Higher Mortality and Different Pattern of Causes of Death Among Foreign-Born Compared to Native Swedes 1970–1999

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In a previous Swedish longitudinal study of mortality among 723,948 foreign born and native-born Swedes, 1970–1999, increased mortality was found among foreign-born persons. This study describes and analyses the differences in mortality between 361,974 foreign-born persons and 361,974 native Swedes during the period 1970–1999, based on data from Statistics Sweden and the National Board of Health and Welfare. The mortality pattern showed dissimilarities; with a significantly higher number of deaths among foreign-born persons in six diagnose groups and a significantly lower mean age at time of death. A high number of deaths were found for migrants from Denmark in Neoplasm, for migrants from Finland and Poland in Diseases of the circulatory system and for migrants from Yugoslavia in Symptoms, signs and ill-defined conditions. There is a tendency to a more similar pattern between foreign- and Swedish-born persons over time. Migration may be a risk factor for health, and therefore seems to be an important factor to consider when studying morbidity and health and when planning preventive work.

KEY WORDS: Sweden; transients and migrants; mortality; causes of death; longitudinal study; public health; epidemiology.

INTRODUCTION

In a previous longitudinal study of mortality among 742,668 foreign- and native-born Swedes, 1970–1999, increased mortality was found among foreign-born persons (1). The mortality risk was higher for the total group of foreign-born and especially high for persons from the Nordic countries and all Europeans except for females from Germany and Yugoslavia (1). The differences in mortality could indicate differences in causes of death among foreign- and native-born Swedes, so this needs to be further studied. Earlier studies of mortality among foreign- and native-born persons have shown contradictory results. Low mortality among foreign-born has been found in several cross-sectional international studies (2–5). Swedish studies have shown increased mortality among foreign-born persons from the Nordic countries, particularly Finns (6), but the same mortality as native Swedes was found for other foreign-born persons (7).

The number of foreign-born persons living in Sweden today is slightly more than 1 million or 11.5% of the total population (8). The migrant population in Sweden today represents about 140 different nationalities but is dominated by labour migrants from the Nordic countries, especially Finland, and European countries like Yugoslavia, Germany and Poland (8).
The pattern of causes of death among immigrants and the native population has been studied both in international and in national studies, with a predominately cross-sectional design and shown varying results. Low risk has been found among foreign-born persons in the USA for death from cardiovascular diseases, heart diseases, and atherosclerosis and overall cancer (5). Studies from the UK, Australia and the Netherlands have shown different patterns of causes of death between different groups of foreign-born persons (9–11). In Sweden increased risk of mortality from circulatory diseases and coronary heart disease has been shown for women born in Finland and Eastern Europe (6) and also an increased risk of coronary heart disease among men born in Finland (12). Thus, in an international perspective there is a need of longitudinal studies concerning the pattern of morbidity and mortality.

The reasons for migration differ but two main reasons can be distinguished. One is the more ‘voluntary’ labour migration due to economic ‘pull and push factors,’ the other is people who migrate as refugees due to oppression, persecution or disaster. Migration to a new country starts processes of acculturation and adaptation, which have a strong influence on health among migrants (13, 14).

The aim of this study is to describe, compare and analyse the pattern of causes of death among foreign- and Swedish-born persons during the years 1970–1999. The pattern will be discussed in relation to country of birth, year of birth and time of death.

MATERIAL AND METHODS

The study population consisted of 361,974 foreign-born persons aged 16 years and upward who were registered as living in Sweden in 1970, together with 361,974 matched Swedish controls for each person. This database was originally set up by CAFO (Centre for Labour Market Research) at Växjö University. The data came from Statistics Sweden (SCB) and the National Board of Health and Welfare Centre for Epidemiology, covered the period 1970–1999 and included all foreign-born persons registered as living in Sweden in 1970. A Swedish matched control could not be found for 20,518 of the foreign-born persons due to the matching criteria.

Age (±3 years), sex, occupation, type of employment and living in the same county in 1970 were matching criteria. Three groups were used to describe type of employment: government, municipal or other employer. County represented all the 25 different geographical areas in Sweden and occupation was coded according to the Nordic Occupation Classification System (NYK). All data originated from the National Census of 1970, which was a total census and related to the situation on 1 November 1970. By using data (up to 31 December 1999) from the National Population Register (RTB) a cross-check was performed and each person was assigned a code if they were deceased, still living in Sweden, had emigrated or if no information was available. Information from the National Board of Health and Welfare, Centre for Epidemiology on cause of death was added to the database. Of the total 906,564 people that were included, 50% were foreign-born.

Exclusion criteria were if no information was available or if a person had emigrated or migrated back (re-migrated), thus in total 163,896 persons were excluded from the database. Persons were then also excluded if the information from the control subject was missing due to migration. The database used for analysis finally consisted of 723,948 persons. Causes of death were registered according to the system of International Classification of Diseases (ICD) revision 9 (1997) or 10 (1998).

The analysis involved first a comparison of the total group of foreign-born with the total group of Swedish controls and secondly a comparison of groups of foreign-born from specific countries or regions with their specific controls. Natives from the following countries have been studied in particular: Denmark, Finland, Norway/Iceland, Yugoslavia, Poland, Germany, other European countries and Non-European countries. The rationale for studying the selected countries was that increased mortality had been shown among these migrant groups in previous analyses and that they constitute the dominant groups (74.9%) of all migrants in Sweden included in the database during the studied period.

Statistical Analysis

Values are given as numbers, means (range) and percentages. Comparisons were made by tests of significance with Pearson’s chi-squared test (2-sided) and Mann–Whitney U-test. A value of \( p < 0.05 \) was considered statistically significant (15). All analyses were performed using SPSS (Statistical Package for Social Sciences), version 11.5.