Migration and the Risk Transition: the Influence of Time on Health of Migrant Communities in Belgium

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Immigrant health is often considered being the result of selection mechanisms and acculturation. A central issue is the influence of time and several studies tried to evaluate immigrant health by duration of stay in the host country. But the time dimension is proving to be very difficult to assess. We are not only confronted with the classical problems of age and birth cohort with their dual significance (Ryder, 1965), but also with the concept of migration cohorts. Immigration itself is much more than an event occurring in space with migrants moving between countries. Immigrants can in many cases be considered as time travellers, not only coming from another country, but also from another stage in the epidemiological transition of humanity. Health questions of the Belgian 2001 population census linked to register data on place of birth, date of arrival and mortality are used to explore the change in health in migration cohorts and to formulate some hypotheses.

Objectives

Using the health questions of the 2001 census we want to assess the influence of the duration of stay in Belgium on health for migrant communities. Previous research proved self perceived health to be a strong predictor for mortality in migrant populations in Belgium. Control for socio-economic status demonstrated also clearly that health inequalities in migrant communities are predominantly determined by socioeconomic inequalities.
When analysing the influence of the duration of stay migrants are in better health upon arrival than the Belgian born population and this health advantage disappears over time. Using the census data we tried to analyse this phenomenon for migrants from the most important national groups: Italian, Moroccan, Turk and Spanish. The objective was not only to measure the actual health status but to assess the importance of the duration of stay on the health status by birth cohort and by age at migration for these migrant communities.

Background and data

The introduction of health questions in the Belgian census offers the opportunity to measure health for the total population and consequently permits the analysis of small subpopulations and the use of a vast array of socio-economic covariates. Moreover, the possibility to link the census data to the population register creates a huge high quality database enabling the analysis of the relationship between health indicators

and mortality through individually linked records. The national population register guarantees that essential information as exact date of birth, nationality, nationality at birth, date of registration in the register and eventual dates of emigration or death are very accurate. Covariates such as educational level, house ownership or level of domestic comfort are based on the census form.

The present analysis looks into the self assessed health and mortality patterns of the largest migrant communities (i.a. Italian, Spanish, Moroccan and Turk), compared to the Belgian native population and tries to assess the influence of the duration of stay in Belgium on health and mortality.

In the 2001 census in Belgium self-assessed health is measured by a single question: "How is your health in general? Very good, good, fair, poor, very poor." The question has been answered for 9,037,736 persons (response rate 92%). Self-assessed health (SAH) has been dichotomized: 2,266,391 or 25% of the respondents perceiving their health as less than good.

These census data have been linked to registration records of all deaths and emigrations between the 1st of October 2001 and the 1st January 2004. Thanks to Statistics Belgium a direct individual link has been established with register data. During this 27 month follow-up 195,843 deaths have been registered.

The census data cover the core socio-economic indicators. There is no information about income, but dwelling quality and comfort can be considered as a good proxy for wealth or accumulated income.

Persons are assigned an educational level according to the highest diploma they obtained. The basic ISCED classification is used. In addition, a distinction is made between general, technical and vocational secondary education.

Occupation and activity status are introduced in the economically active age groups but are not present in the larger model including the population aged 25 till 74. Occupation in the census form makes a distinction between manual workers and employees in the private sector, but not in the public sector. The question makes no distinction inside the groups of manual workers or employees.

Migrant communities are defined by their country of origin. Persons who acquired the Belgian nationality are reclassified according to the nationality of origin. Children are classified according to the nationality of the reference person of the household. According to this classification 16% of the Belgian population can be considered as belonging to migrant communities.

Statistical analyses and results

Prevalence of less than good health by nationality of origin is computed and presented by age and gender. A summary measure is constructed by means of directly standardised prevalence rates for each nationality and for both sexes separately. Direct standardisation by age was done by using the Belgian population as a standard.

The prevalence of ill health at a given age in a population reflects the accumulation of health threatening events during the life course of the specific birth cohort. Our assumption is that at the individual level, health can become worse or can improve over time and thus by age. At the population level however, health can improve over time in exceptional conditions, but is inevitably worsening by age. So, we can consider the proportion of people in less than good health at age X on point in time Y as the health status attained by a particular cohort. The age-specific prevalence's in good or bad health of a subpopulation can thus be considered as the health progression by age for this subpopulation. This is very parallel with the basic assumptions for the application of the Sullivan health expectancy. Evidently changes in incidence violate this assumption.

Prevalence of less than good health by nationality of origin can thus be computed and presented by age and gender as synthetic cohorts. Inside each nationality it is also perfectly possible to construct health curves by age for different migration periods. We have to be aware of the limited possibilities in interpretation using only one observation of health and retrospective data of migration histories. But although we cannot prove causal inference as we do not know the health status at onset, we can draw some conclusions based upon our assumptions.

Introducing a time component creates the problem of the dual influence of time. To make a distinction between the influence of biological time (age) and the duration of stay, we analysed the data by comparing identical birth cohorts of different migration periods. The Belgian born population of each national group was used as reference group. If age is the dominant factor prevalence rates of less than good health by birth cohort have to be identical regardless the age at migration.

Prevalence of less than good health by nationality of origin shows impressive differences in health between the different migrant communities. The slopes by age and gender indicate a high internal consistency and stress the importance of the influence of health factors over the life course. High prevalence of poor health can be found in all nationalities that are part of the typical labour migration, independently of the observed mortality rates in the same populations.

But the patterns of the influence of time appear to be very country specific. A general pattern can be found in all national groups with health upon arrival being better than among the Belgian born reference group. But if we look at the data from another perspective, using age upon arrival as an entry point, there appears to be a specific pattern for nationalities initially coming as labour migrants to Belgium with being a young adult at migration influencing health negatively.

Using a double standardization with the Belgian population as reference we are also able to detect diverging health patterns inside the Belgian born populations of different national origin. Whereas self assessed health among the population of Italian origin is improving over time, this is not the case for the Moroccan community.

The specific risk pattern of each nationality seems to be a plausible explanation for the emerging divergences. These risks patterns are the result from a complex set of historical, cultural and socio-economic factors. Early-life conditions in the country of

origin, actual life conditions compared by the host country, but also the interaction with the health care system of the host country and the socio-economic status, all contribute to the final outcome.

N. Bossuyt, et al. (2004). Socio-economic inequalities in health expectancy in Belgium. *Public Health* 118: 3-10.

A. Case and C. Paxson (2005). Sex Differences in Morbidity and Mortality. *Demography* 42(2): 189-214.

Y. Courbage and M. Khlat (1996). Mortality and causes of death of Moroccans in France, 1979-91. *Population* 8: 59-94.

P. Deboosere and S. Gadeyne (2005). Adult Migrant Mortality Advantage in Belgium: Evidence Using Census and Register Data. *Population* 60(5-6).

S. Gadeyne and P. Deboosere (2002). *Socio-economische ongelijkheid in sterfte op middelbare leeftijd in België. Een analyse van de Nationale Databank Mortaliteit*. Brussels, Statistics Belgium.

A. Kouris-Blazos (2002). Morbidity mortality paradox of 1st generation Greek Autralians. *Asia Pacific Journal of Clinical Nutrition* 2002(11): 569-575.

M. Lindström, et al. (2001). Ethnic differences in self reported health in Malmö in southern Sweden. *Journal of Epidemiology and Community Health* 55(2): 97-103.

J. Y. Nazroo (1998). Genetic, cultural or socio-economic vulnerability? Explaining ethnic inequalities in health. *Sociology of Health and Illness* 20(5): 710-730.

A. Palloni and E. Arias (2003). A re-examination of the Hispanic mortality paradox. *CDE Working Paper* 2003-01: 62.

A. Palloni and E. Arias (2004). Paradox Lost: Explaining the Hispanic Adult Mortality Advantage. *Demography* 41(3): 385-415.

O. Razum, et al. (1998). Low overall mortality Turkish residents in Germany persists and extends into a second generation: merely
a healthy migrant effect? *Tropical Medicine and International Health* 3(4): 297-303.

S. A. Reyneveld (1998). Reported health, lifestyles, and use of health care of first generation immigrants in the Netherlands: do socioeconomic factors explain their adverse position? *Journal of Epidemiology and Community Health* 52(5): 298-304.

R. Sadana (2002). Development of standardized health state descriptions. *Summary Measures of Population Health*. C. Murray, J. A. Salomon, C. D. Mathers and A. D. Lopez. Geneva.

E. Wiking, et al. (2004). Ethnicity, acculturation, and self reported health. A population based study among immigrants form Poland, Turkey and Iran in Sweden. *Journal of Epidemiology and Community Health* 58(7): 574-582.