

^a Department of Physiology, University of Oulu

^b Department of Physiology, University of Tartu

^c Department of Public Health Science and General Practice, University of Oulu

^d Finnish Institute of Occupational Health

[†] Deceased

Smoking differences between university faculties in Tartu, Estonia, and Oulu, Finland, after the disruption of communism

Submitted: 11 July 2005

Accepted: 3 June 2006

Summary

Objectives: To provide information on smoking differences between university faculties.

Methods: Data from smoking surveys performed on 1441 staff members and 2308 students at the University of Tartu, Estonia, soon after the fall of communism, were analysed by faculties, using similar data from the University of Oulu, Finland (1830 staff members, 5947 students) for reference.

Results: Wide variations in smoking were found between faculties in Tartu, the prevalence being high among male students of theology (54 %) and low among staff and students in the faculties of exercise & sports sciences (<5 %) and mathematics (<15 %). Less variation was seen in Oulu. The medical faculty showed low smoking rates in Oulu but not in Tartu.

Conclusions: High percentages of smokers were typical of Tartu faculties representing disciplines closely connected with the country's transition (e.g. theology), and low percentages in faculties emphasising physical and mental performance (e.g. sports). The relatively high percentage of smokers in the Tartu medical faculty compared with that in Oulu can be interpreted as delayed diffusion of medical information beyond the former Iron Curtain.

Keywords: Smoking – Universities – Students – Estonia – Finland.

There are large variations in smoking between population groups, which are partly attributable to selection and partly to cultural factors and social learning (Andersen et al. 2004; Aveyard et al. 2004). Thus, people engaged in different occupations have widely varying smoking rates (Berg et al. 1991; Lipand et al. 1993), and the hugely increased differences in

mortality by educational groups in Estonia, for example, are partly attributable to smoking. As longevity had actually improved among people with a higher education (Leinsalu et al. 2003), who reportedly smoke less than others (Berg et al. 1991; Lipand et al. 1993), it is useful to look at smoking habits among university communities, which represent the most educated segment of the population. University staff and students are likely to perceive emerging trends in society first, and according to the innovation diffusion theory (Ferrence 1996) they should be the first to adopt new behaviour patterns. Independently of the level of education, people belonging to different faculties in a university have distinct professional cultures and values, and they are expected to show variation in their smoking habits and perhaps different responses to changes in the social environment. Few studies of smoking among university communities have focused on both staff and students, however (Behn et al. 2001; Sotomayor et al. 2000), and none of them has made use of the unique natural experiment provided by Estonia's transition to western life.

We have analysed data from surveys performed in two universities, one in Tartu, Estonia, a former communist country which regained independence in 1991 after 50 years of Soviet rule, and the other in Oulu, Finland, a neighbouring country further north which has been independent since 1917. The data come from the early 1990's, since we thought that variations in smoking between faculties, if any exist, should have been most pronounced during Estonia's ongoing transition process. Identification of such differences would also add to our understanding of the mode of diffusion of smoking in the general population and provide tools for promoting non-smoking behavior. This information is particularly relevant to Estonia, where 48 % of men are smokers (National Institute for Health Development 2005) and male life expectancy has stagnated at 65 years since the 1960's (Katus 2000).

Methods

A questionnaire inquiring about smoking habits was distributed to all members of the University of Tartu staff at their places of work between autumn 1992 and spring 1993. Identical questionnaires had been sent to the University of Oulu staff by internal post in 1991. Replies were received from 1 441 staff members in Tartu (response rate 75 %) and 1 830 in Oulu (75 %). The name of the faculty concerned was missing in 35 cases in Tartu and five in Oulu, and the gender of the respondent remained unknown in three cases in both universities. Additionally, 297 people in Oulu working in separate institutions were excluded. The analysis was restricted to people aged 15–64 years, 1 324 subjects in Tartu and 1 343 in Oulu.

A similar questionnaire was given to students at the University of Tartu during their lectures and mandatory exercises in 1992–1993. There were 5 900 students registered at the university at the time of the survey, and 2 308 questionnaires were returned. The number of students attending the lectures and exercises at the time of the survey was not known, but the questionnaire was returned by practically all of those who received it. In Oulu, the same questionnaire had been mailed to all 7 447 registered students in 1990 and was returned by 5 947 (80 %). The name of the faculty concerned was missing in 12 cases in Tartu and 19 in Oulu, and information on gender remained unknown in three and seven cases, respectively, which left 2 305 cases in Tartu and 5 940 in Oulu for study.

Respondents were asked in the questionnaires whether they currently smoked daily, irregularly or not at all, and if they did not currently smoke, whether or not they had previously done so. The results were treated as percentages of daily smokers, those who had ever smoked daily, and as percentages of quitters in relation to ever-smokers. Potential confounders considered were age (staff in classes 15–24, 25–34, ..., 55–64, students –19, 20–24, 25+), and professional group. Professors, teachers and research associates were classified as belonging to the higher professional group and other staff members to the lower group. We also considered marital status, which was closely associated with smoking, but this factor did not confound the results and was omitted.

The results were also presented as adjusted differences of daily smoking between each faculty and the reference faculty, which was taken to be the medical faculty because of its large size. Adjustments were made using binary regression in which daily smoking (yes/no) was the response variate and the link function identity, and faculty and age, and also professional status in the case of staff, were explanatory factors (Stata Corporation 1999). The adjusted results were expressed as absolute percentage differences relative to the baseline, together with their 95 % confidence intervals.

Heikkinen R, Kivastik J, Kingisepp PH et al.
Smoking differences between university faculties in Tartu, Estonia, and Oulu, Finland, after the disruption of communism

Results

Sample characteristics

The mean age of the staff was almost similar in Tartu and Oulu (42 and 40 years, respectively) while the Tartu students were younger (21 years) than those in Oulu (25 years) (Tab. 1). A smaller percentage of the staff were men in Tartu (41 %) than in Oulu (53 %) as was also the case among the students (36 % in Tartu, 48 % in Oulu). One half of the staff members at both universities were higher professionals, but the proportion varied, being very low in the university administrations relative to the actual faculties and twice as high among men than among women in both universities.

Overall differences in smoking

One half of the men in the whole population in Estonia and 1/3 in Finland smoked daily at the time of the survey and 65 % and 52 %, respectively, had started regular smoking at some time (Tab. 2). The proportions of daily smoking men among the university staffs and student bodies were much below the national level in both countries, the finding being similar for men who had ever smoked daily. One fifth of all Estonian and Finnish women alike smoked daily at that time, while 1/4 and 1/3 of them, respectively, had ever done so on a regular basis. These percentages were consistently lower among the university staff and students in both countries.

The 1.5-fold excess in the proportion of daily smoking men in the entire Estonia vs. the entire Finland was repeated between the universities while no such consistent differences could be identified in women. Little difference in daily smoking was usually seen between the staff and the students at each university, except among Tartu female students, of whom only 5 % smoked, while 11 % of Tartu female staff did so.

The gender difference in daily smoking was much greater in Estonia than in Finland (29 vs. 12 percentage points, respectively), the trend being similar but smaller at the level of universities. Overall, higher professional groups showed lower percentages of daily smokers than lower groups: in Tartu men 19 % vs. 24 %, Oulu men 10 % vs. 20 %, Tartu women 9 % vs. 13 % and Oulu women 4 % vs. 13 %.

Smoking by faculty

In Tartu men, the percentages of daily smokers, both staff and students, showed wide variation between faculties (Tab. 3, Tab. A1). The relations changed slightly when adjustments were made for age and professional group; this is illustrated for daily smoking in Figure 1. The most conspicuous finding was the low percentage of daily smokers in the faculty of exercise and sports sciences in all cases and the similarly low percentage in the faculties of mathematics, and in the

Table 1 Characteristics of the subjects

	Staff				Students		
	No.	Men (%)	Higher professionals (%)	Mean age (yr)	No.	Men (%)	Mean age (yr)
<i>University of Tartu (1992–3)</i>							
Faculties/departments							
Philosophy (including humanities)	216	34.7	75.4	42.4	380	17.9	19.9
Biology & geography	70	60.0	57.4	38.8	268	44.4	20.5
Physics & chemistry	175	60.0	54.9	44.7	107	73.8	20.0
Mathematics & computing science	108	54.6	54.7	44.4	196	53.6	20.6
Medicine	305	41.6	66.7	45.3	814	25.4	21.4
Exercise and sports science	53	47.2	71.2	44.8	139	44.6	20.5
Economics and business administration	52	50.0	68.6	41.5	308	42.9	20.8
Law	49	51.0	61.2	44.2	37	62.2	22.2
Theology					44	54.6	21.6
Administration	266	17.3	3.8	41.5			
Missing information	30	20.0	8.0	43.1	12	66.7	21.2
Total	1324	40.5	52.1	41.8	2305	35.9	20.8
<i>University of Oulu (1991)</i>							
Faculties/departments							
Humanities	100	49.0	68.0	42.6	969	24.3	25.8
Education	143	44.8	79.7	42.3	923	25.6	24.6
Science	329	59.3	67.8	39.9	1462	47.9	24.1
Medicine	419	44.2	54.7	40.6	759	28.2	24.8
Technology	273	71.8	59.7	38.0	1808	80.5	24.2
Administration	77	22.1	1.3	42.7			
Missing information	2	0.0	100.0	46.5	19	47.4	30.5
Total	1343	52.7	59.5	40.2	5940	48.0	24.6

faculty of physics and chemistry, the finding being much similar for ever-smoking. High smoking rates were found especially among the students of theology, among whom 54% of the men and 20% of the women had smoked daily at some time and still did so at the time of the survey. In the faculty of law, the percentages of daily smokers and ever-smokers were relatively high, with the exception of the male staff of which only 12% were smokers. Many males among the staff of the faculty of biology and geography, economics and philosophy were smokers. The prevalence of smoking in the Tartu medical faculty was around the average level, although a slightly elevated figure was found for male medical students.

The differences in smoking at the University of Oulu were usually small (Tab. 3, Tab. A2). However, many people in the faculty of humanities, men and women and staff and students alike, smoked daily or had done so at some time, and men in the administrative department were often smokers. Daily smokers, both staff and students and men and women, were relatively few in the medical faculty.

Quitting smoking

Out of the men who had ever smoked on a regular basis, fewer in Estonia (24%) than in Finland (36%) had quit at some later point, the finding being much similar for women (19% vs. 36%, respectively). The proportions of quitters were much higher among both university staffs than in the respective general populations and much more so in Finland than in Estonia (Tab. 2). The proportion of students, both men and women, who had quit was twice as high in the Finnish as in the Estonian university.

An especially high proportion of female staff members (59%) had quit in Oulu compared with Tartu (19%) while this difference was more moderate for staff men (55% vs. 40% in Oulu and Tartu, respectively).

Significant differences by faculties in the proportions of quitters were seen among the Tartu male staff, the highest figures being seen in the faculty of exercise and sports sciences, mathematics and law and an especially low figure in the faculty of biology and geography (Tab. 3). Otherwise, the differences in quitting were insignificant or the numbers were very small.

Table 2 Prevalence of daily smoking, ever smoking and quitting of smoking among university staff and students in Tartu (Estonia) and Oulu (Finland). The figures for the general populations are shown for comparison

	Men	Women
ESTONIA		
<i>Daily smokers (%)</i>		
General population (1992) ^a	49.0	19.7
University of Tartu staff (1992–3)	20.4	11.2
University of Tartu students (1992–3)	20.1	5.0
<i>Ever smoked (%)</i>		
General population (1992) ^a	64.6	24.3
University of Tartu staff (1992–3)	33.9	13.8
University of Tartu students (1992–3)	24.2	6.1
<i>Quitted/ever smoked (%)</i>		
General population (1992) ^a	24.1	18.9
University of Tartu staff (1992–3)	40.0	19.1
University of Tartu students (1992–3)	17.2	18.0
FINLAND		
<i>Daily smokers (%)</i>		
General population (1991) ^b	33.3	21.6
University of Oulu staff (1992–3)	12.3	8.5
University of Oulu students (1992–3)	13.3	8.0
<i>Ever smoked (%)</i>		
General population (1991) ^b	51.7	33.7
University of Oulu staff (1991)	27.3	21.0
University of Oulu students (1991)	19.9	13.3
<i>Quitted/ever smoked (%)</i>		
General population (1991) ^a	35.6	35.9
University of Oulu staff (1991)	54.9	59.4
University of Oulu students (1991)	33.0	39.7

^a Source: Lipand et al. 1993^b Source: Berg et al. 1991

Among the medical faculty staff in Tartu, actually fewer men and women than in the whole staff (men 31 % vs. 40 %, women 12 % vs. 19 %) had quit while in Oulu, the quitting rates among the medical faculty staff were slightly higher than average (men 58 % vs. 55 %, women 69 % vs. 59 %). The medical faculty male staff in Oulu had quit twice as often as the medical faculty male staff in Tartu (58 % vs. 31 %, respectively), the respective difference between medical faculty women being 6-fold (69 % vs. 12 %). Among the medical students, the proportions of quitters were on the average level in both universities and both genders.

Discussion

This is the first study to report wide variations in smoking between university faculties. The differences in the level of education are too small to account for the variations, and it is more likely that distinct professional cultures, and perhaps

selection, may explain the finding. The period concerned was optimal for detecting such differences, since the changes occurring in Estonian society at the time could have increased people's liability to resort to smoking as a means of coping, and the diffusion of anti-smoking attitudes could have been accelerated among those who were rapidly adopting new behavioural patterns. The smoking differences were smaller in the Finnish university, where no such factors were operative, although its different composition by faculties prevents any direct comparisons. Limitations of the study include the absence of longitudinal data which prevented any closer analysis of a possible link between initiation and cessation of smoking with Estonia's transition. The response rates were acceptable, although they remained indeterminate among the Tartu students due to the difficulty of defining the true base population.

The explanation based on anomie (Srole & Fischer 1973), identity problems and stress-related coping (Breslau et al. 1993) is best applicable to students of theology, who currently smoked, and in the case of men, also had formerly smoked considerably more than the others. Smoking habits among this group of students, as also among Lutheran pastors, have remained unknown, although the very low mortality of the latter in Finland would imply low smoking rates (Marin 1986). The low status of the Lutheran church during the communist era (Plaat 2002) and the consequently altered mix of the students who applied to the faculty could provide a further explanation. Similar factors could explain the high prevalence of smoking among students of law and that of current smoking among the female staff of the faculty of law and that of former smoking among male staff of this faculty, which had the closest connection with the changes in Estonian society during the transition from a restrictive socialist legislation to an extremely liberal one. An increase of anomic states in Estonia soon after the regained independence is suggested by the greatly increased mortality from suicides and accidents in 1994 (Health in Estonia 2000). Students of the humanities and fine arts are reputed to be smokers (Kunttu & Huttunen 2001; Webb et al. 1997), and we similarly noted consistently high percentages of current and former smoking among them. The underlying reasons for the above differences remain unknown but deserve further study which should differentiate between adoption of smoking, quitting and current smoking.

Male doctors smoke less than the general population of men, both in Finland (Barengo et al. 2004) and in Estonia (Pärna et al. 2005), and they also have a low incidence of lung cancer in both countries (Innos et al. 2002; Pukkala et al. 1983), although little is known in general about smoking or lung cancer among university medical staff. Finnish male medical students smoked less than students in other faculties in the 1960s, but this was not true of female students (Kari-Koski

Table 3 Prevalence of daily smoking, ever smoking and quitting of smoking among the staff and students at the University of Tartu, Estonia (1992–93), by faculties

	Staff			Students		
	Daily smokers (%)	Ever smoked (%)	Quit/ever smoked (%)	Daily smokers (%)	Ever smoked (%)	Quit/ever smoked (%)
MEN						
<i>Faculty/Department</i>						
Philosophy (including humanities)	26.7	39.2	31.0	23.5	26.5	11.1
Biology & geography	31.0	33.3	7.1	16.1	20.3	20.8
Physics & chemistry	16.2	32.4	50.0	19.0	29.1	34.8
Mathematics & computing science	11.9	37.3	68.2	13.3	16.2	17.7
Medicine (including pharmacy)	22.8	33.1	31.0	27.1	33.0	17.7
Exercise & sports science	4.0	12.0	66.7	4.8	6.5	25.0
Economics & business administration	23.1	34.6	33.3	15.9	17.4	8.7
Law	12.0	32.0	62.5	30.4	34.8	12.5
Administration	26.1	40.0	33.3			
Theology				54.2	54.2	0.0
Total	20.4	33.9	40.0	20.1	24.2	17.2
No. of respondents	530	528	179	818	817	198
χ^2 (df = 8)	15.22	7.52	20.52	40.34	41.64	9.87
p ~	0.055	0.481	0.009	0.000	0.000	0.274
WOMEN						
<i>Faculty/Department</i>						
Philosophy (including humanities)	11.4	15.0	23.8	4.5	5.8	22.2
Biology & geography	14.3	14.3	0.0	1.3	3.4	60.0
Physics & chemistry	5.7	10.0	42.9	0.0	3.6	100.0
Mathematics & computing science	6.1	8.2	25.0	1.1	2.2	50.0
Medicine (including pharmacy)	9.1	10.2	11.5	5.9	7.1	16.3
Exercise & sports science	3.6	10.7	66.7	2.6	2.6	0.0
Economics & business administration	1.5	15.4	25.0	7.4	7.4	0.0
Law	20.8	20.8	0.0	7.1	7.1	0.0
Administration	15.0	17.9	15.4			
Theology				20.0	20.0	0.0
Total	11.2	13.8	19.1	5.0	6.1	18.0
No. of respondents	761	759	105	1473	1470	89
χ^2 (df = 8)	11.55	8.55	10.67	22.73	14.82	16.63
P ~	0.172	0.382	0.221	0.004	0.063	0.034

nen & Hirvonen 1969), while no such information is available for later periods in Finland and none at all for Estonia. Other studies have usually found low smoking rates among medical students, not only in males but also in females (Webb et al. 1997), although there is considerable variation worldwide (Crofton et al. 1994). In Oulu, both the staff and students of the medical faculty smoked less than people in most other faculties, while in Tartu their smoking rates were just on the average. We interpret this in terms of better awareness of the hazards of smoking among the medical profession in Oulu, and perhaps also the lower social status of physicians in Soviet Estonia. In fact, these hazards were recognised relatively early in Estonia (Tiik 1961), but the information was adopted slowly, due to the lack of contacts with the capitalist world.

Sportsmen and sportswomen, as well as students at sports academies, have low smoking rates (Emmons et al. 1998; Paretto-Waterl et al. 2003). Less than 5% of the staff and students at the Tartu faculty of exercise and sports sciences were current smokers – actually a lower figure than that reported for Swedish doctors, who previously held the world record (Bolinder et al. 2002). Little information exists on smoking among students of mathematics but one study performed in 14 British universities found low smoking rates among them compared with students in most other faculties (Webb et al. 1997), as was the case here (although many of them had previously smoked), and we similarly noted low figures for current smoking at the Tartu faculty of physics and chemistry. Smoking causes worsening of physical performance, it contradicts

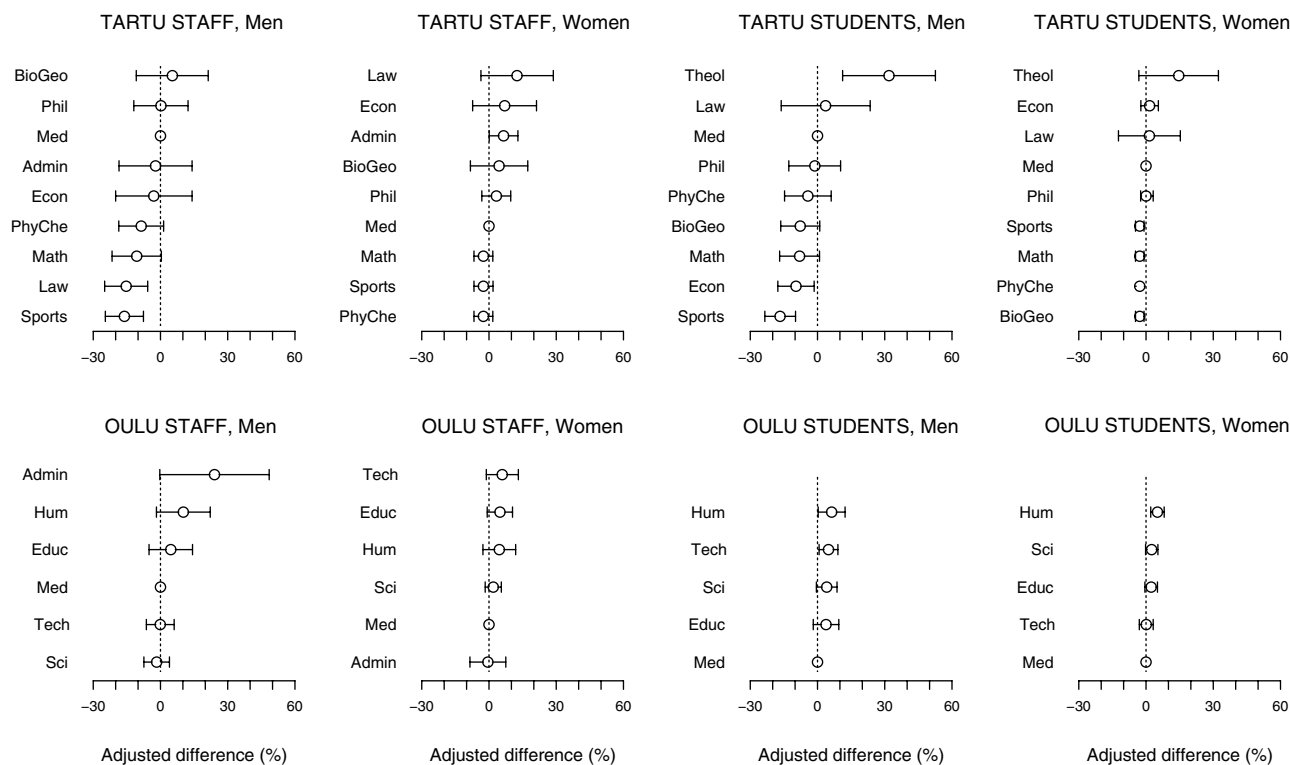


Figure 1 Percentage differences in daily smoking between faculties at the University of Tartu, Estonia, and the University of Oulu, Finland. Figures adjusted to age and professional status (staff). Baseline = medical faculty

the ideal of a healthy man and it also lowers physical (Biener 1972) and cognitive performance (Kalmijn et al. 2002; Richards et al. 2003), which may have encouraged abstaining from smoking in these faculties. Additional and more speculative factors could be that athletics, mathematics and physics were highly appreciated in the communist world because of their technical, military and propagandistic value which may have affected smoking habits through health-based selection. Other studies have reported smoking as having a negative association with school success (Timisjärvi et al. 1974; Hu et al. 1998), and also with educational achievements in later life (Koivusilta et al. 2003), but we have found no data pertaining specifically to mathematics and science.

Smoking is usually more prevalent among men than women, but the gender ratio has greatly narrowed in Finland in recent decades, although less so in Estonia (Berg et al. 1991; Lipand et al. 1993), and in some sub-populations young women actually smoke more than young men (Joossens et al. 1994). Our finding was mostly that of a “standard” pattern, with men smoking more than women, but among the Oulu university staff, the association was reversed, due to women in some faculties showing equal or greater proportions of current smokers than men. This variability of the gender ratio for smoking can be interpreted in terms of people in some professions (e.g. technology) adopting modern behaviour patterns

first and others lagging behind (e.g. medicine). An omen of a similar trend in Tartu was seen in the faculty of law, where twice as many women than men smoked, albeit no consistent trend was seen across all faculties.

The smoking differences between the faculties remain largely unexplained, but selection based on various cultural aspects typical of some faculties (e.g. sports, mathematics and theology) seem to restrain or favour smoking, either by affecting the starting or quitting of smoking. The rapid social changes during Estonia’s transition may be underlying factors which could have created anomie, loss of identity and depression, thereby affecting smoking habits. The faculties showing favorable status should act as opinion leaders and thereby endorse the ongoing process of reducing smoking, especially in Estonia, where smoking rates are still high (National Institute of Health Development 2005) and any levelling off of differences would be hindered by the current ultra-liberal economic policy. A re-survey recently performed among the staff of both universities will test the assumption that university communities, or some of their faculties, are leading the way for the whole nation in the reduction of smoking.

Acknowledgements

This study was funded by the Juho Vainio Foundation, Helsinki, Finland.

Table 4 Prevalence of daily smoking, ever smoking and quitting of smoking among the staff and students at the University of Oulu, Finland (1991), by faculties

	Staff			Students		
	Daily smokers (%)	Ever smoked (%)	Quit/ever smoked (%)	Daily smokers (%)	Ever smoked (%)	Quit/ever smoked (%)
MEN						
<i>Faculty/Department</i>						
Humanities	20.4	44.9	54.6	15.3	26.4	41.9
Education	14.1	26.6	47.1	12.7	20.3	37.5
Science	9.2	21.5	57.1	13.0	20.1	35.0
Medicine	10.8	25.4	57.5	8.9	14.0	36.7
Technology	11.7	29.1	59.7	13.8	19.5	29.0
Administration	41.2	47.1	12.5			
Total	12.3	27.3	54.9	13.3	19.9	33.0
No. of respondents	706	706	193	2839	2836	563
χ^2 (df = 5)	18.42	14.90	6.96			
χ^2 (df = 4)				4.90	11.09	5.18
P ~	0.002	0.011	0.224	0.30	0.026	0.269
WOMEN						
<i>Faculty/Department</i>						
Humanities	9.8	15.7	37.5	10.8	17.6	38.8
Education	5.1	15.4	66.7	7.9	13.1	40.0
Science	9.7	17.2	43.5	8.2	13.4	39.2
Medicine	6.8	22.2	69.2	5.7	9.4	39.2
Technology	13.0	27.3	52.4	5.7	10.2	44.4
Administration	10.0	28.3	64.7			
Total	8.5	21.0	59.4	8.0	13.3	39.7
No. of respondents	635	634	133	3079	3077	408
χ^2 (df = 5)	4.56	7.53	6.98			
χ^2 (df = 4)				14.20	21.87	0.405
P ~	0.472	0.184	0.222	0.007	0.000	0.982

Zusammenfassung

Unterschiede im Rauchverhalten an universitären Fakultäten in Tartu, Estland, und Oulu, Finnland, nach dem Ende des Kommunismus

Fragestellung: Welche Unterschiede gibt es bezüglich des Rauchverhaltens an den universitären Fakultäten?

Methoden: Angaben aus Umfragen zum Rauchen, durchgeführt kurz nach Ende des Kommunismus, bei 1441 Fakultätsangestellten und 2308 Studierenden an der Universität Tartu, Estland, wurden nach Fakultäten analysiert und mit ähnlichen Daten der Universität Oulu, Finnland, (1830 Fakultätsangestellte, 5947 Studierende) die als Referenzdaten dienten, verglichen.

Resultate: Es wurden grosse Unterschiede nach Fakultäten an der Universität Tartu festgestellt, wobei die Prävalenz bei

männlichen Studierenden der Theologie hoch war (54%) und tief bei Angestellten und Studierenden der Fakultäten für Bewegungs- und Sportwissenschaften (<5%) und Mathematik (<15%). Die Unterschiede in Oulu fielen geringer aus. Der Raucheranteil an der medizinischen Fakultät war niedrig in Oulu, jedoch nicht in Tartu.

Schlussfolgerungen: Ein hoher Raucheranteil ist typisch für Fakultäten in Tartu, die Disziplinen repräsentieren, welche in engem Zusammenhang stehen mit dem politischen Veränderungsprozess des Landes (z.B. Theologie), ein niedriger Anteil ist dagegen typisch für Fakultäten an denen auf körperliche und psychische Leistungsfähigkeit mehr Gewicht gelegt wird (z.B. Sport). Der relativ hohe Anteil an Rauchern an der medizinischen Fakultät in Tartu im Vergleich zu jener von Oulu kann als Diffusionsverzögerung medizinischer Information jenseits des Eisernen Vorhangs interpretiert werden.

Heikkinen R, Kivastik J, Kingisepp PH et al. Smoking differences between university faculties in Tartu, Estonia, and Oulu, Finland, after the disruption of communism

Résumé

Différences de prévalence du tabagisme entre des Facultés des Universités de Tartu (Estonie) et de Oulu (Finlande) après la chute du communisme

Objectifs: Fournir des données sur les différences de prévalence du tabagisme entre des Facultés universitaires.

Méthodes: Des données issues d'enquêtes sur le tabagisme menées après la chute du communisme ont été analysées par facultés: 1441 employés et 2308 étudiants de l'Université de Tartu (Estonie) ont été comparés aux 1830 employés et 5947 étudiants de l'Université de Oulu (Finlande) (référence).

Résultats: De grandes variations ont été identifiées entre les Facultés de Tartu: la prévalence du tabagisme était élevée chez

les hommes étudiant la Théologie (54 %), mais basse parmi les employés et les étudiants des Facultés des Sciences de l'activité physique & du sport (<5 %) et de Mathématiques (<15 %). Des variations moins importantes ont été identifiées à Oulu. Les taux de tabagisme en Faculté de Médecine étaient bas à Oulu (Finlande) mais pas à Tartu (Estonie).

Conclusions: De hauts pourcentages de fumeurs ont été identifiés dans les Facultés de Tartu (Estonie) qui abordent des disciplines en lien étroit avec la transition en cours (par ex. Théologie); par contre, ces taux étaient bas dans les Facultés qui mettent l'accent sur les performances physiques et mentales (par ex. Sports). Le pourcentage relativement important de fumeurs en Faculté de Médecine de Tartu comparé à celui de Oulu peut être expliqué par une diffusion de l'information retardée par la présence du Rideau de Fer.

References

- Andersen M, Leroux BG, Bricker JB, Rajan KB, Peterson AV (2004). Antismoking parenting practices are associated with reduced rates of adolescent smoking. *Arch Ped Adolesc Med* 158: 348–52.
- Aveyard P, Markhan WA, Lancashire E, et al. (2004). The influence of school culture on smoking among pupils. *Soc Sci Med* 58: 1767–80.
- Barengo NC, Sandström P, Jormanainen V, Mälykangas M (2004). Changes in smoking prevalence among Finnish physicians 1990–2001. *Eur J Public Health* 14: 201–3.
- Behn V, Sotomayor H, Cruz M, Naveas R (2001). Motivaciones para dejar de fumar en funcionarios y estudiantes universitarios ex fumadores. *Rev Med Chile* 129: 540–6.
- Berg MA, Peltoniemi J, Puska P (1991). Health Behaviour among Finnish Adult Population, Spring 1991. *Kansanterveyslaitoksen julkaisu B1/1991*. Helsinki: Kansanterveyslaitos.
- Biener K (1972). *Sporthygiene und Präventivmedizin*. Berlin: Verlag Hans Huber.
- Bolinder G, Himmelman L, Johannsson K (2002). Swedish physicians smoke least in all the world. *Läkartidningen* 99: 3111–7.
- Breslau N, Kilbey MM, Andreski P (1993). Vulnerability to psychopathology in nicotine-dependent smokers: an epidemiologic study of young adults. *Am J Psychiatry* 150: 941–6.
- Crofton JW, Freure PP, Tessier JF (1994). Medical education on tobacco: implications of a worldwide survey. Tobacco and Health Committee of the International Union against Tuberculosis and Lung Disease (IUATLD). *Med Educ* 28: 187–96.
- Emmons KM, Wechsler H, Dowdall G, Abraham M (1998). Predictors of smoking among US college students. *Am J Public Health* 88: 104–7.
- Ferrence R (1996). Using diffusion theory in health promotion: the case of tobacco. *Can J Public Health* 87: 24–7.
- Health in Estonia 1991–2000 (2002). Tallinn: Eesti Haigekassa.
- Hu TW, Lin Z, Keeler TE (1998). Teenage smoking, attempts to quit, and school performance. *Am J Public Health* 88: 940–3.
- Innos K, Rahu K, Baburin A, Rahu M (2002). Cancer incidence and cause-specific mortality in male and female physicians: a cohort study in Estonia. *Scand J Public Health* 30: 133–40.
- Joossens L, Naett C, Howie C, Muldoon A (1994). Tobacco and health in the European Union: an overview. Brussels: European Bureau for Action on Smoking prevention.
- Kalmijn S, van Bostel MP, Verschuren MW, Jolles J, Launer LJ (2002). Cigarette smoking and alcohol consumption in relation to cognitive performance in middle age. *Am J Epidemiol* 156: 936–44.
- Kari-Koskinen O, Hirvonen L (1969). Smoking habits of university students. *Acta Socio-Medica Scand* 1: 3–12.
- Katus K (2000). Long-term mortality trend in the Baltic countries. *Trames* 4: 231–56.
- Koivusilta L, Rimpelä A, Vikat A (2003). Health behaviours and health in adolescence as predictors of educational level in adulthood: a follow-up study from Finland. *Soc Sci Med* 57: 577–93.
- Kunttu K, Huttunen T (2001). Student health survey 2000: national survey among Finnish university students. *Social Security and Health Reports* 45, 2001. Helsinki: Social Insurance Institution, Finland.
- Leinsalu M, Vägerö D, Kunst A (2003). Estonia 1989–2000: enormous increase in mortality differences by education. *Int J Epidemiol* 32: 1081–7.
- Lipand A, Kasmel A, Tasa E, Puska P, Berg M (1993). Health Behaviour among Estonian Adult Population, Spring 1992. *Kansanterveyslaitoksen julkaisu B3/1993*. Helsinki: Kansanterveyslaitos.
- Marin R (1986). Occupational mortality 1971–80. Helsinki: Central Statistical Office of Finland, Studies 129.
- National Institute of Health Development (2005). Health Behavior among Estonian Adult Population, 2004. Tallinn: National Institute of Health Development.
- Paretti-Waterl P, Guagliardo V, Verger P, Pruvost J, Mignon P, Obadia Y (2003). Sporting activity and drug use: Alcohol, cigarette and cannabis use among elite student athletes. *Addiction* 98: 1249–56.
- Pärna K, Rahu K, Rahu M (2005). Smoking habits and attitudes towards smoking among Estonian physicians. *Public Health* 119: 390–9.
- Plaat J (2002). Christian and Non-Christian Religiosity in Estonia in the 1990s: Comparison of Estonians and Other Ethnic Groups. In: *Pro Ethnologia* 14. Estonian National Museum, Tartu 2002: 97–133. Retrieved on the 21st February 2005 from: www.erm.ee/pdf/pro14/plaat.pdf.

Pukkala E, Teppo L, Hakulinen T, Rimpelä M (1983). Occupation and smoking as risk determinants of lung cancer. *Int J Epidemiol* 12: 290–6.

Richards M, Jarvis MJ, Thompson N, Wadsworth MEJ (2003). Cigarette smoking and cognitive decline in midlife: evidence from a prospective birth cohort study. *Am J Public Health* 93: 994–8.

Sotomayor H, Behn V, Cruz M, et al. (2000). Tabaquismo en académicos, no académicos y estudiantes de la Universidad de Concepción. *Rev Med Chil* 128: 977–84.

Srole L, Fischer AK (1973). The social epidemiology of smoking behavior 1953 and 1970: the midtown Manhattan study. *Soc Sci Med* 7: 341–58.

Stata Corporation (1999). Stata Statistical Software. Release 6.0. Texas: College Station.

Tiik H (1961). Suitsetamise kahjulikkusest (On the hazards of smoking; in Estonian) In: *Säätkem oma tervist*. Tallinn: Eesti Raamatukirjastus: 29–35.

Timisjärvi J, Järvensivu P, Hirvonen L (1974). Tobaksrökning och studieframgång (Smoking and school success; in Swedish). *Nordisk Medicin* 89: 252.

Webb E, Ashton H, Kelly P, Kamali F (1997). Patterns of alcohol consumption, smoking and illicit drug use in British university students: interfaculty comparisons. *Drug Alcohol Dependence* 47: 145–53.

Address for communication:

Dr. Simo Näyhä
Department of Public Health Science and
General Practice
P. O. Box 5000
90014 University of Oulu
Finland
e-mail: simo.nayha@oulu.fi
Tel.: +358-8-5375 671
Fax: +358-8-5375 661

Appendix

Table A1 Percentages of daily smokers among the University of Tartu staff and students by age, 1992-3.

	Staff						Students			
	Age (years)						Age (years)			
	15-24	25-34	35-44	45-54	55-64	15-64	-19	20-24	25+	All
<i>Men</i>										
Faculties/departments										
Philosophy (including humanities)	0.0	16.7	31.8	47.4	6.7	26.7	17.4	27.0	16.7	22.7
Biology & geography	0.0	31.3	26.7	57.1	0.0	31.0	9.5	20.0	20.0	16.2
Physics & chemistry	33.3	12.5	15.0	20.6	12.5	16.2	14.3	22.9	0.0	19.2
Mathematics & computing science	33.3	0.0	15.4	6.7	12.5	11.9	14.0	12.5	15.4	13.5
Medicine (including pharmacy)	0.0	29.3	29.2	13.8	20.0	22.8	7.0	30.1	43.3	27.2
Exercise and sports science	-	20.0	0.0	0.0	0.0	4.0	0.0	7.1	-	4.9
Economics & business administration	-	40.0	20.0	30.0	0.0	23.1	3.5	26.7	20.0	15.9
Law	-	0.0	25.0	100.0	0.0	12.0	100.0	26.3	33.3	30.4
Administration	20.0	16.7	55.6	37.5	0.0	26.1				
Theology							38.5	85.7	50.0	54.2
Total	21.1	20.4	25.4	24.8	10.2	20.4	11.1	23.8	29.5	20.1
<i>Women</i>										
Faculties/departments										
Philosophy (including humanities)	0.0	9.3	13.6	17.1	0.0	11.4	3.5	5.3	16.7	4.5
Biology & geography	0.0	28.6	18.2	0.0	0.0	14.3	0.0	2.2	0.0	1.4
Physics & chemistry	0.0	9.1	9.1	3.5	0.0	5.7	0.0	0.0	0.0	0.0
Mathematics & computing science	0.0	11.1	11.1	5.3	0.0	6.1	0.0	2.1	0.0	1.1
Medicine (including pharmacy)	0.0	14.3	8.3	10.0	2.9	9.1	1.8	6.4	15.7	6.0
Exercise & sports science	0.0	0.0	0.0	10.0	0.0	3.6	0.0	3.7	0.0	2.6
Economics & business administration	20.0	0.0	10.0	0.0	100.0	11.5	4.5	6.4	28.6	7.4
Law	16.7	33.3	25.0	50.0	0.0	20.8	-	7.7	0.0	7.1
Administration	23.1	22.0	12.9	10.2	10.8	15.0				
Theology							33.0	0.0	20.0	20.0
Total	9.4	15.0	11.8	10.0	5.7	11.2	2.7	5.3	17.7	5.0

Appendix

Table A2 Percentages of daily smokers among the University of Oulu staff and students by age, 1991.

	Staff						Students			
	Age (years)						Age (years)			
	15–24	25–34	35–44	45–54	55–64	15–64	–19	20–24	25+	All
<i>Men</i>										
Faculties/departments										
Humanities	–	0.0	33.3	17.7	0.0	20.4	25.0	15.3	15.0	15.3
Education	–	25.0	11.5	21.4	0.0	14.1	0.0	11.4	14.9	12.7
Science	40.0	7.1	8.2	4.2	20.0	9.2	14.5	15.1	10.3	13.1
Medicine	0.0	9.8	10.8	10.2	16.7	10.8	0.0	8.6	10.5	8.9
Technical	0.0	14.5	16.7	2.6	0.0	11.7	14.6	12.9	15.2	13.8
Administration	–	75.0	40.0	20.0	33.3	41.2				
Total	16.7	12.8	14.3	8.8	12.2	12.3	14.0	13.0	13.7	13.3
<i>Women</i>										
Faculties/departments										
Humanities	0.0	13.3	6.7	16.7	0.0	9.8	11.5	11.0	10.6	10.8
Education	0.0	6.3	0.0	11.5	0.0	5.1	4.0	7.5	9.3	7.9
Science	0.0	6.5	19.2	3.1	0.0	9.7	7.1	9.6	6.0	8.0
Medicine	16.7	6.1	6.0	5.7	22.2	6.8	4.8	4.2	8.4	5.7
Technical	25.0	9.7	18.5	0.0	16.7	13.0	5.9	5.0	6.5	5.7
Administration	0.0	14.3	21.1	0.0	0.0	10.0				
Total	9.5	7.8	10.9	6.0	7.5	8.5	6.8	7.8	8.4	8.0



To access this journal online:
<http://www.birkhauser.ch>