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The Socio-Economic Background of Health in Austria

With Special Emphasis on the Role of the Employment Status

Socio-economic status matters in the case of the morbidity rate of groups of persons. The morbidity rate is lowest for employed persons and rises with the growing distance from the labour market. It declines with the educational attainment level and rises with age. While the morbidity rate of the total population has remained rather stable over the last two decades, it declined for employed persons and increased in the case of the unemployed. Labour market policy measures ought to address the health problems of long-term unemployed in their efforts to re-integrate them into working life.

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Unlike in Anglo-Saxon countries and Germany, analyses of the relationship between socio-economic status and health are only in their infancy in Austria (*Federal Ministry of Social Security, Generations and Consumer Protection,* 2001, *Pochobradsky et al.,* 2002). This may be due to the general belief that Austria's universal access to health services[1] 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 cannot eradicate differences in health patterns by socio-economic status.

Considerable differences in the incidence of sickness, the duration of episodes of sickness, and the pattern of diseases by education and employment status remain after correcting for demographic factors like age and gender[2]. Why the employed have a considerably better health record than the unemployed is the focus of analysis of this paper.

We first provide an overview of the long-term development of morbidity rates (days of sickness over one year) by demographic groups and socio-economic status[3]. The paper highlights the role of the employment status, education and lifestyle, in par-

[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; source: *OECD,* 2003). The only group of persons without direct personal health insurance coverage are recipients of social assistance (Sozialhilfe), asylum seekers and prisoners. They are covered against sickness via the communities or 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 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.

[2] In contrast to many industrialised countries (*Hadley,* 2003, for USA, and *Kooiker – Wildeboer Schut,* 2003, for some EU member countries), there is no statistically significant positive relationship between the income level and the morbidity rate after controlling for age in Austria.

[3] The data on which the paper is based, are special health surveys which have been added to the (quarterly) labour force household survey (micro-census) in 1973, 1983, and 1999, complemented by time series of administrative data on sick leave of the employed and unemployed (social security statistics) and the European Community Household Panel (ECHP). According to the household survey, an episode of sickness is given if the normal pursuit of life is thereby affected, e.g., if one can not go to work or attend school as in the case of influenza, bronchitis, hospitalisation, etc. The administrative data base provides information on the number of days of sickness per year recorded by employers.

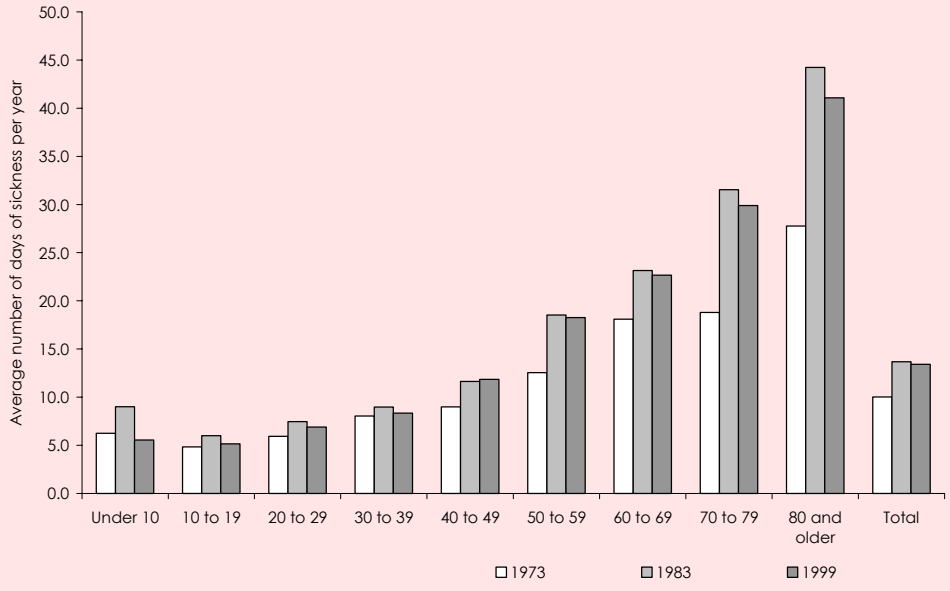
ticular health-conscious behaviour, in reducing the morbidity rate. In order to confirm the development of morbidity rates over time and the level differences between employed and unemployed as exemplified by the household survey, time series of administrative data on sick leave of employed and unemployed are consulted. As a next step, the European Community Household Panel (ECHP) data is analysed, in order to check the hypothesis that long-term unemployed are significantly less healthy than short-term unemployed.

The paper concludes with the suggestion that synergies between employment and health policies could be achieved by introducing health awareness measures into active labour market policies and linking them with skill promotion and more part-time work particularly for long-term unemployed. This would reduce work related stress, promote healthy lifestyles and, by addressing the health problem of long-term unemployed, foster their chances of finding a job. The promotion of health of the unemployed will not only improve individual wellbeing but contribute to macro-economic growth[4].

Stable global morbidity rate between the early 1980s and late 1990s

In order to arrive at a complete picture of the health situation of the total population and various socio-economic groups, 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 or injuries (*Biffl,* 2002), to the use of health services (*OECD,* 2003). Household surveys provide this additional information, in particular subjective feelings of wellbeing, lifestyles and behaviour patterns, which have a significant impact on health, e.g., eating and drinking habits, regular physical exercise, smoking, obesity, regular health checks, etc. Another advantage of household surveys is that this information is linked consistently with the demographic and socio-economic background of the various groups of people.

Figure 1: Average days of sickness of the total population by age



Source: Statistics Austria, WIFO calculations.

In Austria, the first household health survey was undertaken in September 1973; then on average every person was sick for 10 days of the year (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 had increased to 13.7 and remained fairly stable thereafter (1999 13.4 days; Figure 1).

[4] For more details as to the relationship see *WHO* (2001).

According to administrative (social security) data, the average number of days of absence from work per employee due to a spell of sickness increased from 14 days in 1973 to 15 days 1983, i.e., by somewhat less than in the case of the total population, and declined somewhat between 1983 and 1999 (to 14.4 days), *Biffl,* (2002). Administrative data on sick leave of the employed and unemployed exhibit somewhat higher morbidity rates than household surveys. This may be linked to the fact that treatment (Kur) in health centres (Kuranstalten) is counted as a spell of sickness.

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 were not sick once; the proportion declined thereafter to 53.6 percent in 1983 and 50.3 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[5] (Figure 2). Another reason is increased longevity: The life expectancy at birth increased between 1973 and 1999 by 7 years, at the cost of rising average sickness rates – in the main of persons older than 50[6].

The average morbidity rate increased between the early 1970s and 1980s because of a significant rise in life expectancy and a rising proportion of the population falling sick at least once a year. It remained more or less stable thereafter.

The morbidity rate of younger and middle-aged persons also increased between the early 1970s and early 1980s; in the case of youth and middle-aged persons, this is often attributed to increasing numbers of them adopting unhealthy lifestyles, in particular illicit drug use including alcohol, and smoking[7]. Also administrative data on sick leave of the employed indicate a clear rise in morbidity rates of youth and middle aged persons between the early 1970s and 1980s.

The morbidity rate by age is slightly U-shaped, i.e., children under 5 have higher rates than young people between 5 and 15, the age groups with the lowest sickness rates. Thereafter, the number of days of sickness per year rises exponentially with age. In the year 1999, persons older than 80 tended to be sick on average 41.1 days per year – 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 morbidity rate of the total population does not only depend on the age structure of the population and the development of 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 that of men. In 1983 women were on average 14.1 days sick compared to 13.2 days with men. Between the early 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.

While gender differences in morbidity rates remained stable over the long run for persons under 20, with males having slightly higher rates than females, this was not the case for persons over 20. In the case of 20 to under 30 year olds, the morbidity rate switched from a somewhat higher rate of females in 1983 to a lower one in 1999. Also for 30 to under 40 year olds, the health status of women improved over time relative to men. In contrast, for over 40 year olds, the morbidity rate of women rose more than proportionately between the early 1980s and the late 1990s such that women overtook men in terms of days of sickness per year.

Adjusting for the changing 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 affect the general outcome of average morbidity rates over time.

[5] This corresponds with the development of sick leave of the employed according to social security data.

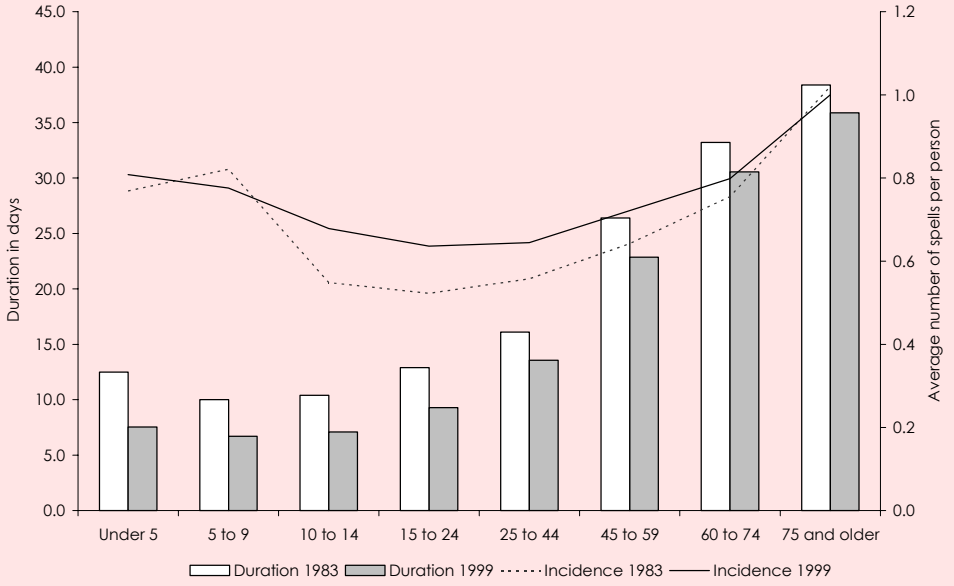
[6] The relative mortality rate (adjusted for the age structure) declined in Austria by 18 percent between 1970 and 1995; this was a somewhat faster decline than in the EU on average (*European Observatory on Health Care Systems,* 2000).

[7] This point is raised in *European Commission* (2003B) when trying to explain rising health problems of youth and middle aged persons. The Dunedin Youth Study and the Study of adults in the Dutch GLOBE Study provide unique insights into harmful health behaviour and its link with lower socio-economic status (*Droomers,* 2002).

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 (under 5 year olds). However, the average duration of a spell of sickness is comparatively short in the case of children and quite long for older persons (Figure 2).

Figure 2: Incidence and duration of a spell of sickness in 1983 and 1999



Source: Statistics Austria, WIFO calculations.

The number of spells of sickness per person increased from an average of 0.4 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 people of working age. In contrast, 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 in every age group.

The high and rising morbidity rate of 45 to 60 year olds is a matter of concern when wanting to promote the employment of older workers without imposing undue cost pressure on enterprises (active ageing)[8]. This fact has to be taken into account when developing age management programmes at the work place to ensure sustainable employment of older workers.

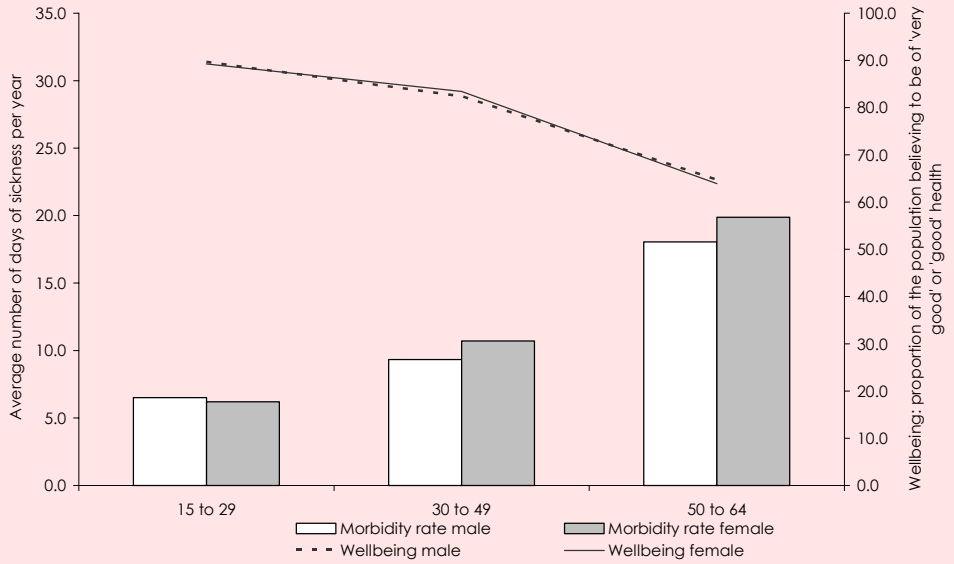
Strong negative correlation between morbidity rate and feelings of wellbeing

The micro-census does not only enquire about the actual days of sickness in the course of one year, but also about the subjective feeling of wellbeing. Between the two there is a significant negative correlation (coefficient of correlation of 1.0). Figure 3 visualises this close relationship for men and women by age group. Accordingly, youth does not only have a lower morbidity rate than middle aged and older persons but feels healthier as well.

In 1999, 89.5 percent of the 15 to 29 year olds stated that their health status was very good or good, compared to 82.9 percent of the 30 to 49 year olds and 64.3 percent of the 50 to 64 year olds. There is hardly any difference in the age-specific subjective feeling of wellbeing of the total population by gender. This contrasts somewhat with the morbidity rate, which, in 1999, was with the exception of youth always a bit higher for women than for men.

[8] The *OECD* (1998, p. 84) defines active ageing as ". . . the capacity of people, as they grow older, to lead productive lives in the society and the economy. This means that they can make flexible choices in the way they spend time over life - in learning, in work, in leisure and in care-giving".

Figure 3: Morbidity rate and subjective feeling of wellbeing of the population 15 to 64 in 1999



Source: Statistics Austria, WIFO calculations.

Morbidity declines as the educational attainment level rises

The morbidity rate does not only depend on demographic factors like age and gender, but also on socio-economic factors like educational attainment level and employment status. In general, an inverse relationship may be expected between the morbidity rate and the educational attainment level. The mechanism by which education may influence health is the lifestyle, i.e., an awareness of individuals of the role of nutrition, smoking, physical exercise, frequency of getting medical advice for one's health. Another factor is the type of work open to people with different educational background and thus work-related stress and diseases[9]. Of some importance may be access to information about the impact of the lifestyle, in particular food intake, regular health checks and the like, on health – it can be expected to be less accessible for people who are not engaged in continued learning and education. Persons with health problems or handicaps tend not to move up the educational ladder to the same extent as healthy ones.

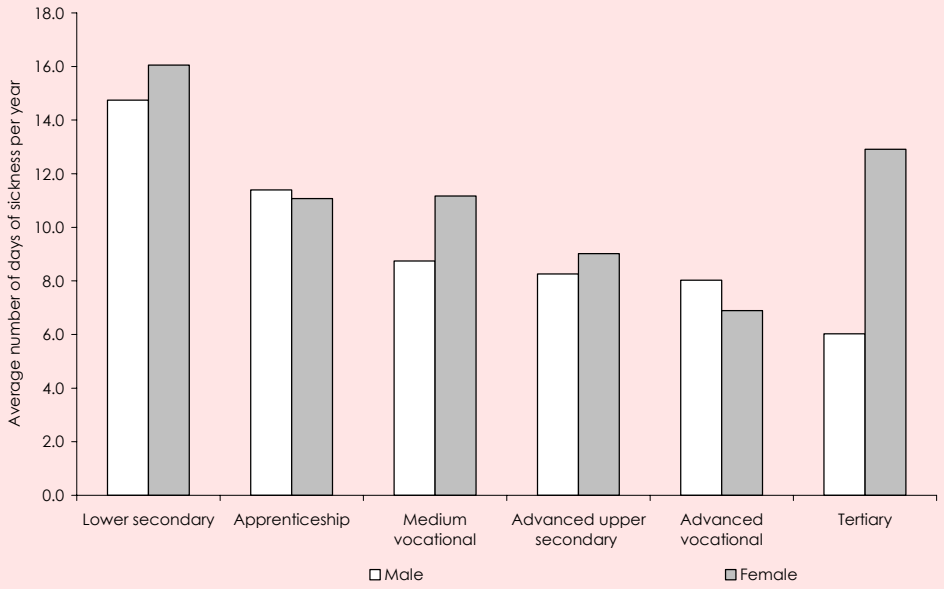
In order to isolate the impact of education on morbidity rates, we examine the health record of the population aged 18 to 64[10]. Figure 4 indicates a clear declining trend of the morbidity rate of men with rising education, while it is bi-polar in the case of women.

The morbidity rate of men declines more or less continuously from a high of 14.7 days p.a. on average for persons with compulsory education as their maximum attainment level, to a low of 6 days for university graduates. In contrast, the morbidity rate of women is highest for persons with compulsory education (16 days per year on average), followed by university graduates (12.9 days), and lowest for women with vocational college education (6.9 days). The morbidity rate of female university graduates is thus double the rate of male university graduates, while it hardly differs for men and women with apprenticeship education.

[9] For details see Chapter 2, "The social dimension of health", in *European Commission* (2003A).

[10] We are not looking at the total population over 18 in order not to confuse the issue. Older persons are on average less educated than younger ones, while at the same time having higher morbidity rates. In addition, lower socio-economic status of over 60 year olds is linked with higher mortality rates; see *Leclerc et al.* (2000).

Figure 4: Morbidity rate of the population aged 18 to 64 by educational attainment level and gender in 1999



Source: Statistics Austria, WIFO calculations.

This pronounced gender difference in morbidity rates by education may have something to do with the significant gender segmentation of employment by occupation in Austria, whereby female university graduates tend to be concentrated upon the public sector (education, health services) and men upon management positions in the private sector (*Biffl,* 1996). The marked difference in morbidity rates of male and female university graduates deserves particular attention in that context.

While the morbidity rate of men declines continuously as the educational attainment level rises, it is bipolar for women.

Unemployed persons have significantly higher morbidity rates than the employed

It is a fairly universal feature that morbidity rates are higher for unemployed than for employed persons[11]. The causal factors are subject to continued debate, however.

The difference in the morbidity rates of employed and unemployed persons has been increasing over time, particularly in the second half of the 1990s (Figure 5); this is partly a result of the changing demographic composition of the work force (ageing of the work force), partly a consequence of rising age-specific morbidity rates. The significant rise in the morbidity rate of unemployed in the 1990s may also be promoted by the possibility to prolong the duration of unemployment benefit payment by becoming sick, i.e., by institutional factors.

In Austria, the morbidity rate of unemployed persons is more than double the rate of the employed.

However, causal links are difficult to establish but may work both ways, i.e., health problems may be responsible for job loss but unemployment per se may also be a cause for diseases, in particular psychosomatic ones.

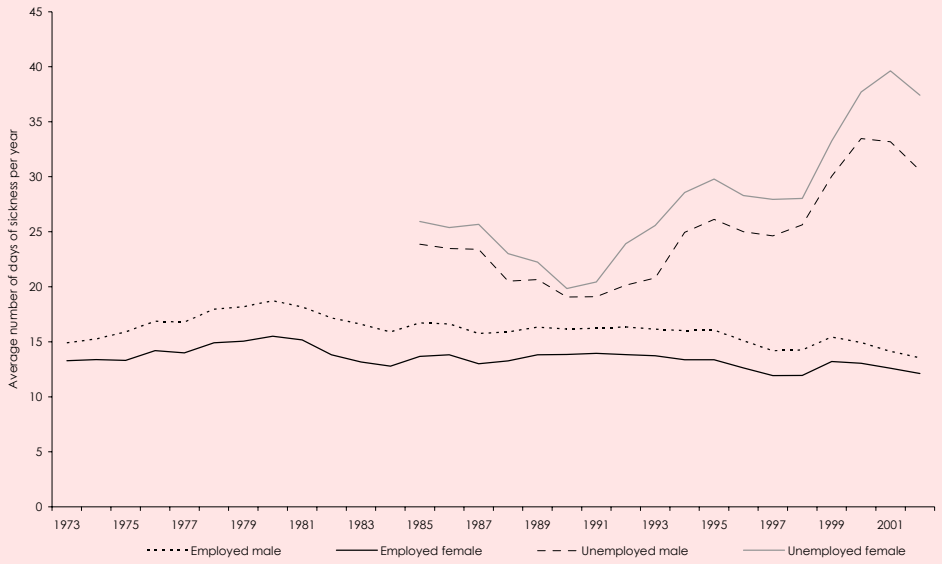
According to social security data, the average number of days of sickness of the registered unemployed was 33 compared to 13 days of wage and salary earners in the year 2002. In the year of the household survey of 1999, the difference was somewhat less pronounced. The morbidity rate is lower in the household survey with 23 days for the unemployed (compared to 31 days in the social security data) and 9.3 days of sickness of the employed (14.4 days in social security data).

The rise in the average morbidity rate of the unemployed between 1983 and 1999 – an average of 5 days per person in the household survey – can be attributed to the rising share of older persons in unemployment on the one hand (from 46.3 percent

[11] For more literature see *European Commission* (2003B); *Mesrine* (2000) points out that also the mortality rate is higher for the unemployed than the employed of equal age.

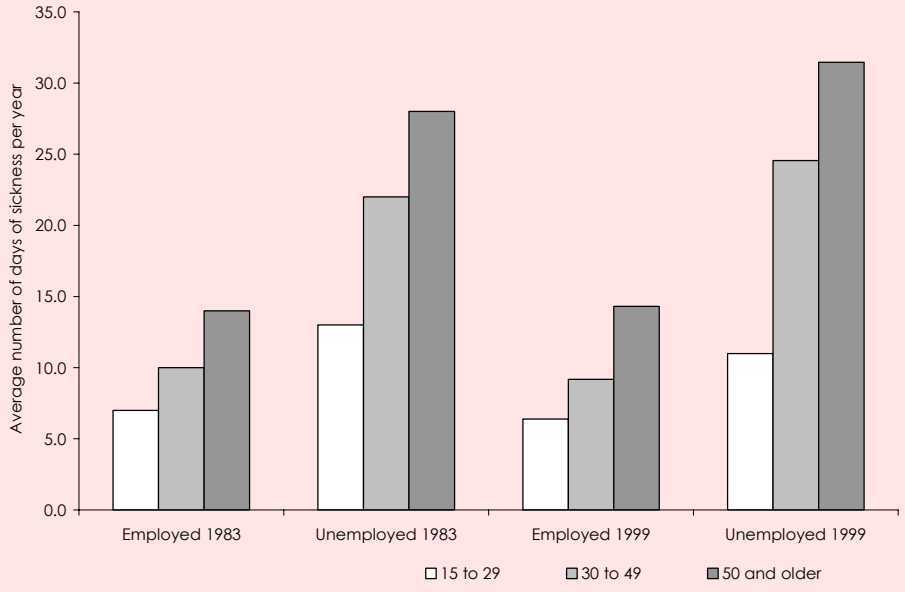
of the unemployed in 1983 to 73 percent in 1999), and to increasing morbidity rates of over 30 year olds on the other[12]. Only the 15 to 29 year olds had a significantly lower morbidity rate in 1999 than in 1983. As in social security data, the morbidity rate of the employed declined from the early 1980s to the end of the 1990s for every major age group except the over 50 year olds, for whom it remained stable (Figure 6).

Figure 5: Morbidity rate of employed and unemployed by gender



Source: Federation of Austrian Social Security Institutions, WIFO calculations

Figure 6: Morbidity rate by age and employment status in 1983 and 1999



Source: Statistics Austria, WIFO calculations.

As to the gender aspect, a significant difference between household surveys and social security data has to be noted: The latter shows consistently higher morbidity

[12] The aging of the baby boom generation explains the marked rise in the share of persons over 30 in the labour force.

rates of employed men compared to employed women, while the contrary is true in household surveys[13]. In contrast, unemployed women have significantly higher morbidity rates than men in both data sources.

Table 1: Morbidity rate of the population of working age by gender and employment status in 1999

	Male	Female	Total
	Average number of days of sickness per year		
Employed	8.7	10.1	9.3
Farmers	8.3	11.3	9.8
Other self-employed	6.0	10.9	7.6
Wage and salary earners	9.1	9.9	9.4
Blue collar	10.6	11.7	10.9
White collar	6.6	9.0	7.9
Civil servants	9.9	10.4	10.1
Apprentices	7.0	6.7	6.9
Unemployed	21.5	23.8	22.6

Source: Statistics Austria (micro-census), WIFO calculations.

The group with the highest morbidity rates amongst the employed are blue collar workers, followed by civil servants (10.9 and 10.1 days, respectively, and farmers (9.8 days) in 1999)[14]. White collar workers (salary earners) in private sector industries have comparatively low morbidity rates with 7.9 days in 1999, about the same as persons working on their own account (7.6 days; Table 1).

Morbidity rate of the employed declines as unemployment rises

The development of the morbidity rate of the employed (absentee rate due to sickness) has a statistically significant cyclical pattern – the morbidity rate tends to fall when unemployment rises. This appears to be a fairly universal feature, well documented in the literature (*Doherty,* 1979, *Larson – Fukami,* 1985, *Leigh,* 1985, *Lantto – Lindblom,* 1987, *Markham – McKee,* 1991, *Drago – Wooden,* 1992, *Bäckman,* 1998, *Andrén,* 2001A). But as has been pointed out, causal links are difficult to establish but may work both ways.

The relationship between the morbidity rate of the employed, measured in terms of the sum of days of sickness per year over the volume of working days of wage and salary earners, and the unemployment rate, is estimated by a linear regression for the period 1987 to 2002 in Austria (Figure 7). Accordingly, the development of the unemployment rate can help "explain" about 50 percent of the variability of the morbidity rate; the relationship is statistically significant. This implies that in the case of a rise in the unemployment rate by 1 percentage point, the morbidity rate of the employed will decline by 0.45 percentage points.

Orthodox economic theory suggests that the positive relationship between the morbidity and unemployment rate is the result of the interaction of various behavioural aspects on the labour demand and supply side:

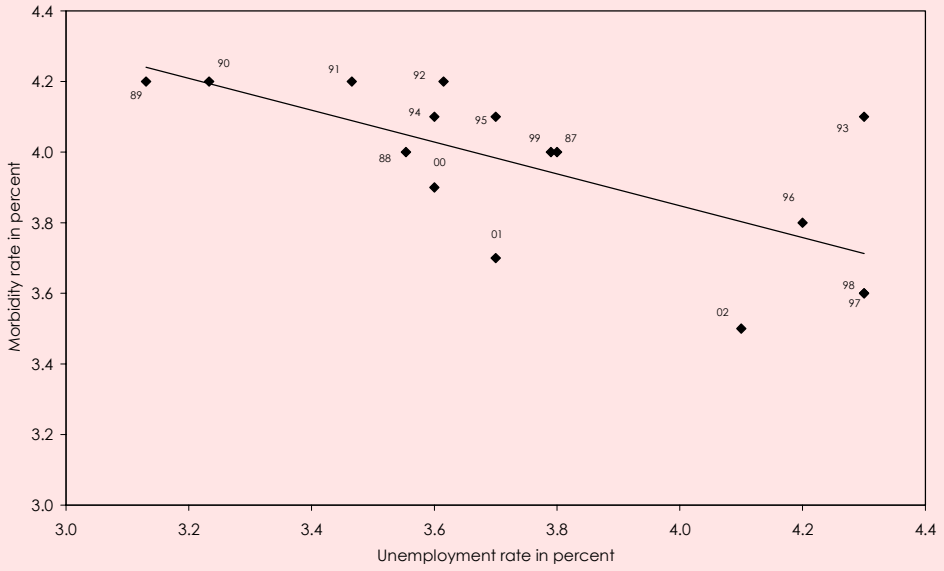
- Workers expect that the probability of job loss is higher in case of high rates of absence due to sickness, i.e., job loss is seen as a penalty for absenteeism. Thus, workers signal their interest in the job by reducing absenteeism in phases of rising unemployment.
- The morbidity rate will decline more than proportionately in those occupations, in which the substitution with other workers is particularly easy (unskilled and semi-skilled workers).

[13] *Barmby – Ercolani – Treble* (2000) show that in an international comparison sickness absence rates tend to be higher for women. A closer look at administrative data in Austria suggests that sick leave data is affected by institutional arrangements. As administrative procedures for blue and white collar workers were harmonised in Austria in 2001, sick leave rates of blue collar workers, the majority of them male, started to converge to those of white collar workers, and in so doing also reduced the gender gap.

[14] In Austria, civil servants do not only comprise highly skilled administrative personnel in federal, state and local government and social security services, but also the bulk of teachers, security personnel, persons working in the health and social services in blue and white collar positions.

- The morbidity rate will decline more than proportionately for workers at the periphery (outsiders compared to insiders) of internal labour markets, in particular persons with limited firm-specific skills.

Figure 7: Negative correlation between the morbidity rate of employed and the unemployment rate in Austria 1987-2002



$mbr = 5.7 - 0.45\,u \qquad R^2 = 0.49$
$(12.1) \quad (-3.7)$

Source: Federation of Austrian Social Security Institutions, Labour Force Statistics. *mbr* . . . morbidity rate of employed, *u* . . . unemployment rate, italic numbers in parentheses . . . *t* statistics.

There is another aspect, which should be taken into account when wanting to explain the rising differential between the morbidity rates of employed and unemployed persons in the course of the 1990s and early 2000 in Austria (Figure 5). It may be linked with the structural change of employment away from occupations and industries with significant health hazards. While young and healthy laid-off workers may move back into employment relatively quickly, older and less healthy may remain on the unemployment register. This is suggested by analyses in Sweden (*Knutsson – Goine,* 1998) as well as Austria (*Biffl,* 2002).

In addition, screening of the employed by their health or absentee record in case of layoffs may also play a role. This is to say that in the course of micro-economic reform, structural change and cyclical downturns, persons with a bad health record may be amongst the first to be made redundant. Unemployment per se may act as a psychological stress factor and with rising duration of unemployment exacerbate health problems.

Negative relationship between income and morbidity?

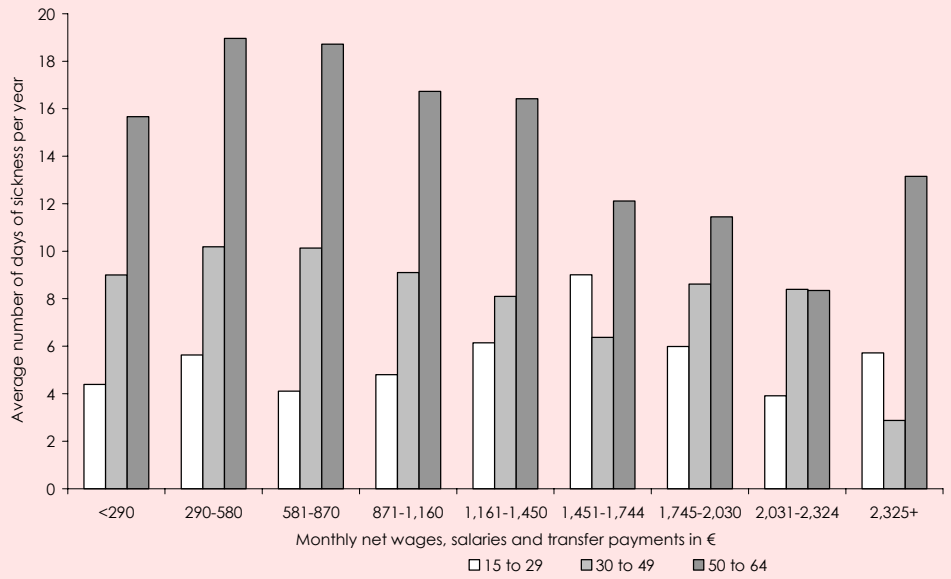
International studies show that income is negatively correlated with morbidity. This seems also to be the case in Austria. But, if we take into account that age-income profiles are positively sloped and that morbidity rates rise with age, an analysis of the income-morbidity nexus controlled for age does not come up with a significant negative impact. This should not come as a great surprise, given the universal access to a high level of health care in Austria and the complex ways in which income is distributed over individuals and households.

Complex relationship between income, age and morbidity

When wanting to explain the nexus between age, income and morbidity, it has to be borne in mind that both supply and demand factors are involved. On the one hand, wages depend on supply factors like the educational attainment level, age and gender, on the other on demand factors like type of industry and firm size. Differences in income by age and gender may therefore be the result of a variety of factors, and rarely provide insight into the health hazards and differences in the

wear and tear by type of job. Even if one assumes that higher income groups have supplementary health insurance and may therefore have access to better health care, high income groups tend to be older and by that mechanism have higher morbidity rates.

Figure 8: Morbidity rate of the population of working age by age and income group in 1999



Source: Statistics Austria, WIFO calculations.

Figure 8 visualises this complex relationship between age, income and morbidity. The morbidity rate does not have a clear linear and negative relationship with income when we look at the various age and income groups. The morbidity rate of 50 to 64 year olds tends to decline as income rises, with the exception at the lower end (less than € 290 per month) and upper end of the income spectrum (more than € 2,325 per month). 50 to 64 year olds who are at the bottom end of the wage income have a lower morbidity rate than older workers in the lower to middle income groups. On the other hand, the highest income earners have a higher morbidity rate than middle to upper income groups.

The relationship between morbidity and income is influenced by the strong positive correlation between age and morbidity. Only in the case of older persons (50 to 64 year olds) is the morbidity rate of low income earners higher than of high income earners.

The morbidity rates of 15 to 29 year old youth and middle aged workers have no clear linkage with the level of monthly earnings. The age-specific pattern of morbidity rates and income looks fairly similar for women and men, except that low income young and middle aged women (often part-time workers) have significantly lower morbidity rates than men in that income bracket.

Isolation of the role of various socio-economic factors and their impact on morbidity

The impact of the various socio-economic and demographic variables on morbidity is analysed with the help of regression analysis (Table 2). The morbidity rate and age are highly correlated; when calculating a regression with the morbidity rate as the dependent variable and age as the only explanatory variable, more than one half of the variation in morbidity can be explained by the age variable (R^2 = 0.76, mbr = –6.8 + 0.7 x). If one calculates a regression with age and income as explanatory variables, the explanatory power of a regression including both variables, is not improved; income is statistically significant but exerts hardly any influence on the level of the morbidity rate. These results suggest, not surprisingly, that age is the strongest single predictor of changes in the morbidity rate of the population.

Table 2: Regression results

	Constant	Age	Income	Gender (men)	Educational attainment	Employment status
	– 6.822	0.736				
	(– 79.192)	*(354.571)*				
SE	0.086	0.002				
SE (y)	5.673					
F value	125720.394					
R^2 adj.	0.763					
Durbin-Watson	1.828					
	– 6.654	0.749	– 0.000			
	(– 59.429)	*(287.990)*	*(– 14.333)*			
SE	0.112	0.003	0.000			
SE (y)	5.679					
F value	42334.117					
R^2 adj.	0.763					
Durbin-Watson	1.818					
	– 6.068	0.750	– 0.000	– 0.355		
	(– 35.945)	*(286.935)*	*(– 14.989)*	*(– 4.639)*		
SE	0.169	0.003	0.000	0.077		
SE (y)	5.677					
F value	28251.929					
R^2 adj.	0.763					
Durbin-Watson	1.820					
	– 5.887	0.748	– 0.000	– 0.280	– 0.146	
SE	0.171	0.003	0.000	0.077	0.021	
SE (y)	– 34.497	284.859	– 11.488	– 3.621	– 6.967	
F value	5.672					
R^2 adj.	21239.379					
Durbin-Watson	0.764					
SE	1.821					
	– 9.867	0.738	– 0.000	– 0.278	– 0.158	0.345
	(– 30.588)	*(272.477)*	*(– 2.259)*	*(– 3.617)*	*(– 7.555)*	*(14.518)*
SE	0.323	0.003	0.000	0.077	0.021	0.024
SE (y)	5.650					
F bvalue	17169.154					
R^2 adj.	0.765					
Durbin-Watson	1.845					

$mbr = a + b_1\, age + b_2\, inc + b_3\, men + b_4\, edu + b_5\, emp,$

mbr . . . morbidity rate, $mbr = a + b_i x_i$, *a* . . . constant, x_i . . . age, *inc* . . . income, *men* . . . gender, *edu* . . . educational attainment, *emp* . . . employment status, b_i . . . coefficient, *SE (.)* . . . standard error, italic numbers in parentheses . . . *t* statistics.

The explanatory power of the regression function can be slightly improved, if we add gender, educational attainment level, and employment status as explanatory variables of the variation of morbidity rates. As can be seen from the regression results (Table 2), the morbidity rate rises with age, is somewhat lower for men than women, declines as the educational attainment level rises, and rises when becoming unemployed. It is lowest in the case of employed and rises with the growing distance from the labour market, i.e., it is highest in the case of persons who are out of the labour force.

Health conscious behaviour reduces morbidity rate

One explanatory factor for differences in morbidity rates, independent of age and gender, are behaviour patterns and/or lifestyles. This can be learned from an analysis of health survey data, which address the question of health conscious behaviour. According to these data, the propensity to live a health conscious life, i.e., to take active measures to improve one's health, increases with educational attainment level. Independent of the educational attainment level, employed tend to lead a somewhat healthier lifestyle than the unemployed. This can be seen from Table 3. Health conscious behaviour is measured for example by the proportion of the working age population which engages in sport, which is conscious of the nutrition intake. This proportion is higher for employed than for unemployed. The difference is particularly pronounced in the case of the medium skilled employed versus the un-

employed as to nutrition and in the case of sports activities at the lower and upper end of the skill spectrum.

Table 3: Proportion of the population of working age exhibiting health conscious behaviour by educational attainment and employment status in percent

1999

	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed
	Health conscious nutrition		Regular physical exercises		Undertake health promotion measures	
Educational attainment						
Low	37.9	36.9	41.1	36.1	62.4	59.5
Medium	46.6	44.7	51.5	50.7	71.0	72.5
High	57.6	56.7	62.9	59.0	80.6	77.6
Total	47.2	43.5	51.9	46.5	71.3	68.4

Source: Statistics Austria (micro-census).

Similarly, the proportion of the population, which takes conscious actions to promote health, e.g., regular medical check ups and the like, is highest for highly educated persons and lowest in the case of persons with a low educational attainment level. Again it is the unemployed (with the notable exception of the medium skilled) who are making less effort to promote their health than the equally skilled employed persons.

However, as Table 3 indicates, behaviour patterns between employed and unemployed persons do not differ vastly; thus, one has to look for other explanations for the significant differences in morbidity rates between employed and unemployed persons, in particular the individual human condition (healthy worker effect) and the wear and tear of the work environment.

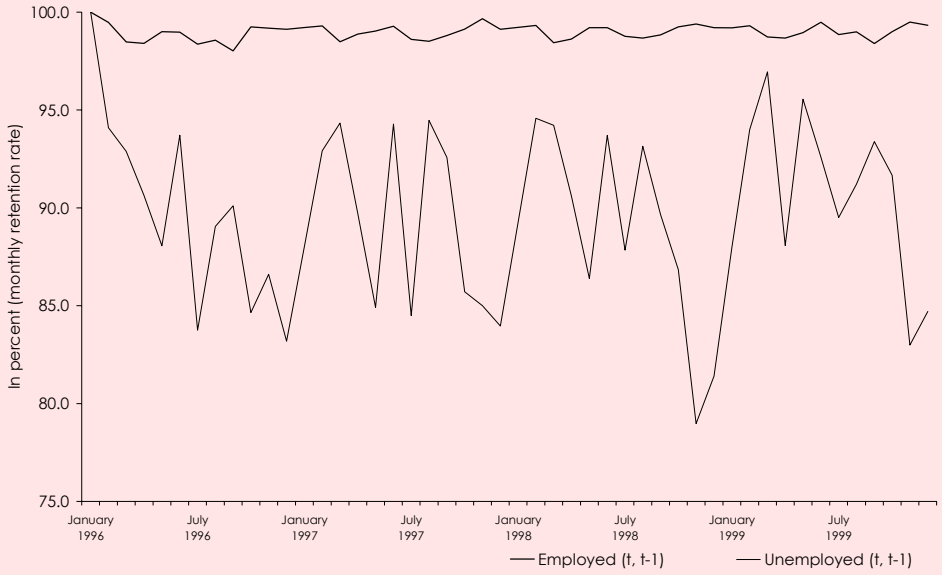
Long-term unemployed are significantly less healthy than employed persons

In what follows, we examine the question if and to what extent prolonged unemployment is linked to a deterioration of the health status and/or the subjective feeling of wellbeing. This is a linkage which has been established for Sweden by *Andrén* (2001B) and *Sundberg* (1996). In the case of Austria, we take the ECHP as a data source[15].

Figure 9 shows that Austria has rather high seasonal fluctuations of unemployment – a result of the important role of industries with a pronounced seasonality, in particular the construction industry, tourism and farming/forestry. The particular institutional set-up of unemployment insurance and the ample availability of labour supply, in particular migrant labour, promotes seasonal fluctuations of employment. The large proportion of seasonal workers and the large share of small, and medium-sized firms in total employment are major factors for the high turnover of unemployed in the course of a year in Austria (*Biffl,* 2000). Accordingly, it is not surprising that in any given year the proportion of healthy persons amongst the unemployed should be fairly high. But if we examine the health record, or rather the structure of the indicator of wellbeing – the ECHP distinguishes between five states of wellbeing (very good, good, satisfactory, bad, very bad) – over time, the group of persons which has been continuously employed between 1996 and 1999 has a significantly higher state of wellbeing than the group of persons, which has been continually unemployed (Figure 10). The persons who have been employed continuously between 1996 and 1999 are significantly healthier than persons who have been unemployed over that time span.

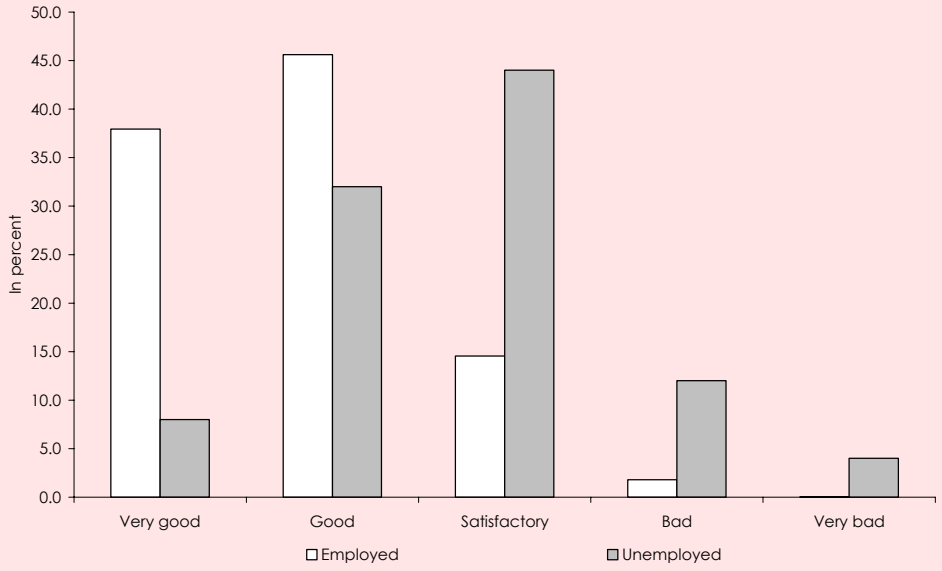
[15] The European Community Household panel provides information on the feeling of wellbeing of the population. Austria has introduced the ECHP in 1995, one year after the EU. In this panel, some 6,000 persons are interviewed per year in Austria; the most recent wave available for the current research is the 6th in the year 2000.

Figure 9: Monthly retention rate of employed and unemployed persons between January 1996 and December 1999



Source: ECHP wave 3-7 (Austria wave 2-6), ICCR Version 2003, WIFO calculations.

Figure 10: Perceived health status of persons who have been unemployed throughout the period in comparison with persons who have been employed throughout the period (1996-1999)



Source: ECHP Wave 3-7 (Austria wave 2-6) , ICCR Version 2003, WIFO calculations.

Concluding remarks

The analysis of morbidity rates by socio-economic status has provided some insight into the factors which account for the significantly higher morbidity rates of unemployed compared to employed persons. Not only the educational attainment level but also the limited knowledge about the role of health awareness measures for one's health are important discriminating factors. It could be shown that prolonged periods of unemployment may reinforce the lack of attention to one's health and in so doing exacerbate the problem of socio-economic exclusion. This suggests that an

important element of efforts to re-employ long-term unemployed lies in health promotion to improve the health status of the unemployed.

Thus, synergies between employment and health policies should be achievable by introducing health awareness measures into active labour market policies and linking them with skill promotion and more part-time work particularly for long-term unemployed. This would reduce work related stress, promote healthy lifestyles and, by addressing the health problem of long-term unemployed, foster their chances of finding a job. The promotion of health of the unemployed will not only improve individual wellbeing but contribute to macro-economic growth.

The analysis has, however, not only thrown light on some reasons for long-term unemployment. It has also raised a number of questions whose answers remain to be pursued. The analysis of the differences in morbidity rates by employment status confirms the a-priori belief that the unemployed are a particularly vulnerable group of people also as far as their health status is concerned. This may have something to do with their limited health consciousness on the one hand, but it could also be the result of screening measures of employers by health related absenteeism. This point deserves further research.

In addition, the different patterns of morbidity by gender suggest that there are factors other than education, which account for differences in health. Given the strong gender segmentation of the labour market, more research into occupational patterns of diseases and their impact on health conditions over the life cycle seems warranted. The marked difference in the morbidity rate between unemployed and employed persons, independent of gender and age, should be the basis of further research. The major question to be answered is whether weaker and unhealthier persons are less likely to make it into internal labour markets and careers, i.e., whether they are somewhat like a floating population between employment and unemployment spells. The second question following from this is, what role unemployment per se plays for the health conditions of workers.

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The Socio-Economic Background of Health in Austria – Summary

The paper provides an overview of the development of morbidity rates between the early 1970s and the late 1990s. It highlights the role of the socio-economic status, in particular the employment status, educational attainment, lifestyle and income, in explaining differences in morbidity rates apart from demographic factors.

From the age of 15 onwards, the sickness rate rises exponentially with age. In 1973, women had a somewhat lower average sickness rate than men (9.8 days versus 10.3 days for men); over time, the sickness rate of women increased faster than that of men such that, by 1999, it was significantly higher than that of men (14.8 compared to 11.9 days).

The morbidity rate declines as the educational attainment level rises. The mechanisms by which education may influence health are, amongst other factors, the type of work open to people with different educational background and thus work-related wear and tear.

The morbidity rates are higher for unemployed than for employed. The group with the highest morbidity rates amongst the employed are blue collar workers, followed by civil servants. White collar workers (salary earners) in private sector industries have comparatively low morbidity rates, about the same as persons working on their own account.

There is no clear linkage between income and the morbidity rate. Only in the case of older persons one can identify a positive correlation between income and morbidity.

The paper concludes with the suggestion that synergies between employment and health policies could be achieved by introducing health awareness measures into active labour market policies and linking them with skill promotion, in addition to promoting more part-time work for long-term unemployed, thus taking into account their reduced work ability due to a weak health status.