5 Socio-economic differences in health risk behaviour and attitudes towards health risk behaviour among Slovak adolescents

Abstract

Socio-economic differences in the frequency of smoking, alcohol consumption, drug use, physical exercise, and attitudes toward smoking were explored in a sample of Slovak adolescents (1370 boys, 1246 girls, mean age 15 years).

Identification of socio-economic status was based on three indicators: the highest educational level of parents, the highest occupational group of parents, and the type of school the adolescents attended.

Health risk behaviour was strongly related to socio-economic status based on all three socio-economic indicators, although there were some exceptions mostly related to education as indicator of socio-economic status and to alcohol consumption experience and drug use experience. The pattern of socio-economic differences was unfavourable for lower socio-economic groups of adolescents, except for differences in frequency of alcohol consumption among females when highest education of parents was used as an indicator of socio-economic status. A higher education of parents were related to higher frequency of alcohol consumption among females.

There are socio-economic differences in health risk behaviour. Lower socio-economic groups of adolescents behave riskily more frequently in comparison with higher socio-economic groups of adolescents.

Key-words:

socio-economic differences, health risk behaviour, Slovak adolescents

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INTRODUCTION

Health risk behaviour (HRB) like smoking, alcohol consumption and (lack of) physical exercise, may produce a variety of undesirable health outcomes as early as in adolescence *(Rahkonen et al. 1993, Poikolainen et al. 1995, Oja 1997, Twisk et al. 1997, Geckova et al. 2000b, Holmen et al. 2000).* These behaviours are mostly established during adolescence and extend into adulthood *(Pietilä et al. 1995, Hemmingsson et al. 1999).* Unequal distribution of HRB among socio-economic groups may contribute to the explanation of actual or further socio-economic inequalities in health *(West 1988, West et al. 1990, Mackenbach 1992, Stronks 1997, Tuinstra 1998).* People with low socio-economic status (SES) may exhibit more HRB, and as a consequence suffer from worse health in comparison with high SES people. Several authors have confirmed socio-economic differences in HRB among adolescent *(Green et al. 1991, Pietilä et al. 1995, Bergström et al. 1996, Karvonen and Rimpela 1996, Lowry et al. 1996, Piko 2000)* but several do not *(Donato et al. 1994, Glendinning et al. 1994, Donato et al. 1995, Shucksmith et al. 1997, Tuinstra et al. 1998, Challier et al. 2000).* The highest occupational group of the parents, the highest educational level of the parents, and type of school were inversely related to daily smoking among Swedish adolescents *(Bergström et al. 1996).* No significant socio-economic differences were found with regard to physical activity *(Bergström et al. 1996).* High SES (father's occupation, mother's education, mother's employment status) of a family was connected with healthy habits (concerning smoking, drinking, physical exercise) among Finnish male adolescents *(Pietilä et al. 1995).* The highest occupational group of parents, family type and type of the adolescent's school were strongly related to smoking, alcohol use and (lack of) physical exercise among Finnish adolescents *(Karvonen and Rimpela 1996).* In the case of drinking, however, the adolescents whose fathers belonged to higher SES used alcohol to a somewhat greater extent than the others did. Prevalence of smoking, episodic heavy drinking and (lack of) physical exercise were inversely related to SES based on parent's education and family income among USA adolescents *(Lowry et al. 1996).* Scottish adolescents from lower (non-manual) social class households were most likely to smoke and to drink *(Green et al. 1991).* The type of school itself appeared to have a strong effect on the occurrence of smoking, drinking and drug using among Hungarian adolescents *(Piko 2000).* The school, its setting, organizational structures, activities and atmosphere may influence HRB in adolescents. Considerable influence may also be attributed to classrooms, which are important arenas for peer group formation and friendship relations.

On the other hand, Glendinning et al. *(1994)* did not find support for socio-economic differences (father's occupational class and parent's education) in smoking among Scottish adolescents. In a similar setting, Shucksmith et al. *(1997)* did not find adolescents´ drinking behaviour related to SES based on the highest occupational group of parents or parents' education post-school education. The occupational class and education of parents were not associated with smoking and alcohol consumption among Italian adolescents either *(Donato et al. 1994, Donato et al. 1995)*. Smoking, alcohol consumption and drug use were not found to be related to the highest occupational group of parents among French adolescents *(Challier et al. 2000)*. Tuinstra et al. *(1998)* did not confirm consistent socio-economic differences in Dutch adolescents´ smoking, alcohol consumption, drug use and (lack of) physical exercise.

There are larger numbers of adolescents with risky attitudes than adolescents with risky behaviour *(Geckova et al. 2001f)*, and we can suppose that behaviour related to these attitudes will grow with age in these adolescents. Attitudes are the Number One target in preventive programmes.

In our article we try to explore whether there are any socio-economic differences in HRB among Slovak adolescents. SES indicators based both on parents (highest occupational group of parents, highest education of parents) and on adolescents (type of school), were used. We focus our attention on smoking, alcohol consumption, drug use, and lack of physical exercise. As well as these, socio-economic differences in attitudes toward smoking were also explored.

MATERIAL AND METHODS

Procedure and respondents

Data were collected in 1998. The school-based sample consisted of 2616 first year students of 31 secondary schools located in Kosice (52,4% boys, 47,6% girls, and mean age 15 years, STD: 0,62). Attending school is compulsory at this age. The sample was stratified according to gender and types of secondary schools, and the proportion of the five educational levels of the regular Slovak school system was maintained. Individual schools were selected at random. Our sample is representative of the Slovak adolescent population. The data were gained through self-reported questionnaires. Respondents completed the questionnaire at school in their classrooms, under the guidance of the field workers. The response rate was 96,3%; the non-response was due to illness and other types of absence. The average occurrence of missing values was 1,1%.

Measures of SES

In our survey of socio-economic differences in HRB, we use two types of socio-economic indicators. The first one is based on parents: the highest education of the parents and the highest occupational class of the parents. The second one is based on adolescents: the type of school they attend.

Highest education of parents

This measure is based on asking adolescents about their father's and mother's highest, successfully-completed level of education. Parents' educational level was classified as: I. university (21,8%), II. secondary high school (50,4%), III. vocational or primary school only (25,4%). We combined the categories of vocational education (24,1%) and primary school (1,2%) to minimise the problem of small denominators. The characteristic of the parent with the higher level of education was used for classification.

Highest occupational class of parents

This measure is based on asking adolescents about their father's and mother's current occupation, or their last occupation if they were currently unemployed. This information was then transformed into 9 categories of ISCO *(1992, 1993)*. Finally, some categories were combined to minimise the problem of small denominators. According to the classification used, 27,7 % adolescents came from families belonging to the occupational classes I. Legislators, senior officials and managers and II. Professionals; 50,1% adolescents came from families belonging to the occupational classes III. Technicians and associate professionals, and IV. Clerks and V. Service workers and shop and market sales workers; and 22,3% adolescents came from families belonging to the occupational classes VI. Skilled agricultural and fishery workers, and VII Craft and related trades workers, and VIII. Plant and machine operators and assemblers and IX. Elementary occupations. The characteristic of the parent with the higher occupational class was used for classification.

Type of school

Adolescents were divided according to the type of school they attended into three groups: grammar school students (21,8%), secondary technical school students (42,4%), and apprentice school students (35,7%).

Measures of health risk behaviour

Data were obtained through a questionnaire created on the basis of a Dutch study *(Tuinstra 1998)*. Four types of HRB were explored: smoking, alcohol

consumption, drug use and (lack of) physical exercise. In order to measure smoking experience and smoking frequency, the adolescents were asked if they had ever smoked cigarettes (1-no, never, 2-yes, I tried, 3-sometimes I smoke, but not daily, 4-I have been smoking daily for some time now); and how many cigarettes they smoke daily (1-I do not smoke, 2-not more than one cigarette per day, 3-two to five cigarettes per day, 4-six to ten cigarettes per day, 5-eleven to fifteen cigarettes per day, 6-sixteen and more). Experience with alcohol consumption and frequency of alcohol consumption were explored by asking adolescents if they drank alcohol sometimes (1-no, never, 2-yes, but only low-alcohol drinks, 3-yes, sometimes I drink a glass of spirits) and how many times they had drunk alcohol during the previous month (1- not once, 2- once or twice, 3-three to five times, 4-six to ten times, 5-ten times and more). Adolescents were also asked if they had ever used marijuana or hash (1-no, never, 2-I have used it once, 3-I use it sometimes, no more than once a month, 4-I use it regularly, more than once a month) and how often they did sports (1- daily, 2-at least 2-3 times per week, 3-less than 2-3 times per week, 4-I do not do any sport). Only sporting activities longer than 20 minutes were considered and physical education in school was disregarded.

Measures of attitudes toward health risk behaviour

Adolescents were asked to select one of seven statements describing their future smoking behaviour intentions. Choices were divided into three groups: 1-low risk (I think I will never start smoking. I smoked in the past, but I have stopped.), 2-medium risk (I´m just trying to stop smoking. I think I will stop smoking. I have no idea.) and 3-high risk (I think I will start smoking sometimes, maybe later. I think I will smoke all my life.).

Analysis

The analyses were done using the statistical software package SPSS, version 7.5.2. Gender differences in HRB and attitudes towards smoking were explored using the Mann-Whitney test. Socio-economic differences in HRB and attitudes towards smoking were explored separately in boys and girls using the Kruskal-Wallis test. Analyses were computed for each indicator of SES (highest occupational group of parents, highest educational level of parents, type of school), HRB (smoking experience, smoking frequency, alcohol experience, alcohol consumption frequency, drug experience, sport frequency) and attitudes toward HRB separately.

Results

Only 26,7% of boys and 42,0% of girls had had no experience with smoking, while the remaining adolescents had already tried smoking or smoked regularly.

One third of boys and one fifth of girls smoked daily. One third of adolescents reported they did not drink alcohol, but nearly one half reported they used to drink beer or wine and the rest of them reported they also used to drink a glass of spirits occasionally. During the previous month, 52,3% of the boys and 59,6% of the girls had not drunk alcohol; 33,5% of the boys and 31,6% of the girls had drunk alcohol once or two times; and 14,2% of the boys and 8,7% of the girls had drunk alcohol 3 times and more. Experiences with marijuana or hash were reported by 8,7% of the boys and 5,6% of the girls. 10,2% of the boys and 26,3% of the girls reported they did not do sport and 21,0% of the boys and 35,5% of the girls reported they did sport less than 2 or 3 times per week. Sufficient frequency of physical exercise was reported by 68,8% of the boys and 38,8% of the girls. 57,9% of the boys and 64,4 % of the girls reported a low-risk attitude towards smoking, while 10,1% of the boys and 6,7% of the girls reported a high-risk attitude towards smoking. Medium-risk attitudes towards smoking in the future were reported by one third of the adolescents. Our findings about smoking, alcohol consumption and drug use are more unfavourable among boys in comparison with girls. In contrast, findings about (lack of) exercise were more unfavourable among girls compared with boys. Mean scores of HRB and attitudes towards HRB are presented in Table 16.

Table 16 Gender differences in HRB and attitudes towards HRB

	mean score		sig.
	male	female	
smoking experience (1-4)	2,16	1,85	***0,000
frequency of smoking (1-6)	1,72	1,41	***0,000
alcohol consumption experience (1-3)	1,85	1,76	**0,002
frequency of alcohol consumption (1-5)	1,68	1,52	***0,000
drug-using experience (1-4)	1,12	1,07	**0,002
frequency of sporting (1-4)	2,11	2,77	***0,000
attitudes towards smoking (1-3)	1,52	1,42	***0,000

Significant socio-economic differences were found in smoking experience, frequency of smoking, and attitudes toward smoking, except for female when the highest education level of parents was used as an indicator of SES. The differences were also partially found in alcohol consumption experience (parent's occupation only in female), and frequency of alcohol consumption (parent's occupation, in female also parent's education, type of school). Prevalence of drug-using experience was related to type of school and in females also to the highest occupational group

Table 17 Socio-economic differences in health risk behaviour and attitudes toward health risk behaviour. Mean scores and significance of socio-economic differences in health risk behaviour

		smoking experience (1-4)		frequency of smoking (1-6)		alcohol consump. experience (1-3)		frequency of alcohol consump. (1-5)		drug-using experience (1-4)		frequency of sporting (1-4)		attitudes towards smoking (1-3)	
		m	f	m	f	m	f	m	f	m	f	m	f	m	f
highest educ. of parents	university	1,92	1,76	1,48	1,30	1,80	1,77	1,69	1,62	1,15	1,07	2,03	2,68	1,43	1,46
	secondary	2,24	1,86	1,76	1,42	1,86	1,77	1,69	1,50	1,11	1,07	2,14	2,77	1,53	1,39
	vocational	2,29	1,88	1,89	1,48	1,87	1,72	1,66	1,46	1,10	1,05	2,14	2,88	1,61	1,44
	sig.	0,000	0,374	0,000	0,130	0,321	0,204	0,610	0,043	0,797	0,802	0,204	0,024	0,003	0,243
highest occup. group of parents	high SES	2,04	1,68	1,61	1,27	1,78	1,61	1,60	1,38	1,08	1,04	1,91	2,62	1,37	1,28
	medium SES	2,10	1,80	1,63	1,36	1,83	1,77	1,65	1,53	1,10	1,06	2,11	2,77	1,51	1,41
	low SES	2,35	2,06	1,92	1,61	1,90	1,87	1,80	1,62	1,16	1,08	2,23	2,91	1,64	1,57
	sig.	0,000	0,000	0,003	0,000	0,117	0,000	0,013	0,000	0,054	0,149	0,000	0,000	0,000	0,000
type of school	grammar	1,72	1,64	1,29	1,19	1,81	1,76	1,69	1,58	1,12	1,04	2,05	2,70	1,36	1,37
	technical	2,07	1,81	1,52	1,34	1,81	1,72	1,65	1,48	1,07	1,06	2,13	2,74	1,47	1,40
	apprentice	2,46	2,08	2,11	1,73	1,89	1,82	1,71	1,52	1,16	1,10	2,13	2,90	1,64	1,51
	sig.	0,000	0,000	0,000	0,000	0,149	0,101	0,741	0,041	0,000	0,014	0,692	0,009	0,000	0,001

m male f female

of parents. Socio-economic differences in frequency of sporting were confirmed in both, males and females, when parent's occupation was used as an SES indicator, and in females when parent's education or type of school was used. Our findings are presented in Table 17.

Except for the frequency of alcohol consumption among females, when parent's education or type of school were used as SES indicator, the pattern of socio-economic differences in HRB was unfavourable for lower SES groups. Lower SES adolescents behave more riskily in comparison with higher SES adolescents. The pattern of socio-economic differences in alcohol consumption frequency among females is contrary: higher SES adolescents behave more riskily in comparison with lower SES adolescents. It should be pointed out however that this difference is of borderline statistical significance.

Discussion

In this paper we explore the relationship between SES and smoking, alcohol consumption, drug use, (lack of) physical exercise and attitudes toward smoking among Slovak adolescents. With some exceptions, socio-economic differences unfavourable for lower SES groups were confirmed in explored HRB and attitudes towards HRB. Exceptions were mostly related to education as indicator of socio-economic status and to alcohol consumption experience and drug use experience. Contrary pattern of socio-economic differences in frequency of alcohol consumption were confirmed among females, when parent's education or type of school were used as SES indicator.

We have encountered similar findings also in West European studies. Socio-economic differences in smoking *(Green et al. 1991, Pietilä et al. 1995, Bergström et al. 1996, Karvonen and Rimpela 1996, Lowry et al. 1996, Piko 2000)*, alcohol consumption *(Green et al. 1991, Pietilä et al. 1995, Karvonen and Rimpela 1996, Lowry et al. 1996, Piko 2000)*, drug use *(Piko 2000)*, lack of physical exercise *(Pietilä et al. 1995, Karvonen and Rimpela 1996, Lowry et al. 1996, Tuinstra et al. 1998)* are unfavourable for the lower SES group of adolescents. On the other hand some findings do not support the existence of socio-economic differences in smoking *(Glendinning et al. 1994, Tuinstra et al. 1998, Challier et al. 2000)*, alcohol consumption *(Donato et al. 1994, Donato et al. 1995, Shucksmith et al. 1997, Tuinstra et al. 1998)*, drug use *(Tuinstra et al. 1998)* and lack of physical exercise *(Bergström et al. 1996)*. Exceptions from class patterning in alcohol consumption were reported also by West *(1988)*, Mackenbach *(1992)* and Tuinstra et al. *(1998)*.

There are several possible reasons for discrepancies in findings related to socio-economic differences in HRB among the mentioned studies. The reasons could be related to:

a. the socio-cultural context: Cross-cultural studies of HRB among adolescents report great differences in the patterns of HRB and gender differences in HRB, but also in socio-economic differences in HRB between particular countries *(King et al. 1996, Hibbel et al. 1997, Currie et al. 2000).* The pattern of socio-economic differences will be more clear in those kinds of HRB, which are more prevalent in the explored population. Some of the countries are more "risky" compared with others regarding socio-economic differences.
b. differences in measurements of SES used: it is very difficult to find comparable measurements of SES. In general it is very difficult to measure SES, particularly in Central Europe, because the socio-economic stratification is not clear and is rapidly changing.
c. differences in the measurement of HRB used.
d. differences in the samples (e.g. age, socio-demographic characteristic of sample)

As we have pointed out in previous papers, there are socio-economic differences in health unfavourable for lower SES groups among Slovak adolescents *(Geckova et al. 2000a, Geckova et al. 2001d).* Findings are similar when we use more than one indicator of SES and more than one health indicator. HRB is explored as a factor which can contribute to the presence of socio-economic health differences in adolescence. Smoking, alcohol consumption, drug use, lack of physical activity a affect the health of Slovak adolescents in an unfavourable way *(Geckova et al. 2000b).* This means that HRB already affects health at this age. The onset of smoking and alcohol consumption is very early. According to Hibbell et al. *(1997)* 11% boys and 4% girls in Slovakia start smoking before they are 13 years old. Similarly, 58% boys and 45% girls drink alcohol and 16% boys and 7% girls experience drunkenness before reaching that age. When they are 15 years old it seems to be that there are also already-established socio-economic differences in HRB. To be a member of a particular SES group means not only to have better or restricted access to information, amenities, sources and power, but also to be a participant in a social environment with relevant norms, rules, pressures, life style and attitudes. A risky behaviour of low SES adolescents may be tolerated and encouraged by their social environment. De Vries *(1995)* investigated socio-economic differences in the determinants of adolescents´ smoking behaviour, and

found that low-SES adolescents have a more positive (undesirable) attitude towards smoking. They experience greater pressure to smoke and perceive stronger social norms towards smoking from parents, relatives, friends and doctors. Generally, they live in general in a social environment in which more smoking goes on, and show lower self-efficacy in comparison to high-SES adolescents. Norman et al. *(1999)* found low-SES parents using smoking bans at home less frequently in comparison with high-SES parents. Ultimately, it seems to be that HRB is more frequent in low SES groups and contributes to bad health in low SES groups.