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WIFO Working Papers, No. 206
September 2003

Paper presented at the Eighth International Metropolis Conference, September 15 to 19, 2003, City of Vienna, Austria, at the Workshop: Globalization: Migration, Diversity, and the Challenge of Health Disparities

Socio-Economic Determinants of Health and Identification of Vulnerable Groups in the Context of Migration: The Case of Austria

Gudrun Biffl*

Abstract

There are marked differences in health conditions of the Austrian population by socio-economic status, gender, age, education, occupation and income as well as by nationality. The low educational attainment of migrants, their concentration in particular occupations and industries and their above-average unemployment rate, are associated with an above-average morbidity rate of middle aged and older migrants. In addition, migrants exhibit another pattern of diseases than natives. They suffer to a greater extent than Austrians, from heart diseases, allergies, digestive and urogenital and dermatological problems. This may be partly the result of the particular stress situations they face in the work place and the community at large.

The community in Austria and particularly in Vienna, face not only the challenge of the socio-economic integration of largely less skilled migrants but also of providing adequate health services not only for the ageing Austrian population but also for an ageing migrant population.

* Thanks are due to ESF/Equal for funding the research. I also acknowledge the competent research assistance of Paul Scheibelhofer.

Introduction

Unlike Anglo-Saxon countries and Germany. (BMSG, 2001, Pochbradsky et al., 2002), analysis of the relationship between socio-economic status and health are only at its infancy in Austria. This is due to lack of comprehensive data on the one hand, and the general belief on the other, that Austria's universal access to health services¹ should remove any potential differences in health between socio-economic groups. This is, however, not the case. Austrian experience suggests that free access to health services and thus equal opportunity, independent of income level, cannot eradicate differences in health patterns by socio-economic group. There are considerable differences in the incidence of sickness, the pattern of diseases and the duration of episodes of sickness by age, gender, education and social status. Migrants have somewhat different health records than Austrians. The factors responsible for these differences are followed up in the present paper.

First, an overview of the long-term development of morbidity rates (days of sickness over one year) by demographic group and social status is given. The data base is a survey of the health record of the population, which has been added onto the regular (quarterly) labour force household survey (micro census) 4 times since 1973 (1973, 1983, 1991 and 1999). The questionnaire has been expanded over time, with 1999 providing the most detailed health record of the population by demographic and socio-economic status as well as by health conscious behaviour. The health survey of September 1999 allows the matching of data with the household survey of June, which included a question on income and occupational health hazards. Thus, for 1999, health patterns can be differentiated by income group, social status, educational attainment, occupational health hazards and degree of health awareness for Austrians as well as for foreigners by age and gender.

The health record of migrants can only be followed up as long as they have not adopted the Austrian citizenship. In 1999, the major part of the 748,200 foreigners (9.2 percent of the Austrian population, of which 45 percent are from former Yugoslavia and 18 percent from Turkey) were recent immigrants, in particular refugees and migrant workers from former Yugoslavia and migrant workers and their families from Turkey. In the conglomerate 'others', citizens from the EU and from CEECs (Central and Eastern European Countries) make up the

¹ 99 percent of the resident population in Austria are entitled to health services on their own account, in the main as a result of insurance covered employment or family linkage with an employed person (Mitversicherung); the only group of persons without a direct personal health insurance coverage are recipients of social help (Sozialhilfe) and prisoners. They are covered against sickness via the communities/institutions. Low income persons are exempt from paying pharmaceutical prescription fees and other medical expenses. As practically the whole population gets health coverage through the public health insurance system, only a relatively small proportion of the population (about one third) has in addition, a private supplementary health insurance scheme, often co-financed by employers. This allows one to access medical doctors who do not have a contract with the health insurance service, and/or obtain better facilities (single room in the hospital); in addition, waiting times for non-urgent cases of surgery can be reduced by paying extra, i.e. out of the supplementary insurance scheme.

major part. During the 1990s, Austria had, together with the Netherlands and Luxembourg, the highest population growth rate in the EU. In Austria, population growth was entirely the result of increased immigration flows (*Biffi et al., 2002, Biffi, 2002A*).

Next, the differences in morbidity rates by socio-economic status are examined; then the paper considers the role of employment and education policy as well as health awareness measures for the improvement of the health record of socio-economically disadvantaged groups such as newly arrived migrants.

Stable morbidity rate since the early 1980s

In order to arrive at a complete picture of the health situation of a population, one must go beyond administrative health statistics, which range from mortality rates, spells of sickness registered with the various social security services, absenteeism from work due to sickness/injuries (*Biffi, 2002B*), to consumption of health services. What is not available from administrative statistics are the subjective feelings of wellbeing, health behaviour patterns, e.g., eating habits (healthy food), regular physical exercise, smoking habits, obesity, regular health checks etc., together with information on stress factors at the workplace and income. Household surveys provide that additional information.

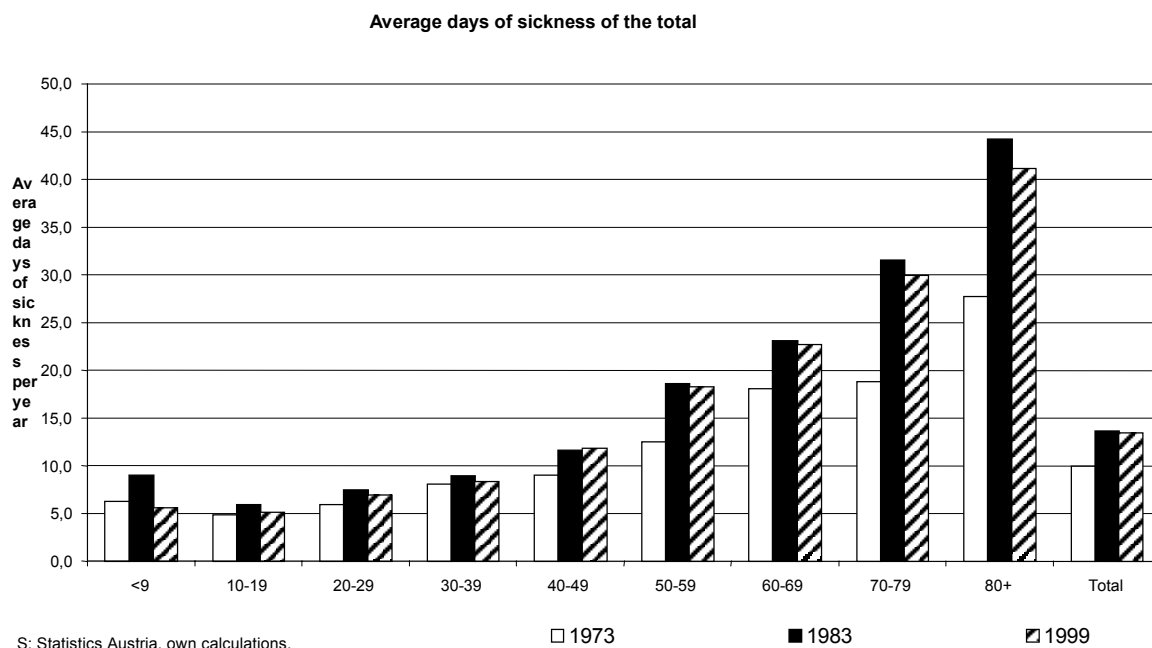
This is the data base for the current paper; the household health survey provides consistent data on socio-economic status, healthy lifestyles and work related stress, which is the focus of the paper. We first calculate the morbidity rate of different population groups, i.e., the number of days of sickness over a year², followed by research into the reasons behind the differences for different population groups.

According to the household survey of September 1973, every person was on average 10 days of the year sick (between September 1972 and September 1973). A decade later (from December 1982 to December 1983), the (weighted) average number of days of sickness per person increased to 13.7 days. In the period 1983 to 1999 the average number of days of sickness per person declined somewhat to 13.4 days. The average number of days of sickness per person is, of course, an artefact. Not every person in the population is sick in the course of the year. In 1973, 58.9 percent of the population was not sick once; the proportion declined thereafter to 53.6 percent in 1983 and 50.3 percent (foreigners 51.3 percent) in 1999. The increasing incidence of a spell of sickness per person is one of the reasons for the rise in morbidity between the early 1970s and 1980s. Another reason is increased longevity. The life expectancy at birth increased between 1973 and 1999 by 7 years, at the cost of rising

² In this context it has to be pointed out that sickness is defined in a narrow medical sense, i.e., medical treatment is needed like in the case of influenza or bronchitis.

average sickness rates – in the main of persons older than 50³. Why the morbidity rate of younger age groups increased between the early 1970s and early 1980s remains unanswered. Accordingly, the age profile of the sickness rate has changed only slightly over time.

Graph 1:



The morbidity rate by age is slightly u-shaped, i.e., children under 5 have higher rates than youngsters between 5 and 15, the age groups with the lowest sickness rates. Thereafter the sickness rate rises exponentially with age. In the year 1999, persons older than 80 tended to be sick on average 41.1 days – compared to 27.8 days in 1973, but 3 days less than in 1983. In contrast, in 1999, 10 to 19 year olds were on average 5.2 days sick (after 6 days in 1983 and 4.8 days 1973).

The average morbidity rate (days of sickness per year) of the total population does not only depend on the age structure of the population and the development of the age-specific sickness rates but also on the development of gender-specific profiles of diseases. In 1973, women had a somewhat lower average sickness rate than men (9.8 days versus 10.3 days for men); however, over time, the sickness rate of women increased faster than of men. In 1983 women were on average 14.1 days sick compared to 13.2 days with men. Between the early

³ The relative mortality rate (adjusted for the age structure) declined in Austria by 18 percent between 1970 and 1995; this was a somewhat faster decline than in the EU on average (*European Observatory on Health Care Systems*, 2000).

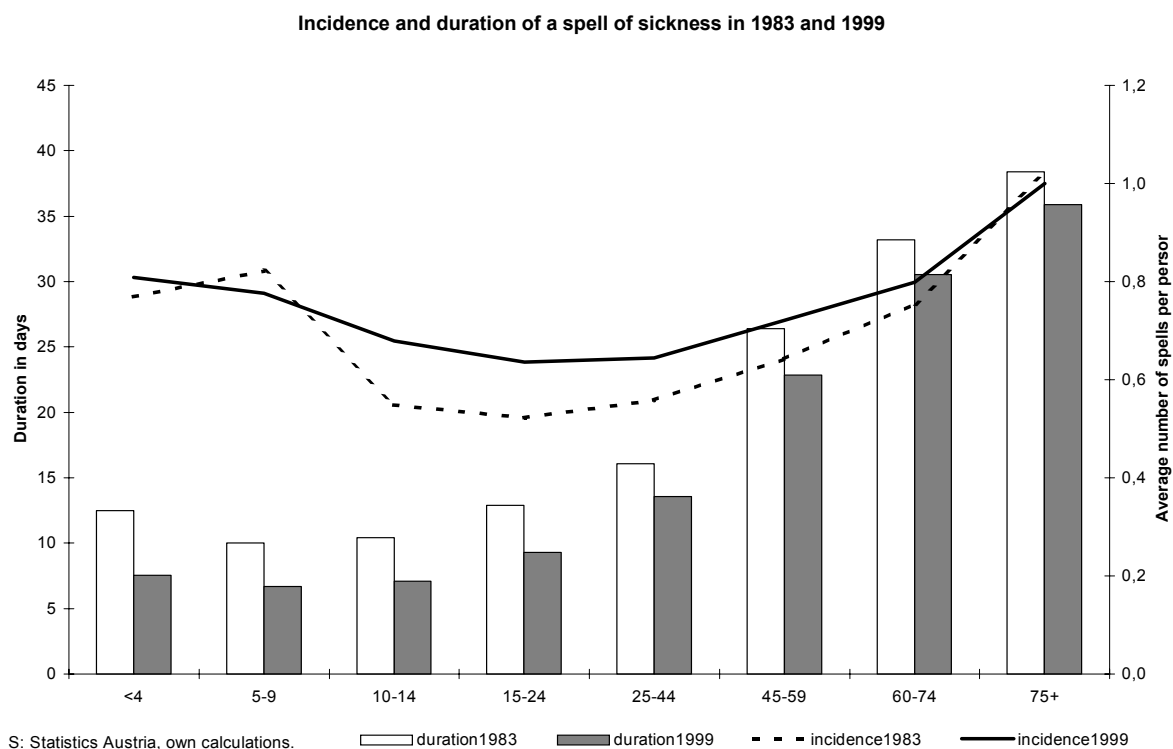
1980s and the late 1990s the sickness rate of men declined somewhat to 11.9 days while it continued to rise in the case of women to 14.8 days.

Adjusting for the age and gender structure of the population between 1973 and 1999, i.e. applying the demographic composition of 1999 to 1973 and 1983, does not change the general picture of the long-term development of the average morbidity rate between 1973 and 1999.

Rising incidence of morbidity but declining duration of a spell of sickness

The morbidity rate can be decomposed into the frequency of spells of sickness and the average duration of a spell of sickness. The age group which experiences the most frequent episodes of sickness are the elderly, followed by small children. However, the average duration of a spell of sickness is comparatively short in the case of children and quite long for older persons.

Graph 2:



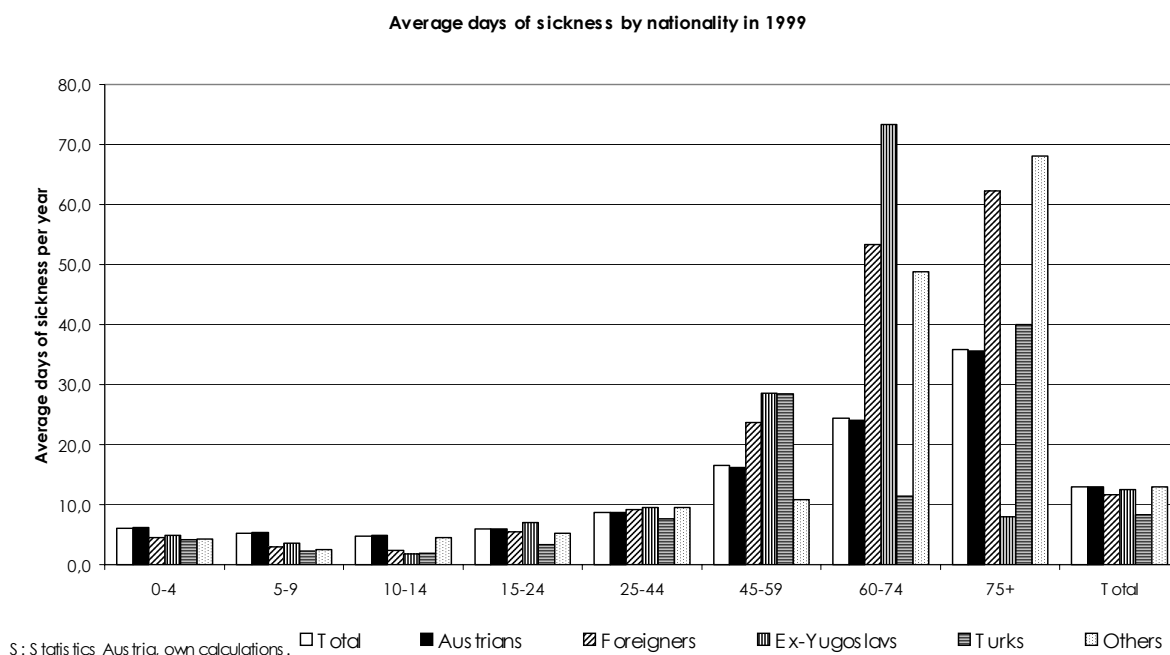
The number of spells of sickness per person increased from an average of 0.4 per person in 1973 to 0.6 in 1983 and 0.7 in 1999. It rose in every age group; the rise was comparatively small in the case of under 10 year olds and most pronounced for the elderly. The average duration

of a spell of sickness remained fairly stable for the whole population between 1973 and 1983. Between 1983 and 1999 it declined for every age group.

Middle aged and older migrants have higher morbidity rates than Austrians

In 1999, foreigners on average had somewhat fewer days of sickness in the course of the year than Austrians, i.e., 11.7 days compared to 13 days. This is in the main the result of an almost complete lack of older persons in the foreign population. While, in 1999, 22 percent of the Austrian population were over 60, only 2.9 percent of the population from former Yugoslavia and 2.2 percent from Turkey were in that age group. The group of 'others' are in-between with 11.1 percent of the population being over 60.

Graph 3:



In order to gain some insight into the morbidity rate of migrants compared to Austrians, one has to look at the age specific morbidity rates. These rates show that foreign children under 10 are on average less sick than Austrian children. This is a debated issue. Medical doctors in schools report that migrant children tend to have psychosomatic diseases to a larger extent than natives (Körber, 2000). To what extent this translates into more actual days of sickness which are underreported by migrant parents remains to be analysed.

In contrast, the morbidity rate of foreigners between 45 and 59 is significantly higher; this is the result of an above average morbidity rate of Turks and persons from former Yugoslavia.

Foreigners from other regions in the world between 45 and 59 have a lower morbidity rate than Austrians, but they constitute only 30 percent of all foreigners in that age group.

The morbidity rate of older Turks (60+) cannot be interpreted properly because of the small sample size. The data indicates that foreigners over 60 (maybe with the exception of Turks) have a significantly higher morbidity rate than Austrians.

It is not so much the incidence of sickness which differs between Austrians and foreigners by age but the spell duration. A spell of sickness lasts on average 23 days in the case of 45 to 59 year old Austrians compared to 32.7 days for persons of former Yugoslavia, 39.6 days for Turks, but only 13.2 days for 'others'. Why this is so, is followed up by looking at the nature of the morbidity.

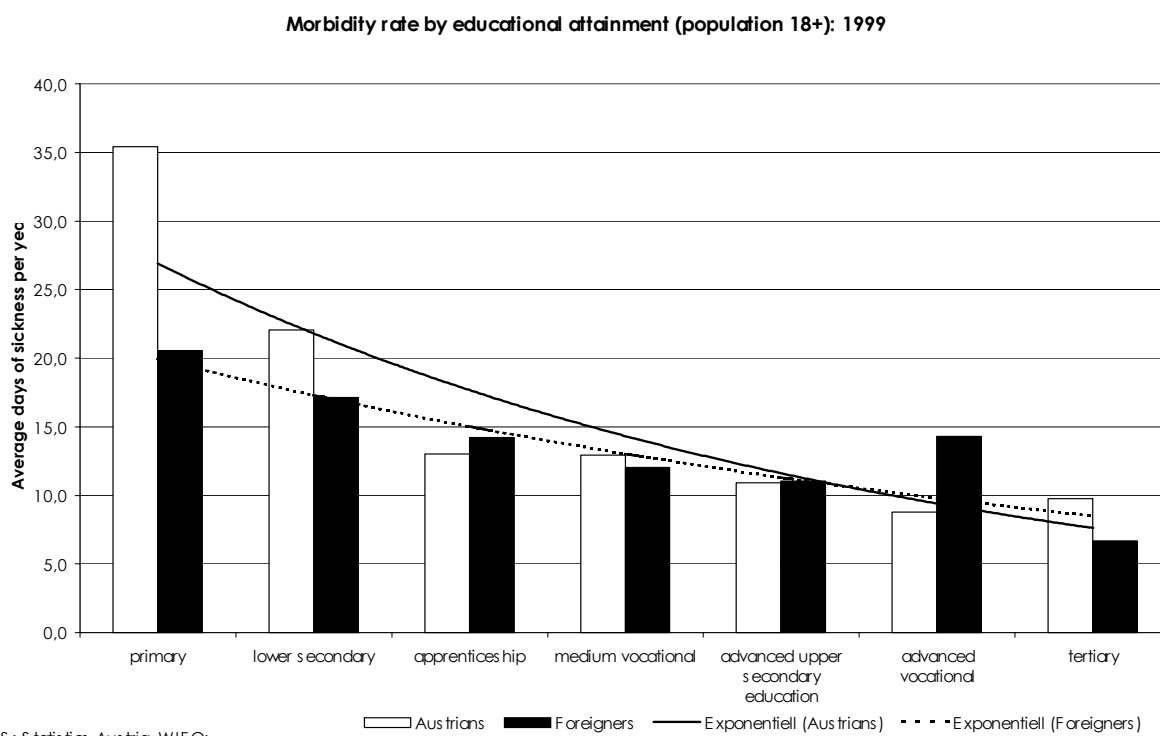
Morbidity declines with educational attainment level

The significantly higher morbidity rate of older persons from former Yugoslavia and Turkey has to be seen in the context of their socio-economic status, in particular their lower educational attainment level – there is a clear decreasing trend of morbidity with rising educational attainment for both Austrians and foreigners.

Low educational attainment level, often in combination with a lack of knowledge of the German language, is a major factor for the integration of migrants, particularly recent arrivals, into the labour market at the lower end of the wage and skill level. The language barrier of non-German speaking migrants may isolate them somewhat from German speaking colleagues at work which may also contribute to a higher morbidity rate.

The decline of morbidity with rising educational attainment is less pronounced in the case of migrants than of nationals. Migrants are to a large extent unskilled- and semiskilled workers. In the case of Turks, 76 percent have compulsory education or less, and 56 percent of persons from former Yugoslavia compared to only 36 percent of the Austrian population in that educational category. This is due to the lower average educational attainment level in their regions of origin: the major part of the recent migrants comes from less developed areas in former Yugoslavia (particularly from Serbia, Bosnia-Herzegovina and Kosovo) and Turkey. Those who came to Austria may well be some of the most dynamic and healthy in that skill bracket in their countries of origin. In contrast, Austrians with less than compulsory education are either older persons, or school drop-outs and persons with severe physical or mental handicaps. They are the Austrian population group with the highest morbidity rates. Their physical, mental or psychological handicaps are at the root of their low educational attainment level and a low degree of integration into the labour market.

Graph 4:



Pattern of morbidity of older workers differs for Austrians and migrants

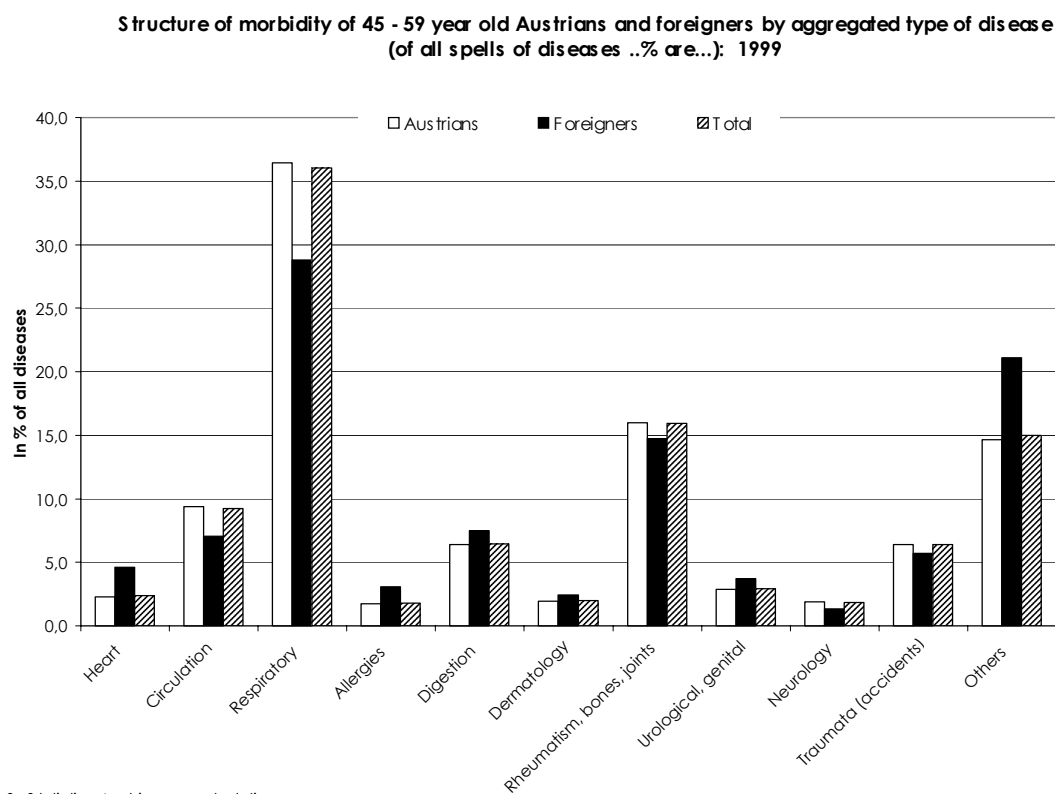
The structure of the diseases of the 45 to 59 year old Austrians and foreigners differs somewhat. One of the explanatory factors is the difference in work patterns and occupations of migrants compared to natives (Biffi, 1985). Migrants are to a greater extent than Austrians in the more physically demanding jobs and in unhealthy work environments. This can be verified by matching the health survey of September 1999 with the June survey, which includes questions on occupational work conditions.

According to this data, a much larger proportion of migrants complain about physically strenuous work than Austrians (18.5 percent versus 13.2 percent). Also the work environment is more hazardous, i.e., working with hazardous chemicals, or under noisy and dusty conditions – 21.6 percent of all migrants compared to 17.9 percent of Austrians complained about that. In contrast, Austrians are working to a larger extent than foreigners under time pressure (23.7 percent versus 18.6 percent), experience more often psychological stress situations (3.7 percent versus 3 percent) and have a somewhat greater need for extreme concentration in their work (6.5 percent versus 6.4 percent).

These different work related demands and health hazards between nationals and foreigners may translate into a different structure of health problems. Foreigners have to a larger extent than Austrians heart diseases; in addition they have more often than Austrians allergies,

digestive and dermatological problems; the latter may be the result of the unhealthy work environment; it may also reflect a different lifestyle, in particular a lower propensity to live a health conscious life.

Graph 5:

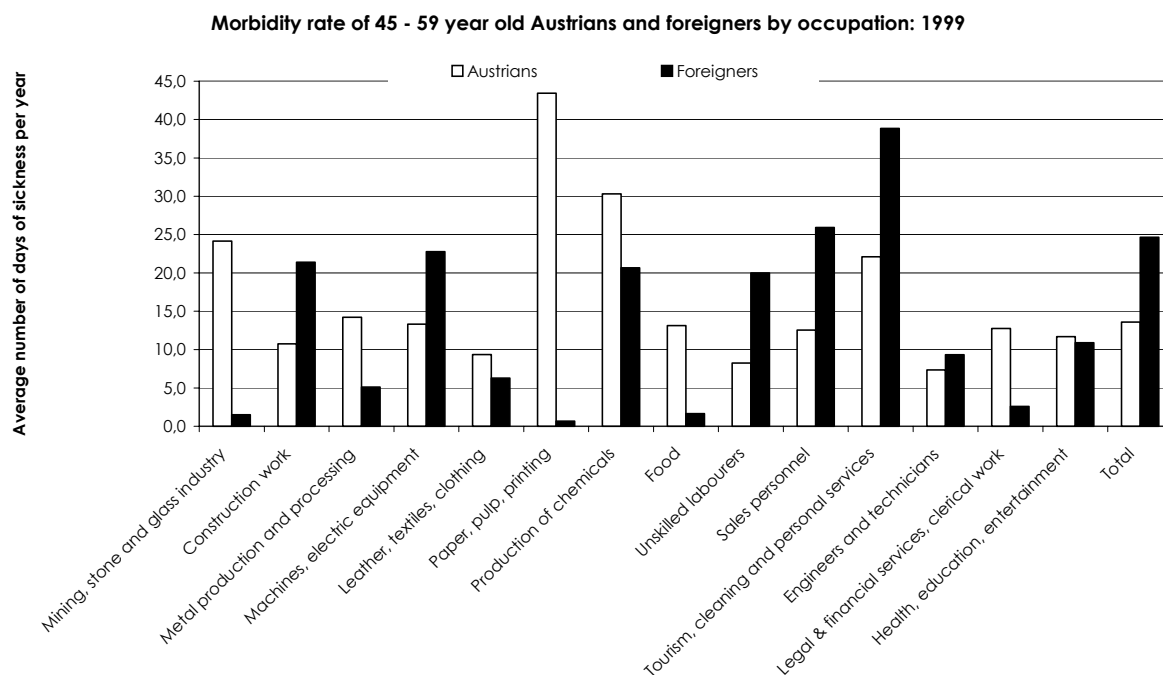


S : Statistics Austria, own calculations.

In contrast, Austrians tend to have more problems with respiratory organs, with rheumatism, blood pressure, the nervous system, and physical traumata (Graph 5).

A look at the occupational morbidity rates of the 45 to 59 year olds confirms the role of the employment structure for explaining the pattern of diseases. Austrians are working in other segments of the labour market than migrants, often in a complementary position, and are thus facing different pressures than migrants (Table 1). Older migrants tend to have much higher morbidity rates than Austrians in construction, machine production and production of electrical equipment, in tourist, personal and cleaning services, as well as in unskilled jobs. These differences warrant a detailed analysis of the role of occupational stress and health hazards on morbidity in a life cycle context.

Graph 6:



S: Statistics Austria, WIFO.

Negative relationship between income and morbidity for 45-59 year olds

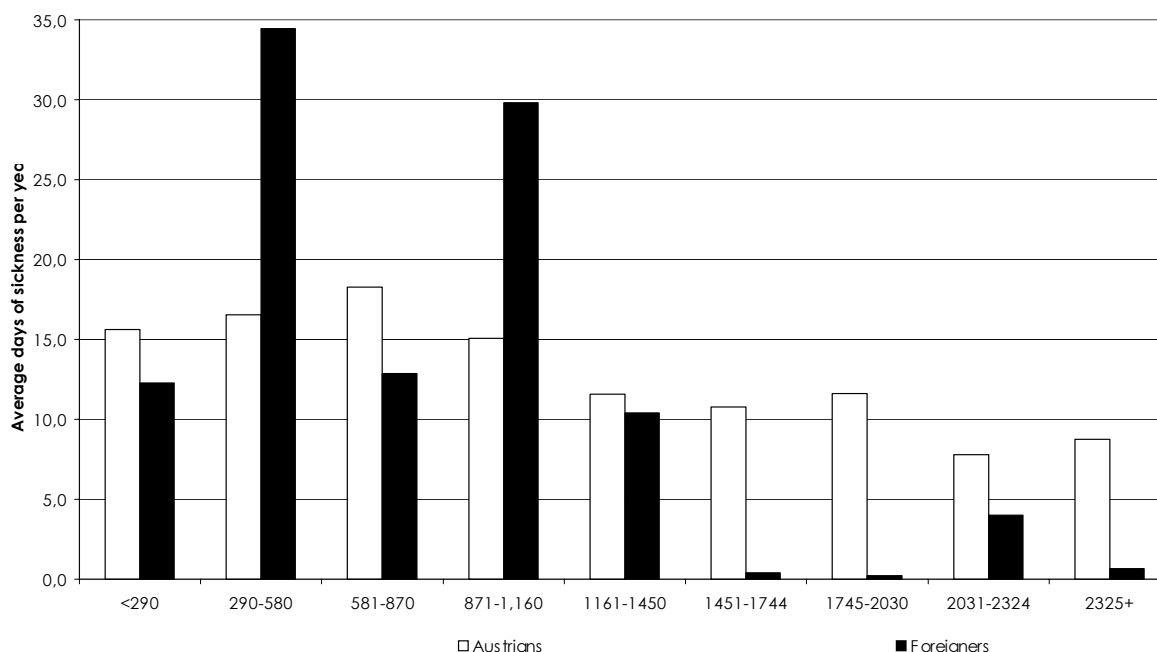
International studies show that income is negatively correlated with morbidity. This is also the case in Austria, but not necessarily for every population group. We first look at the role of earned income, i.e., we ignore unemployed for the time being as they are a particularly vulnerable group which warrants special attention.

Income tends to rise with age up to retirement and then decline; we therefore concentrate on the population of working age, in particular the 45 to 59 year olds, since this is the age group with highly differing morbidity rates between Austrians and foreigners. According to the matched data, the morbidity rate of Austrians in that age group is slightly negatively correlated with income. In the case of foreigners, the situation is more complex. Foreigners tend to be concentrated in special labour market segments, one being low wage, the other in the upper middle income bracket (see Table 1). In the highest income group only a very small proportion of foreigners is to be found. The sample size is too small to give statistically significant information on the morbidity rate of high income earning foreigners. Only 6.8 percent of the employed foreigners but 19.8 percent of the employed Austrians earn more than € 1,450.- per month after taxes in 1999.

According to the matched data files, the morbidity rate of 45 to 59 year old foreigners is highest for persons with a monthly net wage of € 290 to 580, with 34.4 days of sickness on average in 1999. The next highest income group has a significantly lower morbidity rate with 12.9 days of sickness per year and a lower one than the Austrians in that income bracket. In the next highest income group (€ 871 to 1,160 per month), the morbidity rate of migrants rises to 29.8 days a year; the reason behind this ought to be followed up in particular as Austrians of equal age have only half as many days of sickness in that income category.

Graph 7:

Morbidity rate (average days of sickness per year) of 45 - 59 year old Austrians and foreigners by income category (monthly net wages and salaries in €): 1999



S : S tatistics Austria, WIFO.

Thus, the internationally established negative correlation between morbidity and income is faintly established for Austrians but hardly at all for foreigners (if their highest income groups are excluded for sampling reasons). All that said, it appears to be the highly segmented labour market by nationality, which may help explain differences in morbidity rates, rather than income levels. Migrants tend to be concentrated in low wage industries, in particular the clothing, leather and textile industries, in food production, tourism, personal and health services, and in an upper middle income industry, i.e., the construction sector. In business services they tend to be concentrated at the lower end of the wage segment, i.e., in cleaning services. In the high wage segment of chemical industries, foreign workers tend to do unskilled jobs, often in an unhealthy work environment.

Thus, the type of work and the educational attainment level, which determine the earning power, account for the higher morbidity rate of foreigners in the middle to upper middle age group (45 to 59).

Table 1: Median Income by Industry 1980, 1994, 1999 and 2001 and share of foreign workers in employment

	Median income of total employment = 100 (annual average)				Share of foreign workers in percent (annual average)			
	1980	1994	1999	2001	1980	1994	1999	2001
Primary and secondary sector								
Low wage segment					13.9	21.4	23.9	25.3
Clothing	65	69	.	.	9.6	15.3	21.3	21.8
Leather, shoes	68	70	74	75	17.0	19.9	20.8	21.6
Agriculture	83	72	65	65	8.7	19.3	22.1	24.0
Textiles	78	85	83	85	22.1	29.3	29.5	30.7
Medium wage segment					16.1	16.0	16.4	
Wood, furniture ¹	93	92	97	96	4.0	11.9	10.9	11.1
Food, beverages, tobacco	96	95	92	91		13.0	15.1	16.2
Construction	110	110	112	113	7.8	18.7	17.8	18.2
High wage segment					8.8	9.6	10.3	
Printing, publishing	114	126	132	133	4.1	5.7	6.9	7.5
Chemical industry	117	120	122	124	7.2	10.5	12.8	13.5
Stone, glass	118	117	119	120	5.1	11.0	11.7	12.4
Metal industry	117	117	125	126	7.5	9.6	10.3	11.0
Paper, pulp	120	126	.	.	7.5	8.4	8.3	8.7
Mining	139	137	137	136		5.2	5.0	5.4
Energy, water	155	165	167	167		0.3	0.6	0.8
Tertiary sector								
Low wage segment					5.1	13.4	11.6	12.2
Personal services, entertainment ²	60	62	78	78	3.9	26.5	9.8	10.2
Tourism	71	71	69	69	18.4	27.8	26.7	28.1
Health	83	90	89	88	0.5	7.2	7.2	7.4
Trade, repairing	88	89	88	88	3.2	7.8	8.6	9.5
Entertainment, culture, sports	91	91	.	.	2.9	8.6	10.8	11.4
Medium wage segment					3.6	6.6	7.3	
Transport	94	96	97	98	2.7	5.3	7.6	9.0
Business services	93	97	88	90	0.2	6.3	16.5	16.5
Education	83	84	96	96		2.6	2.4	2.4
Public administration	98	99	100	100		2.6	2.4	2.6
High wage segment					0.4	1.3	1.9	2.4
Banking, insurance	113	136	143	143	0.4	1.3	1.9	2.4
All branches	100	100	100	100	6.4	9.5	10.1	10.7

Source: Social Security Department, Federal Ministry for Economic Affairs and Labour, WIFO-calculations. – ¹ Break in the industry classification (BS68 to ÖNACE). – ² Including cleaning services.

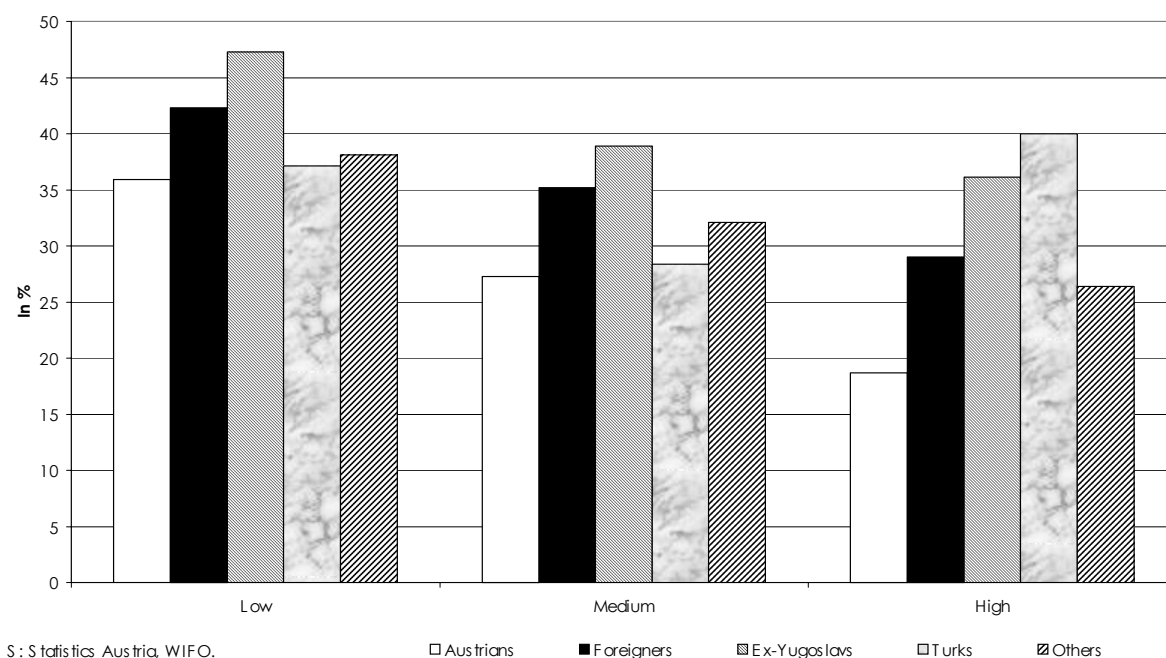
Health conscious behaviour reduces morbidity rate

The question of the lifestyle, in particular health conscious behaviour, has been addressed in the health survey of 1999. According to this data, the propensity to live a health conscious life, i.e., to take active measures to improve the health, increases with educational

attainment level for Austrians and foreigners alike. Austrians are on average more health conscious than foreigners independent of educational attainment level. The proportion of people who do not actively promote their health is highest in the case of Yugoslavs. Only in the case of university graduates does the heterogeneous 'other' group of foreigners surpass Yugoslavs in their negligence concerning health promoting activities.

Graph 8:

Proportion of the population over 18, which does not engage in health promotion activities by educational attainment level and nationality: 1999

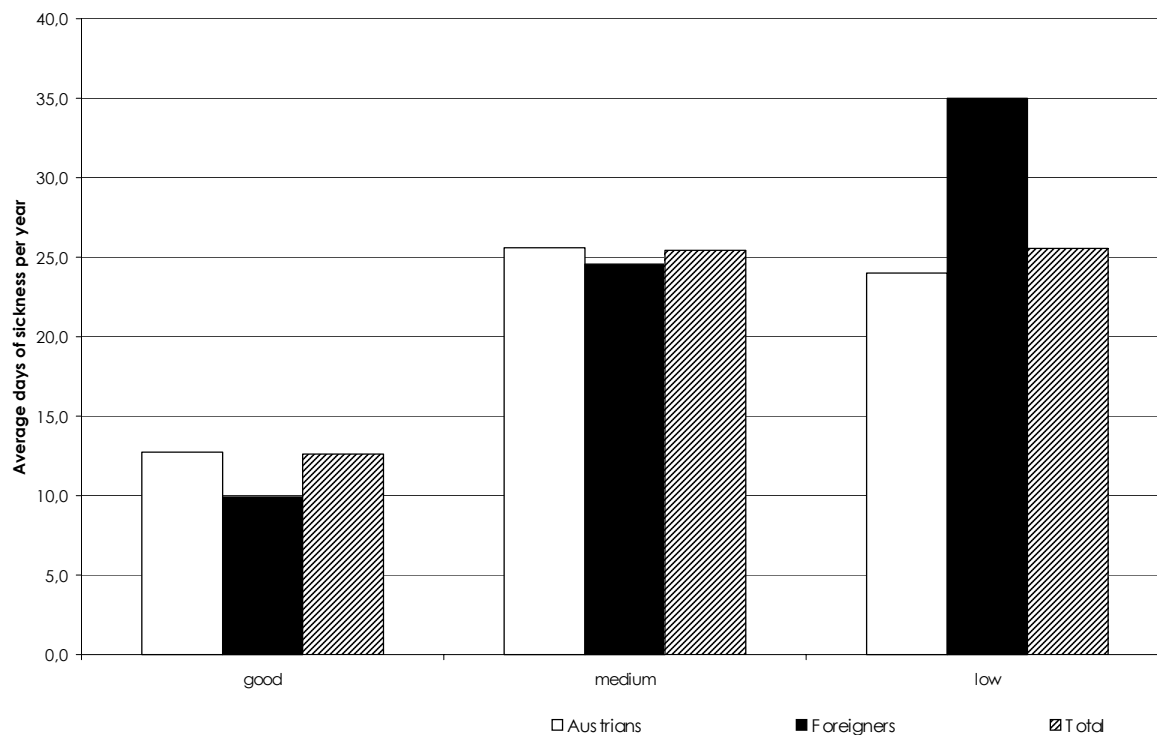


Also bad housing conditions contribute to a higher morbidity rate, both for nationals and foreigners. In 1999, persons living in medium to lower status housing, i.e., 2.4 percent of the population, were significantly more days sick during the year than persons in high status housing⁴. The average morbidity rate of persons living in medium to low status housing is about twice as high as in the case of good status housing (25.5 days compared to 12.6 days a year). In the case of foreigners, the difference in the morbidity rate is even more pronounced than for Austrians. The small sample size does account for a large margin of error concerning the level of the morbidity rate, however.

⁴ High status housing is defined as bath and toilet in the apartment, medium status is without bath, low status is without bath and toilet. 97 percent of all natives and 87 percent of foreigners were living in the first category, i.e., good housing conditions.

Graph 9:

Morbidity rate of nationals and foreigners by housing standard in 1999



S: Statistics Austria, WIFO.

Unemployed have significantly higher morbidity rates than the employed

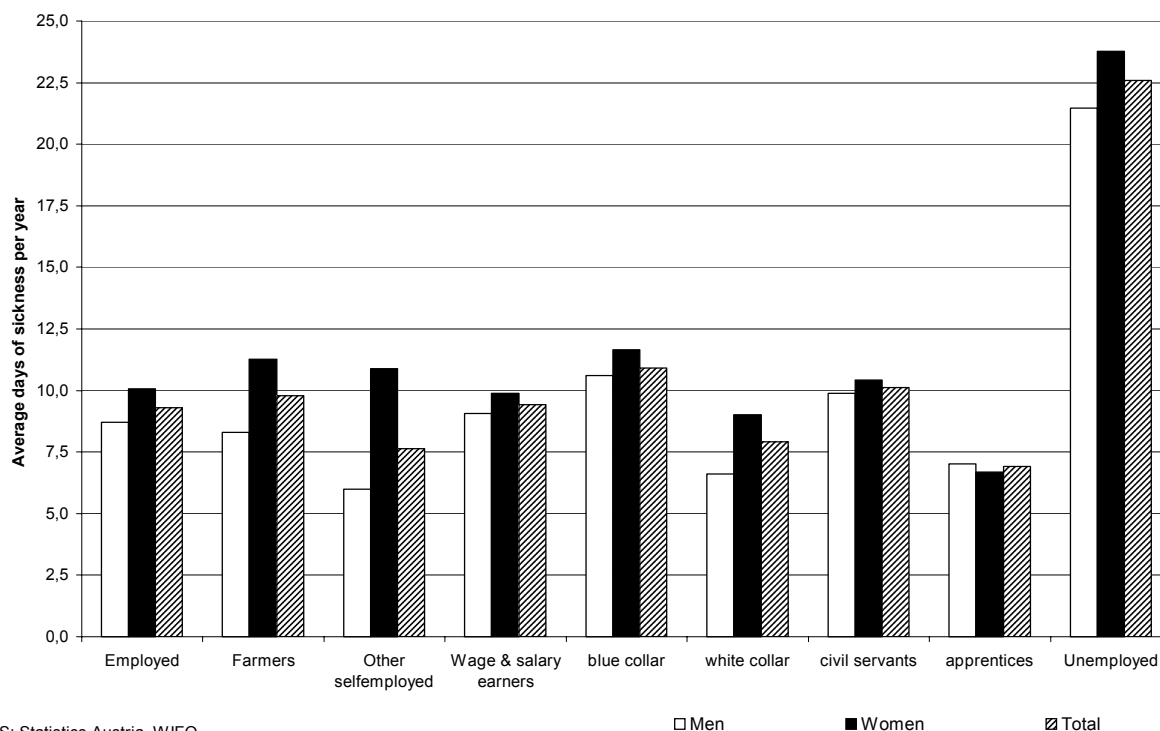
Unemployed have significantly higher morbidity rates than employed persons, independent of age. In 1983 unemployed were on average 18 days a year sick compared to 9.7 days in the case of employed persons. Until 1999 the morbidity rate of the unemployed increased to 23 days, while the average number of days of sickness of the employed decreased somewhat to 9.3 days. Amongst the employed the group with the highest morbidity rate are blue collar workers (Arbeiter) and civil servants with 10.9 and 10.1 days respectively in 1999. White collar workers in the private sector have comparatively low morbidity rates with 7.9 days in 1999, slightly more than the rate of farmers (9.8 days) and persons working on their own account (7.6 days)

The rise in the average morbidity rate of the unemployed between 1983 and 1999 – an average of 5 days per person – is not only due to the rising share of older persons in unemployment (from 46.3 percent of the unemployed in 1983 to 73 percent in 1999) but also

the result of an increasing morbidity rate of over 30 year olds⁵. Only 15 to 29 year olds have a clearly lower morbidity rate in 1999 than in 1983.

Graph 10:

Morbidity rate of the population of working age by gender and employment status in 1999



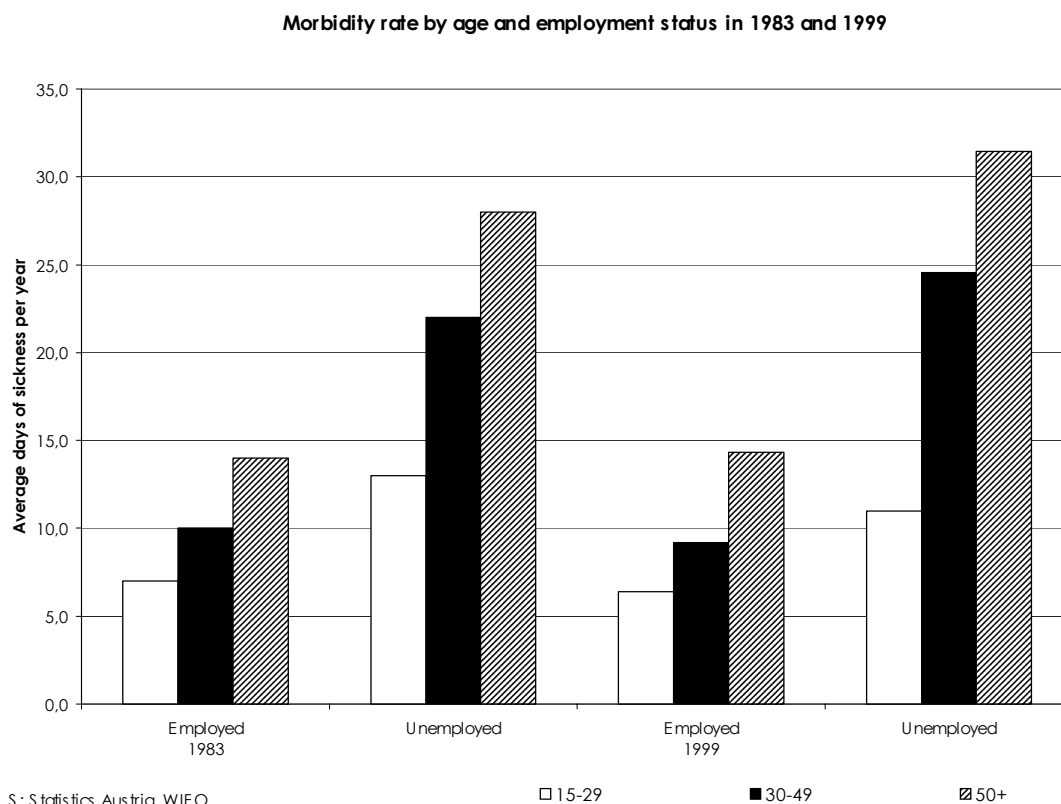
As to the morbidity rate of the employed, there is a slight decline in morbidity rate for every major age group between 1983 and 1999, except for the over 50 year olds: in their case the average number of days of sickness remained stable.

A comparison of the morbidity rate by employment status and nationality shows that employed foreigners do not only have a somewhat higher average morbidity rate than Austrians (11.7 days compared to 9.2 days), but exhibit a higher morbidity rate in every one of the three major working age groups. While the differences are only marginal in the case of 15 to 29 year olds and 30 to 49 year olds (on average not more than a day per person and year) – the morbidity rate of older foreign workers (50+) is significantly higher than of Austrian employees (32 compared to 14 days on average in 1999).

⁵ The aging of the baby boom generation explains the formidable rise in the share of persons over 30 in the labour force.

The morbidity rate differential between nationals and foreigners is also higher in the case of the unemployed. In 1999, foreign unemployed had on average 2 days of sickness per person more than Austrian unemployed. This difference is entirely the result of the high morbidity rate of older unemployed migrants; as a matter of fact, younger unemployed foreigners have a lower morbidity than Austrians.

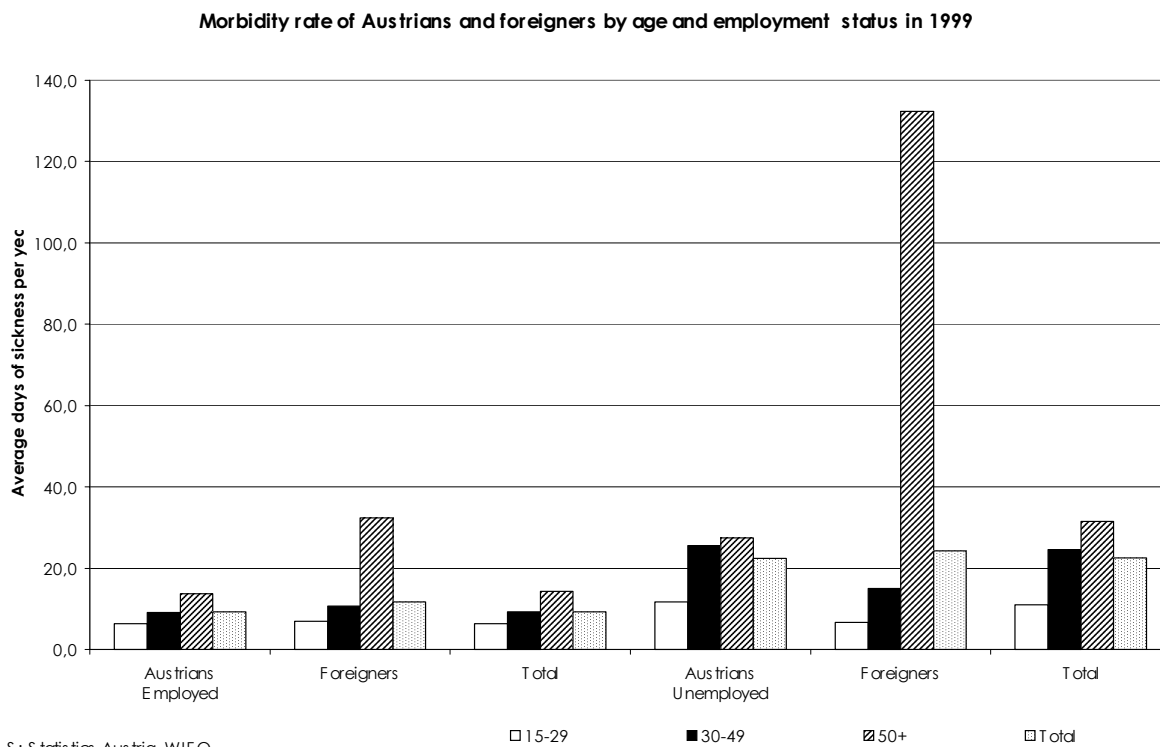
Graph 11:



These differences suggest that the 'healthy worker effect', i.e., the lower morbidity rate of employed compared to unemployed workers, is at least partly the result of explicit screening of the employed by their health record. This is to say that in the course of micro-economic reform, structural change and cyclical downturns persons with a bad health record are amongst the first to be made redundant⁶. In addition, unemployment per se may act as a psychological stress factor and through that mechanism exacerbate health problems.

⁶ For a more detailed reasoning and analysis see *Biffl* (2002B).

Graph 12:



It seems to be the labour market which, through the working of a complex set of factors, is a major driving force for the above average morbidity rate of older migrants. This is in accordance with findings in Germany (Geiger, 1999). An empirical analysis of psychosomatic diseases amongst older migrants in Austria (*Senior Plus*, 1999) establishes a direct link between the high morbidity rate of migrants in old age (and the above average incidence of disability pensions) with stress factors at work; in addition, bad housing conditions and socio-economic marginalisation, partly a result of a lack of German language skills, and different cultural attitudes towards the consumption of health and care services (responsibility of the family, lack of confidence in public services, fear of misunderstanding due to language barrier) are additional explanatory factors.

Concluding remarks

This has been an exploratory statistical investigation into various factors related to the health characteristics of Austrians and its migrant population. It has brought out interesting differences between them and possible explanations for the differences. But it has also raised a number of questions whose answers remain to be pursued. The analysis of the differences in morbidity rates by nationals and foreigners confirms the a priori belief that migrants, in our case largely the new arrivals, are a particularly vulnerable group of people as far as their

health status is concerned. This is, however, not true for migrants of all ages. 'Only 'over 45 year old migrants face above average health problems. Children, youth and middle aged adults have lower average morbidity rates than Austrians, even though active health promotion is much rarer pursued than in the case of nationals.

The lower than average educational attainment level of migrants and the associated above-average physical and often also mental and psychological strain in the workplace, are the main explanatory factors behind the weaker health of older migrants. The pattern of morbidity of migrants differs as a result of the highly segmented employment of migrants. This insight should trigger off more focused medical attention on occupational diseases and their impact on health conditions over the life cycle. It may well be that a different organisation of work in enterprises, i.e., job rotation, flexible work arrangements, reduction of shift work with age and the like, can help reduce health problems of older workers. Given the large proportion of migrants in unskilled and semi-skilled occupations, this may be rather difficult.

The bad health record of older migrants adds yet another dimension to the already daunting task of providing adequate care for an aging Austrian population, and that is the rising proportion of older migrants in the not too distant future. This implies that health care institutions will be faced with caring for people with special needs due to often chronic and multimorbid health problems and different language and cultural background. This may imply institutional adjustments, e.g. intercultural training for care personnel and medication and equipment.

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