (0.21)**	1.93 (0.38)***
Extra-EU* Germany	2.07 (0.71)**	2.14 (1.07)
East-EU* France	3.24 (1.93)**	3.53 (2.37)*
Other-EU* France	1.77 (0.29)***	1.39 (0.28)
Extra-EU* France	1.92 (0.26)***	1.34 (0.24)*
East-EU* Sweden	3.31 (1.13)***	3.56 (1.52)***
Other-EU* Sweden	1.70 (0.27)***	2.07 (0.44)***
Extra-EU* Sweden	1.93 (0.68)*	1.60 (0.80)
East-EU* Switzerland	3.23 (1.58)**	0.73 (0.42)
Other-EU* Switzerland	2.12 (0.48)***	0.52 (0.15)**
Extra-EU* Switzerland	0.82 (0.63)	1.02 (0.64)
East-EU* Austria	1.37 (0.41)	1.54 (0.50)
Other-EU* Austria	0.91 (0.20)	0.95 (0.23)
Extra-EU* Austria	0.08 (0.09)**	0.07 (0.07)**
Gender		
Male (ref)		
Female	1.12 (0.05)***	1.08 (0.06)
Age		
Cohorts 1900–1924 (ref)		
Cohorts 1925–1934	0.64 (0.05)***	0.65 (0.06)***
Cohorts 1935–1944	0.33 (0.03)***	0.44 (0.04)***
Cohorts 1945–1954	0.22 (0.02)***	0.48 (0.05)***
Type of household		
Living in couple (ref)		
Divorced	1.09 (0.08)	0.92 (0.07)
Never married	1.11 (0.09)	1.01 (0.09)
Widowed	1.14 (0.07)**	0.98 (0.07)
Education		
Low		1.71 (0.13)***
Intermediate		1.37 (0.10)***
High (ref)		
Occupation		
Retired (out of labour force) (ref)		
Employed (physically demanding job)		0.48 (0.04)***
Employed (not physically demanding job)		0.34 (0.03)***
Economic resources		
Low		2.46 (0.17)***
Intermediate		1.42 (0.09)***
High (ref)		
Country of residence		
Germany (ref)		
Austria	0.81 (0.05)***	0.65 (0.05)***
France	0.71 (0.04)***	0.50 (0.04)***
Sweden	0.67 (0.04)***	0.56 (0.04)***
Switzerland	0.26 (0.03)***	0.22 (0.03)***
Constant	1.66 (0.17)***	0.57 (0.07)***
Log likelihood	−7,252.51	−4,654.01

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Notes: The number of observations entering the multivariate models was 11,672, whom 1,569 were immigrants the estimates are obtained using SHARE calibrated weights. The log likelihood of the empty model is −7,865

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Standard errors in brackets

effect to vary across countries of birth (Ai and Norton 2003).

The results show that immigrants born in Eastern Europe but now living in Germany, France, Sweden or Switzerland were most likely to report poor self-rated health compared with the native-born (respective ORs = 1.52, 3.24, 3.31 and 3.23). Immigrants born in Eastern Europe and living in France, Sweden and Switzerland also had significantly higher odds ratios of reporting poor self-perceived health, compared with those from Europe and Extra-Europe. However, the results for France and Switzerland must be interpreted with caution, as the percentages of Eastern European immigrants were small. It should be noted that, in Model 2, the disadvantaged health status of people born in Eastern Europe did not disappear and did not decline at all in the above countries except Switzerland. Immigrants born in Eastern Europe had significantly higher odds ratios of reporting poor self-perceived health than the native-born, even after controlling for socio-economic variables, i.e., the inclusion of such variables does not cancel out differences in terms of perceived health. Immigrants from other European and Extra-European countries living in Germany were also more likely to report poorer health than the native-born, although the effect for the latter group was no longer significant when socio-economic factors were controlled for. In the case of France, the subjective health status of immigrants born in Europe and Extra-Europe was worse than that of the native-born. However, the effect of migration did not disappear, but declined significantly for immigrants from Extra-Europe, whereas the ORs for immigrants born in Europe were no longer significant in Model 2. This means that socio-economic variables do not completely explain differences in self-perceived health between the native-born and immigrants from Europe. A similar pattern was revealed for immigrants born in Europe living in Sweden (most of them Finnish) who had significantly higher ORs than the native-born, a result matching those of other studies (Lindstrom et al. 2001; Pudaric et al. 2003). European immigrants resident in Switzerland—mainly labour migrants—also show higher rates of poor health compared with the native-born.

The results show that health worsens with age, the relative risk being much higher for widowed people and those with little education. Also, those who perceived "low economic resources" tended to rate poor health, which was more than double that of people in a better economic position. Interestingly, women were at a statistically significant risk for poor self-rated health, but only when socio-economic variables were not controlled for. Lastly, the probability of perceiving poor health was lower in all countries of residence with respect to the country of reference "Germany", supporting the results presented in the descriptive statistics. Germany was chosen as reference since immigrants living there had a higher risk of perceiving poorer health.

Logistic regression: effect of time of arrival

To identify more accurately the relationship between self-perceived health and immigration status, logistic regression was then separately estimated (Table 6) by including the set of country of origin variables interacting with "time of arrival" in the host country.

The results of Model 1 show that the probability of perceiving "poor health" is higher for all immigrants born in Eastern Europe arriving after 1945, with higher ORs for short-term migrants who had been residing outside their original country since 1989 (OR = 2.54). Poor health profiles also emerged for Eastern immigrants who had moved in the period 1945–1989 (OR = 1.68). The inclusion of socio-economic effects did not substantially change the significance of the ORs, except for those arriving after 1989, for whom the parameter was no longer significant. The probability of being in poor health for immigrants arriving between 1945 and 1989 from Europe and Extra-Europe, all other factors remaining constant, was almost double that of the native-born. However, the probability of perceiving poor health for Extra-European immigrants who arrived in the host country in 1945–1989 was reduced when socio-economic factors were included, although the parameter remained significant for European immigrants. Each of the explanatory variables revealed the expected OR magnitudes and were statistically significant.

Transition probabilities: health changes over time

Transition probabilities were based on 25,570 transition pairs from 12,099 participants (during the study, 899 people died). For the whole sample, about 29 % of observations were missing in the health status variable. Figures 2 and 3 show transition probability changes in self-rated health over time (2004–2006–2010) and differences between the native-born and immigrants. To capture trends better, only three groups are reported: native-born, all immigrants, and immigrants from Eastern Europe. Transition probability estimates are the likelihoods of remaining healthy and of recovering from sickness. Figure 2 shows the probability of remaining in a healthy state, initially over 80 % and higher for the native-born (84.2 %) than for immigrants (81.3 %). The probability of staying healthy tended to be lower for Eastern European immigrants, especially younger ones (aged between 50 and 74); the significant decline with advancing age for both the native-born and immigrants reduces the gap between them.

Table 6 Binary logistic regression models: odds ratio for poor self-perceived health for immigrants from Eastern Europe (East-EU), Other countries in Europe (Other-EU) and Extra-Europe (Extra-EU) in five European countries (Austria, France, Germany, Sweden and Switzerland, 2004) by duration of residence

Variables	Poor health	
	Model 1	Model 2
Time of arrival and nativity status		
Native-born (ref)		
Arrived before 1945*East-EU	1.34 (0.25)	1.36 (0.31)
Arrived 1945-1989*East-EU	1.68 (0.23)***	1.69 (0.29)***
Arrived after 1989*East-EU	2.54 (0.58)***	1.59 (0.49)
Arrived before 1945*Other-EU	1.09 (0.20)	1.07 (0.24)
Arrived 1945-1989*Other-EU	1.76 (0.16)***	1.67 (0.20)***
Arrived after 1989*Other-EU	0.96 (0.27)	0.70 (0.26)
Arrived before 1945*Extra-EU	1.21 (0.67)	2.62 (1.79)
Arrived 1945-1989*Extra-EU	1.81 (0.23)***	1.38 (0.23)*
Arrived after 1989*Extra-EU	1.08 (0.34)	0.37 (0.18)**
Gender		
Male (ref)		
Female	1.13 (0.47)***	1.04 (0.06)
Age		
Cohorts 1900–1924 (ref)		
Cohorts 1925–1934	0.63 (0.05)***	0.64 (0.06)***
Cohorts 1935-1944	0.33 (0.02)***	0.40 (0.04)***
Cohorts 1945–1954	0.22 (0.02)***	0.46 (0.05)***
Type of household		
Living in couple (ref)		
Divorced	1.10 (0.08)	0.98 (0.08)
Never married	1.09 (0.09)	1.02 (0.10)
Widowed	1.15 (0.07)**	0.99 (0.07)
Country of residence		
Germany (ref)		
Austria	0.78 (0.05)***	0.64 (0.05)***
France	0.73 (0.04)***	0.53 (0.04)***
Sweden	0.69 (0.04)***	0.59 (0.04)***
Switzerland	0.27 (0.02)***	0.21 (0.03)***
Education		
Low		2.05 (0.16)***
Intermediate		1.38 (0.10)***
High (ref)		
Occupation		
Retired (out of labour force) (ref)		
Employed (physically demanding job)		0.49 (0.05)***
Employed (not physically demanding job)		0.36 (0.04)***
Economic resources		
Low		2.43 (0.17)***
Intermediate		1.42 (0.09)***
High (ref)		
Constant	1.66 (0.16)***	0.92
Log likelihood	−7,263.81	−4,665.73

Source: Survey of Health, Ageing and Retirement (SHARE 2004–2006–2010)

Note: The number of observations entering the multivariate models was 11,672, whom 1,569 were immigrants the estimates are obtained using SHARE calibrated weights. The log likelihood of the empty model is −7,865

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Standard errors in brackets

Figure 3 shows the probability of recovering from a sick state by moving to a healthy one, which was initially about 33 % and was higher for the native-born than for immigrants, especially at younger ages (50–64). The differences between them in the probability of recovering were in fact reduced for older people, although the native-

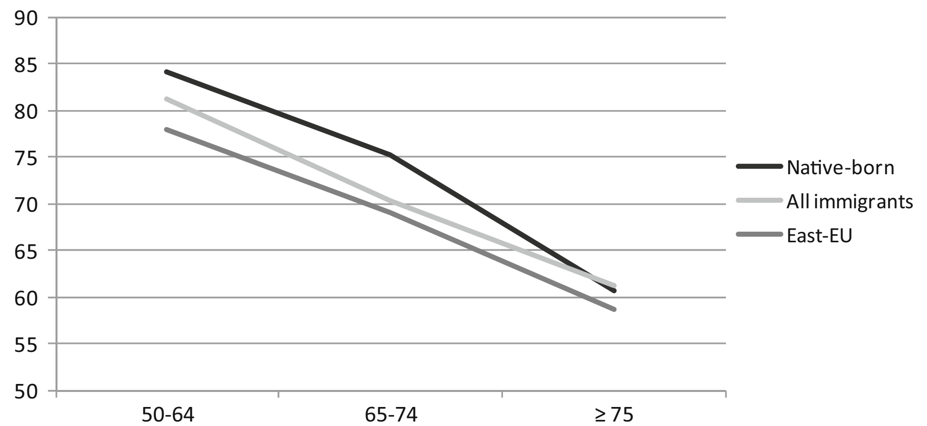

Fig. 2 Probability of maintaining healthy status over time (2004–2006–2010) by age, for native-born, all immigrants and immigrants from Eastern Europe (East-EU), in five European countries (Austria, France, Germany, Sweden and Switzerland)

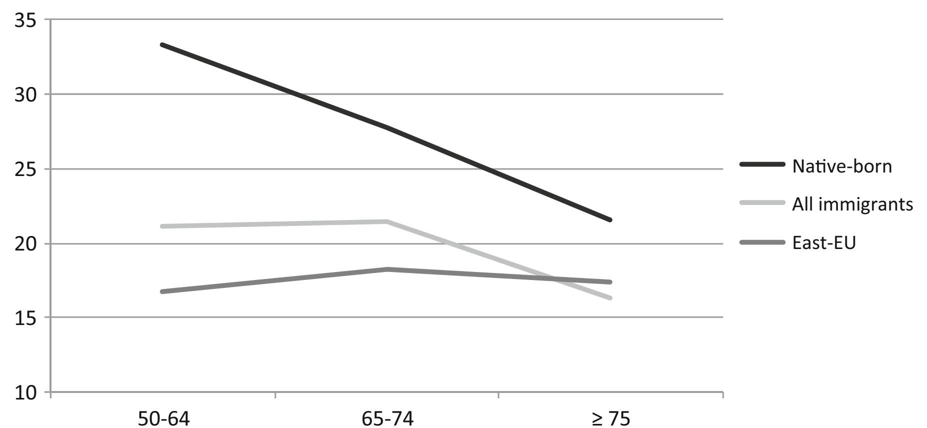

Fig. 3 Probability of recovering from sick status over time (2004–2006–2010), by age for native-born, all immigrants and immigrants from Eastern Europe (East-EU), in five European countries (Austria, France, Germany, Sweden and Switzerland)

born were still more likely to recover from being sick. In addition, according to our data, Eastern Europeans are less likely to move from sick to healthy status than the native-born and other groups of immigrants, especially in the first two age groups.

Discussion

The main finding of this study was the health disadvantage of Eastern European immigrants aged 50+ living in Western Europe. As expected, people born in Eastern Europe living in Germany, France and Sweden had the highest ORs of poor health with respect to the native-born, even after controlling for socio-economic status, which is in line with several studies (Ronellenfitsch and Razum 2004; Vaillant and Wolff 2010; Pudaric et al. 2003). This disadvantage may stem from the fact that the Eastern European immigrant populations were made up of large numbers of political refugees who had fled during times of political crisis from their countries of origin, asylum-seekers, and immigrants belonging to ethnic or religious minorities who had undergone traumatic experiences. In fact, this category mainly includes people born in the former Eastern territories of the German Reich, Poland, Czechoslovakia, the Russian Federation and Hungary. This finding probably also reflects the economic hardship linked to historical communist roots, which represented a debilitating and depressive period for middle-aged and old immigrants who were then relatively young (Frejka et al. 1995). Some studies have also shown that the prevalence among Eastern Europeans of high-risk factors such as smoking, consumption of alcohol and unhealthy dietary habits (e.g., low consumption of fruit and vegetables, high consumption of fats) lead to deterioration in health and higher mortality due to cardiovascular problems and stroke (Leon et al. 1997; Peto et al. 1992), contributing to explaining the so-called “East–West Mortality Divide” (Boback and Marmot 1996). The dramatic health deterioration in Eastern Europe may also be attributed to the

limited provision of health services compared with other states in Europe, the high reliance placed on the family, and incomplete population coverage (Leibfried 1992).

Looking at the effect of time of arrival, our results show that Eastern Europeans immigrating in the period 1945–1989 and short-term immigrants arriving after 1989 have a greater risk of being in poor health than the native-born. This disadvantaged condition may be explained by the fact that immigrants who arrived in the host country after 1945 were displaced persons and refugees generated by the Second World War together with those who escaped from oppressive political regimes, as in the case of Hungary (1956–57), Czechoslovakia (1968) and Poland (1980–81), combined with financial problems (Münz 1995). A large wave of refugees and asylum-seekers in Europe also began at the end of the 1980s, when East–West borders were opened up and the dramatic growth of inequalities in income distribution increased the proportion of the population living under the poverty line. We also found that immigrants coming from other countries of Europe and Extra-Europe who arrived from 1945 to 1989 were also likely to have poorer health than the native-born, and this augmented risk cannot be explained by the factors included in Model 2. We hypothesise that these migratory waves were mainly composed of labour migrants, one of the most deprived immigrant groups, or directly linked to de-colonisation, as in the case of Algerians directed towards France.

Lastly, transition probabilities show that the native-born and immigrants underwent different kinds of changes in health over time, the native-born having better health and less sickness. In particular, our results emphasise the heterogeneity found among immigrants, as Eastern Europeans are more likely to experience worsening health and less likely to recover from sickness. A considerable health disadvantage for people born in Eastern Europe versus the native-born was also found at younger ages (50–64), although this gap became smaller over time. However, the decline in the prevalence of a healthy state over time, for both native-born and immigrants, did not cancel the differences between them, as the native-borns over 75 were still healthier.

There are some limitations to this study. First, our results were obtained by means of a subjective health measure, which is less precise and culturally influenced when comparisons are made between differing ethnic groups, with respect to more objective health measures. However, the advantages of using a subjective general health measure include its simplicity, ease of availability in most health surveys, capacity to integrate the different dimensions of health, and reduced burden and costs. Second, the problem of non-response may introduce selection bias in, for instance, survey response rates of covariates or outcomes differing across countries or ethnic groups. Multivariate estimates were therefore carried out with a cross-country weights sample design, calibrated to adjust for non-response (see Börsch-Supan and Jürges 2005). Third, we emphasise that the findings presented here were obtained with a dataset containing comparatively few Eastern European immigrants, particularly in France and Switzerland. The last problem to be discussed concerns panel attrition, which may affect transition probabilities: the exclusion of SHARE participants who did not answer the question on self-perceived health or dropped out may lead to selection bias. Nevertheless, we hypothesise that people with poor health—mainly immigrants—have a higher probability of dropping out during follow-up. If those who dropped out were more likely to report poor health than those who remained, this would lead to an under-estimation of the decline in health status in immigrant groups. Consequently, our conclusion on the disadvantaged health conditions of immigrants, particularly Eastern immigrants, does not change, but would be stronger than that found in this study.

Despite these limitations, we believe our results are important, because they suggest that health inequalities do not affect immigrant groups in equal measure and confirm the poorer and more steeply deteriorating health status of Eastern European immigrants. Solutions such as increasing and targeting social services and providing healthcare to the more disadvantaged groups of immigrants should therefore be implemented.

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