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Regional and Social Differences in Body Mass Index, and the Prevalence of Overweight and Obesity Among 18 Year Old Men in Austria Between the Years 1985 and 2000

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A B S T R A C T

The BMI data of four birth cohorts of totally 180,716 male 18 year old Austrian conscripts were documented in 5 year intervals starting 1985 and ending 2000 in order to analyze regional and social variety and a time trend of stature, body weight and BMI as well as the prevalence rates of overweight (defined as a BMI > 25.00) and obesity (BMI > 30.00). At first a marked time trend in BMI and overweight /obesity prevalence rates was found. Over the 15 years of investigation BMI increased significantly and the variation of BMI distribution increased too. The impact of educational level on BMI and the prevalence of overweight and obesity was also statistically significant. With increasing educational level BMI and the prevalence rates of overweight and obesity decreased significantly. Furthermore a significant regional variety in BMI and the prevalence rates of overweight and obesity were found. BMI and the prevalence rates of obesity and overweight decreased significantly from the Eastern part of Austria to the Western part. Both observations, e.g. the social and regional variety of obesity and overweight prevalence, were true of all 4 birth cohorts. From these results we can conclude that obesity and overweight represent an increasing health problem among young Austrian males. This is especially true of young men of low social status living in the eastern part of Austria.

Key words: *secular trend, obesity, overweight, educational level, regional variety*

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Introduction

Obesity is a common prevalent disorder representing a marked worldwide health problem, first of all in highly industrialized countries, namely in Europe and in the USA. For a long time, the observation that successive generations have become taller and heavier[1,2], a trend which was documented for the last 200 years, was interpreted positively because during times of chronic malnutrition and associated high childhood mortality rates, a steady increase in body mass seemed desirable. Therefore the so-called secular trend was mentioned as an evidence for the improvement of living conditions, social welfare and improved health systems. However, during the last decades data from various countries such as Australia[2], United Kingdom[3], USA[4], Scandinavian countries[5–8], the Netherlands[9], Germany[10,11], Poland [12] and some other First world countries showed not only a moderate and welcomed increase in body weight but also a clear increase in the prevalence of overweight and obesity among young people as well as adults. This trend, however, is anything but desirable.

Recent life-insurance data and epidemiological studies confirm that increasing degrees of overweight and obesity are important predictors of decreased longevity[13]. Obesity in children and teenagers is known to continue into adulthood. A review of the literature from USA, analyzing the years 1970 to 1992, revealed that the risk of obesity in adulthood was twice as high among obese children than among non-obese children after controlling for age[14]. For Sweden Mossberg[15] found that 47% of overweight children were overweight as adults and according to Charney et al.[16] 36% of overweight children were overweight as adults compared with 14% of low-weight or normal weight children. During adulthood obesity is associated with significant increased morbidity rates including an increased risk of coronary heart disease, hypertension, type 2 diabetes mellitus, an increased incidence of certain forms of cancer, respiratory complications (obstructive sleep apnea), gall bladder disease and osteoarthritis of large and small joints[17].

Unfortunately the pathogenesis of overweight and obesity is still incompletely understood, although it is well known that both genetic as well as environmental or behavioral factors are important. Twin studies have indicated a genetic impact on overweight[17], and more recent the susceptible-gene hypothesis was postulated[17]. On the other hand environmental factors[18,19], social class[12,20–22] or behavioral aspects such as daily food intake and energy expenditure[23,24] are well known as important factors influencing the development of overweight and obesity.

As mentioned above, during the last decades a dramatic increase of obesity and overweight among children and young adults was documented for the majority of Industrialized countries. Up to now no comprehensive analysis of the situation in Austria exists. Therefore the aim of the present study was at first the documentation of stature, body weight and body mass index development for young 18 year old males from Austria, for a period over 15 years (1985–2000). Furthermore the impact of social status, estimated by educational level and area of residence within Austria on stature, body weight, body mass index and weight status (overweight, obesity) was evaluated.

Material and Methods

Data set

The data source of the present study stems from the Austrian Bundesheer (Military service). The study was based on 4 cohorts of totally 180 716 young male Austrian conscripts, whose medical in-

spections for the Armed forces were performed during the years 1985, 1990, 1995 and 2000. Since conscription and medical inspections of the conscripts are compulsory in Austria, the samples comprise 97.6% of all young Austrian men aging between 18 and 19 years during the years of examination. Excluded from conscription and medical inspection are only those young men who suffered from severe somatic or mental handicaps. Only those young men were included in the present sample, who were at the time of medical examination between 18 and 19 years old. More than 98.1% of the Austrian conscripts are 18 years old at the time of medical examination, however, in certain circumstances the examination may be postponed upon request (mainly: illness, educational purposes). These conscripts older than 19 years were excluded from the analyses.

Regional distribution

The data stemmed from whole Austria. In order to analyze regional variety we defined three Austrian regions. Eastern Austria comprised the Federal provinces Vienna, Lower Austria and Burgenland, the three Eastern Federal provinces of Austria. This Region is characterized by predominantly low altitude. With the exception of Vienna, the Austrian capital, Eastern Austria is a predominantly agricultural area with only small towns only few had about 40 000 inhabitants. Eastern Austria has international borders to the Czech Republic, Slovakia, and Hungary. Central Austria comprised the Federal provinces Styria, Upper Austria and Carinthia. This region is characterized by a high variety of altitude from very flat regions up to the very high altitude of the Alps. With the exception of Linz, Graz and Klagenfurt, the capitals of the three federal provinces this region is a predominantly agricultural one. Central Austria has international borders with the Czech Republic, Germany, Slovenia and Italy. The most western part of Austria comprised the three federal provinces Salzburg, Tyrol and Vorarlberg. This western region is characterized by very high altitude of the Alps and very few towns of more than 20 000 inhabitants. Western Austria has international borders with Germany, Switzerland, Liechtenstein and Italy. The division of the sample according to regions of origin was justified by differences in life style, and workload, as well as nutritional habits.

Anthropometrics

Standing stature of the bare-footed young men was measured with a standard anthropometer (Siber-Hegner Comp., Switzerland) to the nearest millimeter. The body weight of the conscripts, who wore only underwear, was recorded with a scale precise to ±100 g. The body mass index (BMI) in kilograms per square meter (kg/m^2) was calculated. However, we have to state, that the anthropometric measurements are usually obtained by medical doctors and not by anthropologists and therefore measurement inaccuracy has to be assumed. This specific problem occurs in all studies analyzing conscript data sets, but the extensive amount of individual data (n=180,716) minimizes the effect of measurement inaccuracy. Stature and body weight were measured in the morning hours between 7:00 and 9:00 a.m. after an overnight fasting period of 10 hours. The measurement methods showed no difference according to year of examination, and region.

Weight status

Weight status was classified using the Body mass index categories published by the WHO[25]:

BMI < 16.00 = severe thinness
BMI 16.00–16.99 = moderate thinness
BMI 17.00–18.49 = mild thinness

BMI 18.50 – 24.99 = normal range (normal weight)

BMI 25.00–29.99 = overweight

BMI 30.00–39.99 = obese Grade I

BMI >40.00 = obese Grade II

Since only few individuals exhibited a BMI below 16.00, all individuals with a BMI lower than 18.50 were comprised to one group, classified as underweight. Furthermore only extremely few individuals exhibited a BMI above 40.00, therefore we classified all individuals with a BMI higher or 30.00 as obese.

Educational level

Education correlates to a high degree socioeconomic background and social class. In Austria educational level contributes far more to social status than income or the financial situation. Educational level was classified into 3 categories:

– elementary school: 9 years of education from 6th to 15th year of life, no further professional training. People who had attended only elementary school belong mostly to the lowest social strata.

– trade school or professional training after finishing elementary school. The majority of Austrians had experienced this kind of education, which is typical for social middle class

– High school degree which enables the young men to go to University. This highest degree of education is typical for high social status but also common for social middle class.

TABLE 1
DESCRIPTIVE STATISTICS OF STATURE, BODY WEIGHT AND BMI OF 18-YEAR OLD YOUNG MEN FROM AUSTRIA MEASURED 5 YEARS APART, IN THE YEARS 1985, 1990, 1995 AND 2000

Year of examination	N	X[a]	SD	Median	Skew	Variance
			Stature (in cm)			
1985	50468	177.1[bcd]	1.0	176.8	0.12	1.04
1990	47459	177.1[acd]	1.2	177.2	0.11	1.48
1995	39272	177.5[abd]	1.1	177.4	–0.02	1.17
2000	43504	177.7[abc]	1.1	177.9	–0.53	0.86
			Body weight (in kg)			
1985	50468	69.4[bcd]	0.9	69.5	–0.52	0.76
1990	47459	70.7[acd]	0.9	70.7	–0.41	0.94
1995	39272	71.6[abd]	0.9	71.6	–0.72	0.86
2000	43504	71.8[abc]	0.8	71.8	–0.83	0.63
			BMI (kg/m^2)			
1985	50468	22.1[bcd]	2.8	22.1	–0.07	0.15
1990	47459	22.5[acd]	3.2	22.5	–0.09	0.26
1995	39272	22.7[abd]	3.5	22.7	0.02	0.23
2000	43504	22.7[abc]	3.7	22.6	0.04	0.14

a = Duncan analyses $p<0.0001$

Legend: a = significantly different from year 1985, b = significantly different from year 1990, c = significantly different from year 1995, d = significantly different from year 2000

TABLE 2
BMI (MEAN $\bar{X}$, STANDARD DEVIATION SD, COEFFICIENT OF VARIATION CV) ACCORDING TO YEAR OF INVESTIGATION, EDUCATIONAL LEVEL AND AUSTRIAN REGION (THREE FACTOR FACTORIAL ANOVA)

Level of education	Eastern Austria				Central Austria				Western Austria			
	N	$\bar{X}$	SD	CV	N	$\bar{X}$	SD	CV	N	$\bar{X}$	SD	CV
						1985						
Elementary school	5017	22.7	3.2	14.3	6533	22.3	2.7	11.9	3258	21.9	2.5	11.4
Trade school	9698	22.3	2.9	13.2	11620	22.2	2.7	12.3	5371	21.7	2.6	11.9
Secondary school	3642	21.9	2.9	13.6	3840	21.7	2.5	11.4	1489	21.3	2.3	10.9
						1990						
Elementary school	4432	23.2	3.8	16.3	5802	22.8	3.3	14.5	2953	22.4	3.4	15.2
Trade school	7604	22.8	3.3	14.5	9251	22.7	3.1	13.7	3870	22.1	2.9	12.9
Secondary school	5540	22.1	2.9	13.0	5490	22.1	2.6	11.9	2517	21.7	2.5	11.5
						1995						
Elementary school	2459	23.7	4.5	19.1	2651	22.9	4.1	17.5	3247	22.5	3.6	15.8
Trade school	6438	23.2	3.8	16.3	9456	22.8	3.3	14.3	2307	22.4	3.2	14.1
Secondary school	5188	22.4	3.3	14.7	5005	22.1	2.9	13.2	2521	21.8	2.7	12.4
						2000						
Elementary school	2105	23.5	4.8	20.3	2227	23.1	4.2	18.3	3582	22.5	3.7	16.4
Trade school	8224	23.1	4.1	17.7	12835	22.8	3.6	15.9	2371	22.5	3.4	14.9
Secondary school	5523	22.5	3.8	15.1	3653	22.4	3.2	14.5	2984	21.9	2.9	13.6

Year of investigation * education * region : F-value = 353.65 $p<0.0001$

Statistical analyses

Statistical analyses were carried using the SPSS for Windows Program version 10.0. After computing descriptive statistics (means, standard deviation, relative frequencies (%), coefficient of variation) log transformation of stature, body weight and body mass index were calculated. Three factor factorial ANOVAS (Duncan post hoc tests) using the log transformed values, were computed to assess mean differences in Body mass index with respect to their statistical significance. For a better comparison in the table not log transformed values are presented. Chi-square analysis was used to test the interaction between weight status and education, year of examination and geographic region.

Results

15 year trend in mean stature, body weight, BMI and prevalence of overweight and obesity

The descriptive statistics of stature, absolute body weight and relative weight (BMI) for 4 samples collected in whole Austria in 5 year intervals over a period of 15 years are presented in table 1. The mean value of stature, absolute body weight and the BMI in 18 year old young men increased highly significantly during this period of 15 years ($p<0.0001$). At

the same time the standard deviation of the BMI increased significantly resulting in an increased relative amount of variation from 1985 to 2000 of about 29% (coefficient of variation is 12.7% for 1985, 14.2% for 1990, 15.3% for 1995 and 16.4% for 2000). The prevalence of underweight (BMI < 18.50), overweight (BMI >25.00) and obesity (BMI > 30.00) increased significantly over time, only the percentage of normal weight young men decreased (Chi-square = 1337.8, df = 9, p <0.0001) (Figure 1).

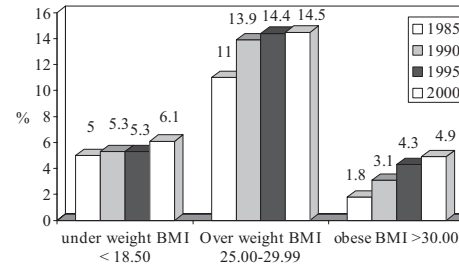

Fig. 1. Weight status (BMI) 1985–2000.

Regional and educational variety of weight status

The descriptive statistics of stature, absolute body weight and relative weight (BMI) for 4 samples collected in the whole of Austria in 5 year intervals over a period of 15 years according to educational status and geographical region are presented in Tables 2, 3 and 4. In each region educational level was significantly related with stature and body weight. With

TABLE 3
HEIGHT (MEAN $\overline{X}$, STANDARD DEVIATION SD, COEFFICIENT OF VARIATION CV) ACCORDING TO YEAR OF INVESTIGATION, EDUCATIONAL LEVEL AND AUSTRIAN REGION (THREE FACTOR FACTORIAL ANOVA)

Level of education	Eastern Austria			Central Austria			Western Austria		
	N	$\overline{X}$	SD	N	$\overline{X}$	SD	N	$\overline{X}$	SD
				1985					
Elementary school	5017	175.6	0.7	6533	175.9	0.2	3258	176.3	0.3
Trade school	9698	177.3	0.7	11620	177.1	0.4	5371	177.3	0.3
Secondary school	3642	178.6	0.3	3840	178.6	0.2	1489	178.6	0.6
				1990					
Elementary school	4432	175.2	0.4	5802	175.9	0.3	2953	175.9	0.4
Trade school	7604	176.9	0.5	9251	176.9	0.4	3870	177.2	0.3
Secondary school	5540	178.7	0.5	5490	178.6	0.3	2517	178.8	0.3
				1995					
Elementary school	2459	175.5	0.3	2651	176.4	0.3	3247	176.7	0.4
Trade school	6438	176.7	0.2	9456	177.5	0.2	2307	177.7	0.2
Secondary school	5188	178.4	0.2	5005	179.2	0.2	2521	178.9	0.3
				2000					
Elementary school	2105	175.7	0.6	2227	176.4	0.4	3582	176.8	0.3
Trade school	8224	177.0	0.2	12835	177.9	0.1	2371	177.8	0.4
Secondary school	5523	178.6	0.2	3653	179.0	0.2	2984	178.8	0.3

Year of investigation * education * region: F-value: 698.3, p<0.0001

TABLE 4
BODY WEIGHT (MEAN $\overline{X}$, STANDARD DEVIATION SD, CORFFICIENT OF VARIATION CV) ACCORDING TO YEAR OF INVESTIGATION, EDUCATIONAL LEVEL AND AUSTRIAN REGION (THREE FACTOR FACTORIAL ANOVA)

Level of education	Eastern Austria			Central Austria			Western Austria		
	N	$\overline{X}$	SD	N	$\overline{X}$	SD	N	$\overline{X}$	SD
				1985					
Elementary school	5017	69.9	0.4	6533	69.1	0.5	3258	68.0	0.5
Trade school	9698	70.3	0.3	11620	69.7	0.5	5371	68.4	0.5
Secondary school	3642	69.8	0.5	3840	69.2	0.4	1489	68.0	0.5
				1990					
Elementary school	4432	71.4	0.8	5802	70.7	0.7	2953	69.6	0.4
Trade school	7604	71.6	0.6	9251	71.1	0.4	3870	69.6	0.7
Secondary school	5540	70.4	0.9	5490	70.3	0.4	2517	69.3	0.9
				1995					
Elementary school	2459	72.9	0.6	2651	71.6	0.1	3247	70.5	0.8
Trade school	6438	72.5	0.2	9456	71.9	0.3	2307	70.8	0.9
Secondary school	5188	71.5	0.3	5005	71.1	0.4	2521	70.0	0.5
				2000					
Elementary school	2105	72.7	0.7	2227	71.7	0.7	3582	70.5	0.7
Trade school	8224	72.6	0.3	12835	72.0	0.4	2371	71.3	0.3
Secondary school	5523	71.8	0.2	3653	71.7	0.2	2984	70.3	0.4

Year of investigation * education * region: F-value = 489.6, p <0.0001

increasing educational level stature increases, while body weight decreases. We found also a significant decrease of mean BMI with increasing educational status for each geographical region and for each year of investigation. From 1985 to 1995 a dramatic increase of mean BMI could be observed for all geographical regions and for all educational strata. The highest mean BMI values were found for young men from Eastern Austria belonging to the lowest educational group during the investigation year 1995. The lowest mean BMI values were found in 1985 for young men belonging to the highest educational strata living in Western Austria. According to the results of three factor factorial ANOVA year of investigation, educational level and region of origin had an independent impact on anthropometrics. Furthermore the relative amount of variation increased during time and decreased with increasing educational level and from East to West. As to be seen in Table 5 the prevalence of overweight and obesity decreased with increasing educational level and from East to West.

Discussion

There is no doubt that overweight and especially obesity causes or exacerbates many health problems, independently as well as in association with other diseases[26]. Unfortunately during the last decades a dramatic trend was observable: the steady increase of obesity and over-

TABLE 5
PREVALENCE OF OVERWEIGHT AND OBESITY (IN %) ACCORDING TO EDUCATIONAL STATUS AND REGION

Educational level	Eastern Austria		Central Austria		Western Austria	
	Over-weight	Obese	Over-weight	Obese	Over-weight	Obese
			1985			
Elementary school	15.2	3.1	12.9	1.8	9.8	1.2
Trade school	12.4	2.3	10.9	1.5	7.9	0.8
Secondary school	8.9	2.2	7.8	0.7	5.2	0.7
Chi-square	131.7, p<0.0001		121.4, p<0.0001		41.2, p <0.0001	
			1990			
Elementary school	18.2	6.4	17.0	4.0	13.1	3.8
Trade school	16.5	3.9	14.6	3.2	11.7	1.8
Secondary school	10.9	1.7	9.9	1.4	7.8	0.8
Chi-square	289.5, p <0.0001		207.5, p<0.0001		117.0, p<0.0001	
			1995			
Elementary school	18.5	9.2	16.4	5.8	13.7	4.4
Trade school	18.0	6.2	15.3	4.2	12.7	3.1
Secondary school	12.5	3.2	10.9	2.2	8.4	1.7
Chi-square	219.3, p<0.0001		151.5, p<0.0001		85.1, p<0.0001	
			2000			
Elementary school	18.6	8.6	16.3	6.6	14.9	4.2
Trade school	16.4	6.7	14.2	5.0	14.1	3.6
Secondary school	13.9	3.4	12.8	3.0	9.7	2.3
Chi-square	145.5, p<0.0001		65.2, p<0.0001		64.8, p<0.0001	

weight prevalence rates, even among children and adolescents. Therefore the call for reducing these high prevalence rates of obesity and overweight has become an important public health goal nearly all over the industrialized world.

The present study was the first one, analyzing the BMI trends for Austria over the last 19 years, starting with BMI data from young male conscripts 1985 (birth cohort 1967) and ending with the BMI data of young 18 year old conscripts in the year 2000 (birth cohort 1982). The data source was the results of the medical examination of conscripts performed by Austrian Military service. As conscription in Austria is compulsory we were able to analyze the data of all young Austrian men (18 years old) during the years of investigation. Only severely somatic and mental handicapped young men were excluded from the medical inspection. Unfortunately we have no information regarding the situation of young Austrian females, because conscription is compulsory only for men in Austria. Therefore comparable data regarding Austrian women do not exist.

As to be expected and comparable to the results of several other studies car-

ried out in other European countries[7,8,12] a steadily increase in absolute body mass index was documented within this 15 year interval under discussion. Furthermore a dramatic increase in the prevalence rates of overweight and obesity was observable, in association with increasing variance. We also found an increasing prevalence of underweight (BMI < 18.50) among young men between 1985 and 2000. Since phases of starvation or malnutrition are unknown during this time period, changing beauty ideals or body image ideals may be the reason for this observation, however this points of view should be considered in a separate paper. As pointed out by several authors, numerous reasons for this increase in the prevalence of overweight and obesity are possible, such as more sedentary life style, changing eating habits and a decrease of physical exhausting work. Although we have only few data regarding behavioral changes during the period of investigation, we can assume, that workload and energy expenditure decreased in all parts of Austria and energy intake increased[27]. Physical activity during leisure time changed into a more sedentary life style, even during childhood and adolescence. Furthermore it is well known that the problem of long and exhausting school ways decreased with an improvement of public transport to school during the period of investigation. This was especially true for rural areas of Austria.

Our analysis of the association between weight status and educational level showed the expected results. The lower the educational level and the social status, the higher was the body mass and the prevalence of overweight and obesity. The BMI increased for all 4 cohorts significantly with decreasing educational level. Furthermore the highest variation in BMI distribution was found for the lowest educational level. In contrast, a decrease of the relative amount of overweight and obese individuals was found with increasing educational level. In Austria the educational level is an useful indicator for social status or socioeconomic circumstances of the individual. During the 15 year period of investigation we found an increase of the percentage of recruits with secondary education. This reflects the improvement of the social and economic situation in Austria from the late seventies to the nineties.

The possible effects of population stratification on secular changes in stature in Austria was pointed out by Weber et al. [28]. However, while higher social status is associated with increased stature, increased body mass is associated with lower social status. This inverse relationship between BMI and position on the social scale is well known for societies of the developed world[6,9,12]. In Great Britain a strong social gradient of body mass related to social class was observed, ranging from 10.7% in high social class to 25% in low social class[17]. These social differences in the prevalence rate of obesity and overweight may be due to social-class differences in nutritional habits, and certain features of lifestyle such as low phy-sical activity during leisure time[12]. Education is not only strongly associated with social class, higher education provides also specific knowledge about health skills and a larger cultural background that might facilitate interpreting health information[21]. Several studies yielded also a significant relationship between parental education, especially maternal education, and the prevalence of obesity among children[8,22,29].

Beside time trends in BMI and associations between BMI and educational level, the present study focused on also regional variety. Regional differences in prevalence rates of obesity and overweight within one country were pointed out by several studies[6]. In the present study three parts of Austria were com-

pared the Eastern part, characterized by low altitude and the Austrian capital Vienna, the central part of Austria, characterized by a high variation in altitude and some important Industrial areas, and the Western parts of Austria, characterized by very high altitude and a predominantly rural area. For all four years of investigation and for all three educational groups, BMI was higher and overweight more prevalent in the Eastern than in the Western regions of Austria. Even the variation of BMI was higher in the Eastern part of Austria. Since all educational levels showed a similar trend, differences in educational level can not explain these regional differences. Two different explanations for this observation are possible. On the one hand marked differences in lifestyle, such as harder work in the rural areas of high altitude of the Western part of Austria in comparison to the workload in the very flat parts of Eastern Austria may be assumed. Children growing up in the alpine or higher altitude regions of Western Austria and some parts of Central Austria had longer active ways to school, a higher workload and a higher physical activity during leisure time. These observations were reported by personal of Austrian school authority, however public transport to school was improved in all parts of Austria during the period of investigation. Regarding different eating habits and activities during leisure time in the individual parts of Austria we have unfortunately only few information, however different nutritional habits between Western parts of Austria and Eastern parts may be assumed. One the other hand genetic differences may exist. At first the comparison of stature yielded that young men in Eastern Austria were significantly shorter than their counterparts from Central and Western Austria. This was true of all educational levels and for all years of investigation. This observation may be interpreted as a general anthropometric difference between the sample from Eastern Austria and the samples from central and Western Austria. Furthermore the Austrian population is ethnically not highly homogeneous. Especially in the Eastern parts the population is ethnically more heterogeneous than the Central and especially the Western part of Austria because since hundreds of years immigrants, especially from the Eastern parts of Europe such as Czech Republic, Hungary, Russia, former Yugoslavia favored the Eastern part of Austria where the capital Vienna is located. It can be assumed that the population of the Western part of Austria is much more ethnically homogeneous than the population of Central and especially Eastern Austria.

Conclusions

From the present results we can conclude, that the prevalence of overweight and obesity increased significantly during the period of investigation. This was true of all educational strata and Austrian regions. However, for all for cohorts a social and regional variety was observed. The social differences in BMI and the prevalence of overweight and obesity seems to have the same reasons as in other developed countries and the time trends in BMI development correspond with the observations from other European countries. The observed regional differences, however, may be due to behavioral differences such as physical activity during leisure time, nutritional habits, differences in physical workload but also due to the specific ethnically heterogeneous Austrian population. From these results we can conclude that obesity and overweight represent an increasing health problem among young Austrian males. This is especially true of young men of low social status living in the eastern part of Austria.

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REGIONALNE I SOCIJALNE RAZLIKE U BMI I PREVALENCIJI PREKOMJERNE TJELESNE TEŽINE I PRETILOSTI MEĐU 18 GODINA STARIM MLADIĆIMA IZ AUSTRIJE U RAZDOBLJU OD 1985 DO 2000

SAŽETAK

Prikazani su podaci o indeksu tjelesne mase (BMI) osamnaestogodišnjih austrijskih ročnika. Mjerenja su vršena svakih 5 godina (od 1985 do 2000) te su uspoređeni podaci četiri kohorte ročnika, njih ukupno 180.716. Cilj studije bio je analizirati regionalne i socijalne razlike i vremenski trend visine, tjelesne mase i BMI kao i stope prevalencije prekomjerne tjelesne težine (BMI > 25) i pretilosti (BMI > 30). Zamijećen je značajan trend porasta stope prekomjerne tjelesne težine i pretilosti. Tijekom 15-godišnjeg razdoblja BMI je značajno porastao kao i varijacije raspodjele BMI. Utjecaj razine obrazovanja na BMI kao i prevalencije prekomjerne tjelesne težine i pretilosti bio je značajan. S porastom razine obrazovanja, BMI kao i prevalencije prekomjerne tjelesne težine i

pretilosti značajno je niža. Nadalje, pronađena je značajna regionalna varijabilnost u vrijednostima BMI i stopama prevalencije prekomjerne tjelesne težine i pretilosti, koje značajno rastu od zapadnog prema istočnom dijelu Austrije. Oba nalaza – i socijalna i regionalna varijabilnost prevalencije prekomjerne tjelesne težine i pretilosti – pronađena su u sve 4 kohorte. Ovi rezultati sugeriraju kako su i prekomjerna tjelesna težina i pretilost sve značajniji zdravstveni problemi mladih muškaraca u Austriji, te su kod osoba lošijeg socijalnog statusa i kod stanovnika istočnog dijela Austrije još izraženiji.