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Original Research

Origin differences in self-reported health among older migrants living in France

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SUMMARY

Objectives: Little is known about the health status of older migrants living in Europe. Using detailed data collected in 2003, this study investigated differences in health status by country of origin within the older immigrant population living in France using a self-rated health measure.

Study design: The database used in this research was the *Passage à la Retraite des Immigrés* survey, conducted from November 2002 to February 2003 on a sample of 6211 migrants aged 45–70 years and living in France at the time of the survey.

Methods: A difficulty with a self-rated outcome is that it may not be comparable between different origin groups, particularly because of cultural and linguistic differences. Therefore, generalized ordered Probit models were estimated, and an indicator of health, net of cross-cultural effects was constructed for each respondent.

Results: This study found that male immigrants from southern Africa and Asia, and female immigrants from northern Europe, southern Africa and Asia are more likely to be in good health, while the health status is lower among immigrants from Eastern Europe living in France.

Conclusion: The diversity in health status within the immigrant population is large in France. These results are helpful in order to target the more disadvantaged origin groups and to adjust the provision of health care.

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Introduction

Knowing the health status of immigrants is particularly important to health policy planners, as it provides unique opportunities to improve health care. However, the link between migration and health is complex on *a priori* grounds.

According to the healthy migrant hypothesis,^{1–3} the health status of immigrants at the time of arrival is usually better than

that of the native-born population because of the positive selection of immigrants among their origin population. The migration decision will then affect the health of those who have migrated, with immigrant health status deteriorating with the duration of residence. At the same time, according to the 'salmon' bias, many migrants return to their country of birth after retirement or if they become seriously ill, reflecting their desire to die in their own birth place.⁴ This type of

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selective emigration results in lower mortality among the migrants who choose not to return to their country of birth.⁵

From an empirical perspective, numerous studies have focused on health disparities, both within the immigrant population and between immigrants and natives living in the USA⁶; a country characterized by rapid acceleration and diversification of immigrants over the last 30 years. The main conclusions are that foreign-born individuals are in better health than native-born Americans, and that there is significant heterogeneity in health among immigrants.⁷ The populations under consideration are essentially made up of middle-aged adults, which is undoubtedly due to the fact that migration has primarily been associated with labour considerations. However, this perception is now contradicted by the ageing of immigrants, and the health of older immigrants is of special interest since most changes in health occur during old age.

Like the USA, European countries are characterized by a large number of immigrants, and the proportion of immigrants of retirement age or older is increasing. Despite the interest in studying the health status of immigrants, research on this issue remains scarce in Europe, recent exceptions being found in the Netherlands,⁸ Sweden⁹ and France.^{10,11} In the latter, several studies have evidenced a heterogeneous relationship between immigration status and health after controlling for socio-economic status, depending on age at immigration, gender and origin.¹²

Health benefits are noticeable among Mediterranean men, especially for affluence-related diseases such as cancer and cardiovascular diseases.¹³ When compared with local-born French and non-migrant Tunisians, migrants from Tunisia have lower mortality and morbidity rates when considering nutrition-related non-communicable diseases.¹⁴ An explanation is that their acculturation led to a convergence of some of their characteristics to those of the host population, but not others. Past and current exposure to the home country helped to maintain some positive dietary aspects.¹⁵ Also, some unusual types of cancer (nasopharynx, bladder) are observed among migrants from northern Africa, while these migrants generally have lower risks for most cancer sites.¹⁶

Clearly, there is a strong need for more research on aspects of migrant health in European countries.¹⁷ Assessing the relevance of the healthy migrant or salmon hypothesis is undoubtedly of the highest importance, but detailed longitudinal data are usually required to understand the dynamics of health between the migrant and native populations. Instead of comparing the health status of migrants and natives, as done in previous studies, this study focused on differences in subjective health among the various origin groups of older immigrants living in France. A difficulty with a self-rated health measure is that it may not be comparable across cultural groups. In particular, some groups may give biased responses to the self-rated health indicator because of cultural and linguistic differences. Therefore, a simple methodology was developed to adjust for these differences.

To study differences in health status within the immigrant population living in France, this study used data collected in 2003 by the *Caisse Nationale d'Assurance Vieillesse* on a large sample of migrants aged 45–70 years living in France. This survey provides detailed information on the characteristics of the respondents, and includes a self-rated health measure

which is an accurate indicator of chronic disease and a good predictor of mortality.¹⁸ The study focused on differences in health by country of origin and compared the health status of the different immigrant groups. Drawing on generalized ordered Probit models with thresholds depending on both country of origin and language proficiency, health indicators net of cross-cultural differences were calculated for each origin group.

Methods

A cross-sectional dataset collected by the *Caisse Nationale d'Assurance Vieillesse* from November 2002 to February 2003 was used to study origin differences among the immigrant population living in France. The *Passage à la Retraite des Immigrés* (PRI) survey focuses on immigrants' experiences of ageing and retirement. It includes a large sample of migrants aged 45–70 years living in France at the time of the survey.¹⁹ Immigration is defined by place of birth (outside France) and nationality of birth (non-French). These criteria include individuals who have acquired French citizenship by naturalization, but they exclude French citizens (by birth) who were born in foreign countries.

The sample includes detailed information on exactly 6211 respondents. Given the different countries of birth of the respondents, the following eight origin groups were constructed: northern Europe ($n = 444$), southern Europe ($n = 2322$), eastern Europe ($n = 269$), northern Africa ($n = 2095$), southern Africa ($n = 379$), America ($n = 125$), Middle East ($n = 251$) and Asia ($n = 326$). Interestingly, 71% of the respondents came from three southern European countries (Italy, Portugal and Spain) and three northern African countries (Algeria, Morocco and Tunisia).

The PRI survey contains detailed information about the respondents' demographic and economic characteristics, including social network, migration history, work and retirement, health, support and intergenerational transfers, household income, savings and standards of living. To study differences in health among migrants, the dependent variable was a standard self-assessed measure given by the following question: 'at this moment, would you say that your health is: very good – good – fair – poor – very poor?'. Given the low number of respondents reporting a very poor health status ($n = 184$), the 'very poor' and 'poor' outcomes were merged into a single category. An ordered variable was then defined, ranging from 1 (very poor or poor health) to 4 (very good health).

An econometric analysis was used to estimate the role of individual characteristics and country of origin on the self-reported measure of subjective health. It was assumed that a latent, unobserved variable denoted by H^* exists, which provides a measure of the migrant's 'true' health, i.e. net of cultural effects. The health outcome H^* is expressed as:

$$H^* = X\beta + \epsilon \quad (1)$$

where X is a set of covariates explaining health, β is a vector of coefficients to estimate, and ϵ is a random error term. By definition, H^* remains unobserved, but the data provide some information on the self-reported health status H ranging from 1 (very poor or poor health) to 4 (very good health). It is supposed that:

$$H = j \quad \text{if} \quad \mu_{j-1} \leq H^* < \mu_j \quad (2)$$

with $j = 1, \dots, 4$. The different parameters μ_j (with $\mu_{j-1} < \mu_j$) are threshold levels that have to be estimated jointly with the parameters, with $\mu_0 = -\infty$ and $\mu_4 = +\infty$. Assuming that the error term ϵ is normally distributed, the corresponding specification is an ordered Probit model.

A shortcoming of this type of ordered model is that it assumes fixed threshold values for the whole population under consideration. Unfortunately, previous studies have suggested that these threshold levels are unlikely to remain constant when comparing the self-assessed measure of health among different populations.²⁰ In order to relax this restrictive assumption of parallel lines, it was assumed that different thresholds vary over the observations as a function of variables related to origin effects. In this context, both origin and language proficiency were expected to have a strong influence on the thresholds. This defines a generalized ordered Probit model.^{21,22}

As this study was interested in a comparison of health among the various origin groups (net of cultural effects), the generalized ordered estimates were used to compute the following predicted health outcome for each respondent i :

$$\hat{H}_i^{\text{origin}} = X_i^{\text{origin}} \beta \quad (3)$$

To get normalized values for the health outcome, $\hat{H}_{\min}^{\text{origin}} = \min(\hat{H}_i^{\text{origin}})$ and $\hat{H}_{\max}^{\text{origin}} = \max(\hat{H}_i^{\text{origin}})$ were calculated for the various origin groups. Then, for each respondent, a normalized indicator of health was calculated, ranging from 0 to 1 and denoted by $\tilde{H}_i^{\text{origin}}$ using:

$$\tilde{H}_i^{\text{origin}} = \frac{\hat{H}_i^{\text{origin}} - \hat{H}_{\min}^{\text{origin}}}{\hat{H}_{\max}^{\text{origin}} - \hat{H}_{\min}^{\text{origin}}} \quad (4)$$

In so doing, comparable indicators of self-assessed health for the eight origin countries were obtained. For the comparison, mean and different percentile values along the health distribution were calculated. These indicate differences in health among the migrant population, adjusted for the cross-cultural bias stemming from country of origin and language proficiency.

The next section describes the explanatory variables that are controlled for when estimating the generalized ordered model. First, a set of demographic controls related to gender, age, and marital status were included. Secondly, the socio-economic status of the respondent was taken into account through the inclusion of education, occupational status during activity, quartiles of income measured at the household level, and whether the household is liquidity constrained or not. Thirdly, more objective health indicators were included, as a separate source of information is needed to correct for presupposed differences in reporting.

The survey indicates whether the respondent has limitations with activities of daily living and instrumental activities of daily living. For the seven activities recorded in the survey (taking transportation, doing shopping, going outside, moving in the housing, doing housework, bathing/showering, preparing a meal), a set of dummy variables was constructed, being equal to 1 when the respondent reported a specific limitation (and 0 otherwise). These dummy variables were

summed to get the total number of limitations with activities of daily living and instrumental activities of daily living. In addition, a dummy variable was included that takes a value of 1 when the respondent has spent at least one night in hospital during the last 12 months. This covariate is strongly correlated with objective health problems.²³

The fourth set of variables deals with parental characteristics. Four dummy variables were introduced, indicating whether the father and the mother of the respondent were alive or not at the date of the survey and whether, if alive, they were in poor health. Having parents who are alive and healthy should result in a positive correlation of high self-rated health status. Also, the financial situation of the respondent during youth was known (very poor, poor, fair or good), and this may be seen as a good proxy of parental socio-economic status.

Finally, the last set of covariates was about the migration trajectory itself. In the basic ordered Probit model, duration of migration, difficulty in reading French and country of origin were included in the list of covariates. Only language proficiency and origin countries were accounted for in the threshold equations when estimating the generalized ordered model.

Results

The distribution of the self-reported health outcome for the whole population and for the various origin groups is described in Table 1. On average, the proportion of respondents in poor health amounted to 12.5%. For fair, good and very good health, the respective values are 35.2%, 38.9% and 13.5%. A crucial result of the PRI survey is that there are large differences in self-reported health status among the various origin groups.

As shown in Table 1, 29.3% of immigrants from northern Europe reported that they were in very good health, compared with 10.3% of Southern Europeans. Immigrants from southern Europe (14.1), northern Africa (14.6%) and the Middle East (12.5%) reported higher than average (12.5%) proportions of respondents in very poor or poor health. Conversely, the proportion of healthy respondents was higher than average for immigrants who originated from northern Europe, eastern Europe, America and Asia. The proportion of respondents who self-reported that they were in either good or very good health was approximately 80% for northern Europe and 70% for America (average rate 52.4%).

Table 1 also suggests the existence of large differences in health among respondents from the same continent. On the one hand, immigrants from southern Europe were more likely to have poor health status than immigrants from northern Europe; the situation of eastern Europeans was intermediate. On the other hand, with respect to northern Africans, southern Africans were more likely to claim that they were in good health (47.5% vs 32.9%, respectively) or very good health (17.4% vs 11%, respectively). The differences between countries of origin were very similar when considering men and women separately (Fig. 1).

As expected, men indicated that they were in good or very good health more often than women (55.8% vs 48.3%). The three origin groups characterized by the highest proportion of respondents in poor health were southern Europe, northern

Table 1 – Descriptive statistics of the sample, by origin country: Passage à la Retraite des Immigrés survey, 2003.

Variables		Northern Europe	Southern Europe	Eastern Europe	Northern Africa	Southern Africa	America	Middle East	Asia	All
<i>Dependent variable</i>										
Self-rated health	Very poor/poor	0.041	0.141	0.112	0.146	0.074	0.048	0.155	0.058	0.125
	Fair	0.158	0.364	0.242	0.415	0.277	0.248	0.367	0.337	0.352
	Good	0.509	0.392	0.506	0.329	0.475	0.416	0.335	0.411	0.389
	Very good	0.293	0.103	0.141	0.11	0.174	0.288	0.143	0.193	0.135
<i>Explanatory variables</i>										
Gender	Male	0.390	0.518	0.401	0.594	0.607	0.368	0.586	0.543	0.536
	Female	0.610	0.482	0.599	0.406	0.393	0.632	0.414	0.457	0.464
Age (years)	45–49	0.212	0.193	0.178	0.243	0.409	0.376	0.279	0.344	0.239
	50–54	0.182	0.224	0.245	0.247	0.235	0.248	0.378	0.288	0.241
	55–59	0.243	0.218	0.204	0.207	0.174	0.192	0.187	0.135	0.207
	60–64	0.191	0.163	0.175	0.164	0.121	0.088	0.100	0.117	0.157
	≥65	0.171	0.202	0.197	0.139	0.061	0.096	0.056	0.117	0.157
In couple	No	0.223	0.155	0.227	0.171	0.214	0.256	0.131	0.184	0.175
	Yes	0.777	0.845	0.773	0.829	0.786	0.744	0.869	0.816	0.825
Education	Primary	0.088	0.591	0.245	0.661	0.343	0.136	0.506	0.233	0.517
	BEPC	0.088	0.168	0.119	0.135	0.129	0.064	0.127	0.156	0.142
	BEP-CAP	0.158	0.142	0.197	0.092	0.079	0.040	0.080	0.058	0.116
	Baccalaureate	0.164	0.049	0.123	0.052	0.140	0.144	0.060	0.206	0.078
	High education	0.502	0.050	0.316	0.061	0.309	0.616	0.227	0.347	0.148
Occupation	Self-employed	0.092	0.077	0.045	0.057	0.047	0.008	0.112	0.077	0.068
	Executive	0.300	0.058	0.123	0.036	0.129	0.272	0.084	0.163	0.086
	Intermediary	0.218	0.113	0.152	0.070	0.124	0.208	0.064	0.107	0.108
	Employee	0.234	0.267	0.260	0.179	0.306	0.288	0.104	0.270	0.231
	Worker	0.097	0.436	0.394	0.478	0.354	0.168	0.454	0.331	0.409
	Inactive	0.059	0.050	0.026	0.181	0.040	0.056	0.183	0.052	0.099
	Household income	Quartile 1	0.128	0.212	0.204	0.331	0.248	0.176	0.271	0.215
Quartile 2	0.162	0.245	0.260	0.287	0.237	0.176	0.267	0.187	0.250	
Quartile 3	0.214	0.291	0.216	0.222	0.232	0.224	0.227	0.261	0.250	
Quartile 4	0.495	0.252	0.320	0.159	0.282	0.424	0.235	0.337	0.250	
Liquidity constrained	No	0.941	0.913	0.918	0.736	0.689	0.848	0.769	0.853	0.831
	Yes	0.059	0.087	0.082	0.264	0.311	0.152	0.231	0.147	0.169
Any IADL	No	0.950	0.861	0.907	0.842	0.905	0.968	0.829	0.951	0.871
	Yes	0.050	0.139	0.093	0.158	0.095	0.032	0.171	0.049	0.129
Any stay in hospital	No	0.887	0.845	0.851	0.810	0.863	0.864	0.880	0.911	0.843
	Yes	0.113	0.155	0.149	0.190	0.137	0.136	0.120	0.089	0.157
Difficulty in reading	No	0.840	0.632	0.651	0.499	0.712	0.856	0.371	0.525	0.596
	Yes	0.160	0.368	0.349	0.501	0.288	0.144	0.629	0.475	0.404
Duration of migration (years)	<20	0.291	0.027	0.175	0.090	0.243	0.328	0.171	0.261	0.111
	20–29	0.230	0.083	0.134	0.233	0.409	0.440	0.490	0.546	0.214
	30–39	0.216	0.429	0.379	0.340	0.230	0.144	0.167	0.101	0.336
	≥40 years	0.214	0.398	0.204	0.223	0.047	0.056	0.052	0.074	0.258
Number of observations		444	2322	269	2095	379	125	251	326	6211

IADL, instrumental activities of daily living.

Africa and the Middle East for both men and women. The situation was slightly different among immigrants in very good health. Among men, immigrants from northern Europe (33.5%), America (34.8%) and, to a lesser extent, southern Africa (22.2%) and Asia (19.8%) were more likely to be healthy. Among women, immigrants from northern Europe (26.6%), America (25.3%), Asia (18.8%) and eastern Europe (15.5%) were more likely to be healthy.

Of course, differences in self-reported health observed among the various origin groups may simply be due to differences in individual characteristics. Descriptive statistics reported in Table 1 clearly show that there were large and significant differences in the characteristics of the respondents depending on their country of origin.

Northern European immigrants were more likely to be women and were slightly older. They were characterized as having a higher level of education and a higher socio-economic status, and were less likely to have objective health problems. They also had a shorter duration of migration and faced less difficulty in host language proficiency. Immigrants from southern European countries were older than the average respondent. More than one half of them had only completed primary education, they were more often workers or employees, and they had spent more years in France than the other immigrants. Respondents from southern Africa were much younger and more educated, on average, than northern Africans. Among the other groups, the main findings were the similarity between the northern European and

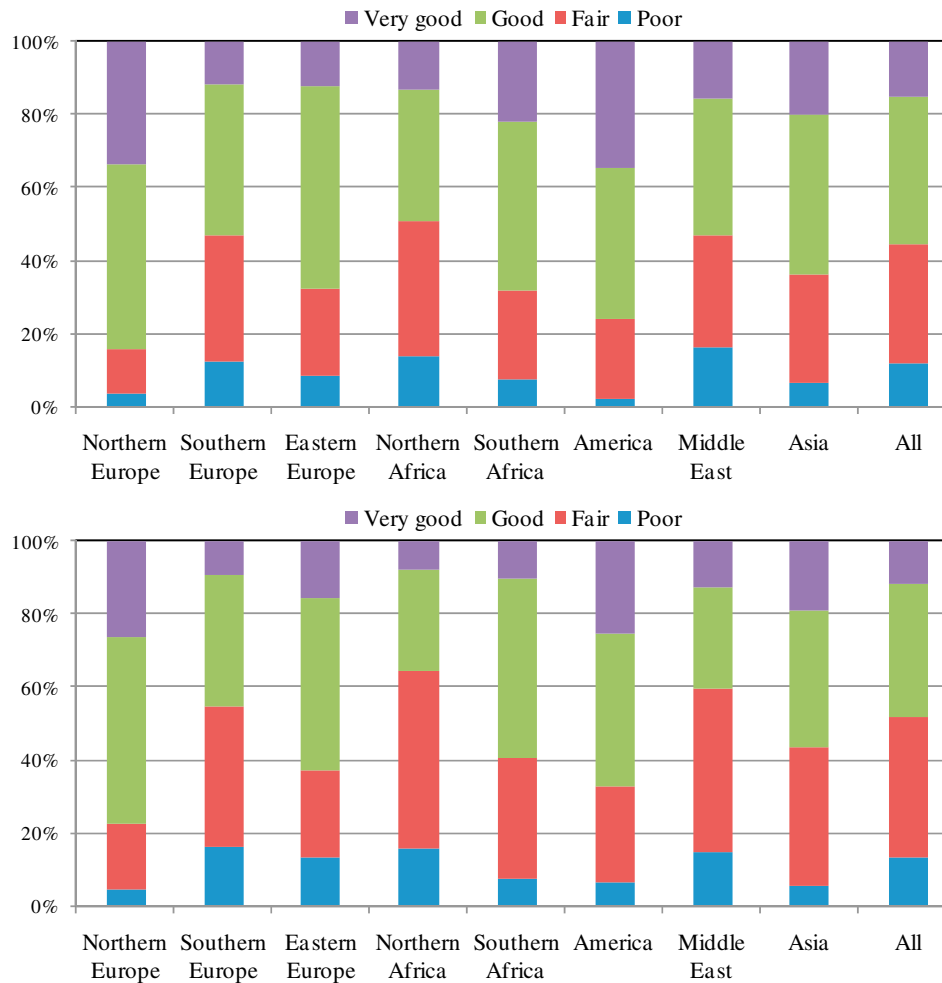


Figure 1 – Differences in self-reported health, by country. Upper figure, men; lower figure, women. Source: *Passage à la Retraite des Immigrés* survey, 2003.

American groups, and the high proportions of men and low-educated migrants in the Middle East group.

Results from the generalized ordered Probit specification are described in Table 2. Regressions for men and women are estimated separately since male and female migrants have different health profiles according to the data. The relevance of this assumption was tested by adding a set of crossed gender-specific variables in a pooled regression (including both men and women). A value of 87.8 was found for the corresponding Chi-squared statistic (with 38 degrees of freedom), statistically significant at the 1% level.

Table 2 indicates a negative relationship between self-reported health and the respondent's age, with a strong decreasing age profile among women. While living as a couple did not affect the health outcome, the various socio-economic indicators had a positive influence in the ordered regression. First, the self-reported measure was positively correlated with the level of education among women, with only the highest education category being significant among women. Secondly, those who were self-employed or executives reported, on average, better health. Thirdly, self-rated health was better, on average, when men and women were in the upper part of the household income distribution (third and fourth quartiles).

Finding a negative relationship between the self-rated measure of health and the two indicators of poor health conditions, for both men and women, was not surprising. Having any limitations with activities of daily living and instrumental activities of daily living, or having spent at least one night in hospital during the last 12 months strongly reduced the health outcome. Furthermore, the self-rated measure of health was better when the parents of the respondent were alive (especially among women) and not in poor health (especially among men). Being healthy was also observed more frequently among immigrants whose parents were either in a fair or a good financial situation during youth, the reference category being a very poor situation.

As shown in Table 2, many country effects had a significant and negative impact when considering the two upper thresholds, respectively, from fair to good health and from good to very good health. In particular, the health status was less favourable among immigrants from southern Europe and northern Africa. Conversely, at the bottom of the health distribution, estimates from the generalized ordered regression indicate that with respect to northern Europeans, only male immigrants originating from the Middle East and female immigrants originating from southern Europe and eastern

Table 2 – Generalized ordered Probit estimates of self-reported health among older migrants: Passage à la Retraite des Immigrés survey, 2003.

Variables		Men			Women		
		Coef	t-test		Coef	t-test	
<i>Coefficients not varying by thresholds</i>							
Age (years) (ref: 45–49)	50–54	–0.127**	–2.15		–0.073	–1.23	
	55–59	–0.262***	–4.04		–0.183***	–2.68	
	60–64	–0.183**	–2.51		–0.269***	–3.37	
	≥65	–0.192**	–2.46		–0.359***	–4.18	
In couple		–0.021	–0.33		–0.025	–0.48	
Education (ref: primary)	BEPC	0.003	0.05		0.117*	1.74	
	BEP-CAP	0.041	0.61		0.302***	3.81	
	Baccalaureate	0.094	1.10		0.211**	2.38	
	High education	0.209**	2.48		0.313***	3.37	
Occupation (ref: inactive)	Self-employed	–0.274	–0.91		0.249*	1.89	
	Executive	–0.314	–1.04		0.431***	3.55	
	Intermediary	–0.272	–0.91		0.079	0.81	
	Employee	–0.381	–1.27		0.146**	2.23	
	Worker	–0.533*	–1.80		–0.004	–0.06	
Income	Quartile 2	–0.017	–0.29		0.074	1.24	
	Quartile 3	0.141**	2.44		0.174***	2.77	
	Quartile 4	0.213***	3.35		0.237***	3.45	
	Liquidity constrained	–0.173***	–3.20		–0.316***	–5.15	
Any IADL	–0.210***	–15.67		–0.246***	–18.78		
Any stay in hospital	–0.541***	–9.77		–0.509***	–8.50		
Father alive	0.017	0.23		0.179**	2.56		
Mother alive	0.170***	2.96		0.125**	2.05		
Father in poor health	–0.223***	–3.51		–0.197***	–3.00		
Mother in poor health	–0.178*	–1.88		–0.095	–1.01		
Situation during youth (ref: very poor)	Poor	0.029	0.53		0.094	1.43	
	Fair	0.019	0.36		0.166***	2.73	
	Good	0.188***	2.63		0.277***	3.69	
Duration of migration (ref: <20)	20–29	0.010	0.16		–0.071	–1.12	
	30–39	–0.096*	–1.68		–0.093	–1.42	
	≥40 years	–0.032	–0.49		0.036	0.50	
<i>Thresholds varying</i>							
Origin country (ref: Northern Europe)	Southern Europe	–0.201	From poor to fair	–0.523***	From fair to good	–0.385***	From good to very good
	Eastern Europe	–0.194		–0.266		–0.476**	
	Northern Africa	–0.184		–0.524***		–0.227*	
	Southern Africa	–0.059		–0.291*		–0.108	
	America	0.243		–0.332		0.003	
	Middle	–0.488**		–0.591***		–0.264	
	Asia	–0.092		–0.508***		–0.281*	
Difficulty in reading French	0.006		–0.177***		–0.051		
Number of observations			3329			2882	
Log likelihood			–3717.8			–3007.0	

IADL, instrumental activities of daily living.

Note: significance levels are respectively 1% (***), 5% (**) and 10% (*). The t-values associated with the coefficients explaining the threshold levels of the ordered model are not reported.

Europe were more likely to be in poor health. Another result is that respondents with problems in reading French were less likely to be of intermediate health status, for both men and women.

Using the generalized ordered estimates, the normalized indicator of health \tilde{H}_i^{origin} was computed for each origin group. Fig. 2 shows the mean value and the 25th, 50th and 75th percentile values of \tilde{H}_i^{origin} for men and women. This provides a ranking in terms of health of the various origin groups, net of cross-cultural effects. When considering the whole sample, the mean health value was 0.760 among men and 0.736 among women. Among men, the highest mean values were found

among immigrants from Asia (0.786), southern Africa (0.759) and southern Europe (0.750). The better origins in term of health among women were northern Europe (0.787), southern Africa (0.776) and Asia (0.756).

The relative position (ranking first among men and third among women) of Asian immigrants is interesting. On the basis of more objective individual characteristics, the objective health status of immigrants from Asia was better than that suggested by their self-reported answers. An explanation could be that self-reported health often encompasses physical, emotional and spiritual health among Asians.²⁴ Male immigrants from America (0.672) and eastern Europe (0.721), and

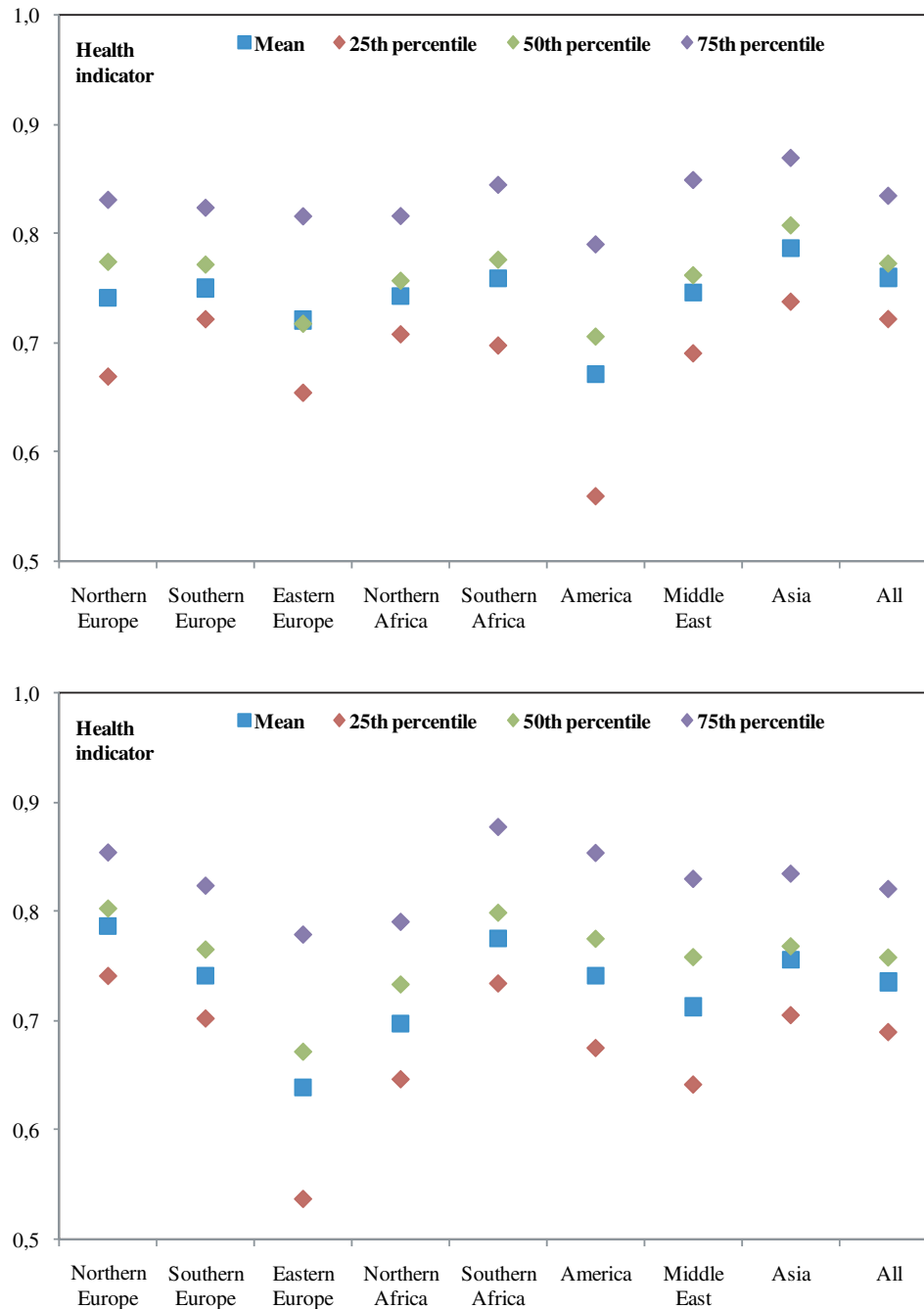


Figure 2 – Measures of the true health status, by country of origin. Upper figure, men; lower figure, women. Source: *Passage à la Retraite des Immigrés* survey, 2003.

female immigrants from eastern Europe (0.640) and northern Africa (0.698) had the worst health status (0.731). A few additional results were observed from the percentile values.

First, the worst health situations were observed among female respondents from eastern Europe; this group being characterized by the lowest 25th percentile value. Secondly, there was more dispersion in health among immigrants from eastern Europe, America and the Middle East. Conversely, there was less statistical dispersion among immigrants from northern Europe, southern Europe and northern Africa. Finally, in the upper part of the health distribution, the highest 75th

percentile value was found among male respondents from Asia (0.870) and the Middle East (0.849), and female respondents from southern Africa (0.878) and northern Europe (0.854).

Discussion

Multi-ethnic societies in Europe are faced with multiple challenges, including the health needs of their different origin groups. In the context of population ageing, there is surprisingly little evidence to date regarding the health status among

immigrant populations living in European countries, whilst there are numerous studies on immigrant health in the USA. This paper has attempted to fill this gap by providing evidence on self-rated health among elderly immigrants living in France using detailed data collected in 2003. Instead of comparing immigrants and natives, this study focused on disparities in health status among different origin groups.

A difficulty with the self-rated health outcome is that this subjective measure may not be comparable across different ethnic groups, particularly because of cultural and linguistic differences. To overcome this difficulty, generalized ordered Probit models were estimated, with language proficiency and country of origin as threshold-varying covariates. This allowed an indicator of health, net of cross-cultural effects to be constructed for each immigrant. With respect to the methodology, the crucial issue is to have accurate indicators of the objective health status of the migrants in order to isolate the cultural differences. Otherwise, the computation of the health index would also pick up differences in chronic diseases or in specific health troubles, such as cardiac problems, diabetes, arthritis, etc.

The comparison of the self-reported health measure will be more relevant with detailed information on objective health. The PRI survey is helpful with respect to this constraint since the authors were able to introduce more objective indicators such as limitations with activities of daily living or any hospital stay, as well as parental characteristics (parents in poor health and alive). At the same time, a shortcoming of the approach concerns the limited number of variables related to origin effects, (i.e. birth country dummies and language proficiency). The different thresholds could also be a function of variables related to the characteristics of the migrant's family.

The diversity in health status within the immigrant population is large in France. Even after controlling for differences in socio-economic status and for different perceptions of health depending on language proficiency and country of origin, significant differences were still found in the health status of the different immigrant groups. Generally, male immigrants from Asia and southern Africa, and female immigrants from northern Europe, southern Europe and Asia were more likely to be in good health, while the health status was lower among immigrants from eastern Europe.

Due to the diversity of immigrants, this study found that there is an appreciable difference when comparisons are made by country of origin. Interestingly, similar results were found for older immigrants living in the USA. As they stand, these results have important health policy implications as they may be helpful to target the more disadvantaged origin groups and to adjust the provision of health care. For instance, one could propose free doctor consultations for both male and female migrants from eastern Europe, since they generally have lower self-reported health (after controlling for cultural differences). Nevertheless, for that purpose, it would be useful to have more information regarding the use of public services by the different immigrant groups. There is clearly a need to collect more detailed data on health among the various ethnic groups living in European countries.

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Competing interests

None declared.

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