

## **9 CONCLUSION, GENERAL DISCUSSION AND IMPLICATIONS**

Health is undoubtedly one of the most important “treasures”, not only of the individual, but also of society. Particularly precious is the somatic, psychological and social health of youth, because it is the basic element of society’s future. Especially in terms of socio-economic health differences, it is extremely important to see the consequences not only in the somatic health, but also in the psychological, social and spiritual health of the young population. The concept of health, described simply in these terms, allows the population to attain an optimal quality of life, to be happy and to be productive members of society.

The literature about socio-economic health differences in West Europe is rich in findings, but less is known about inequalities in health among adolescents coming from Central and Eastern Europe. This study is more or less a “pioneer” study. The importance of the data generated by such a study is enormous for at least two reasons. Firstly, socio-economic health differences among Central European adolescents are an “unexplored area”. Secondly, the transitional crisis in Central European countries is deepening inequalities with health consequences for the whole population. Moreover, we not only describe the inequalities, but also contribute to the explanation of the observed socio-economic health differences through health risk behaviour and social support.

This project has produced a number of interesting findings. We would like to summarise and discuss the most important from them.

### **HEALTH OF ADOLESCENTS**

Our findings indicate that adolescence is not such a healthy period in human life. The major health problems seem to be psychological health, tiredness, headache, backache, skin diseases and respiratory diseases. Findings are more unfavourable for girls in comparison with boys. The Slovak Republic does not differ in this respect from Western European countries. The mentioned health problems indicate undesirable health processes which may lead to serious health problems (chronic respiratory diseases, chronic diseases of musculoskeletal system etc.), but they are, in this period of life, still preventable, reversible or at least they could be influenced in a more favourable way.

## **SOCIO-ECONOMIC HEALTH DIFFERENCES AMONG ADOLESCENTS**

Socio-economic health differences are not absent in Slovak adolescents. Based on most of the prevailing European literature, an absence of socio-economic health differences might be presumed; but the findings of Kunst (1997) show the lowest group is more affected in Central European countries. So, the presence of socio-economic health differences among adolescents may also be anticipated. Several socio-economic health differences unfavourable for lower SES groups were confirmed among Slovak adolescents. Socio-economic health differences among adolescents unfavourable for lower SES groups were confirmed also by Halldorson et al. (2000) in all Nordic countries, and Call and Nonemaker (2000) in the USA.

### **WHY ARE SOCIO-ECONOMIC HEALTH DIFFERENCES NOT ABSENT IN SLOVAKIA?**

There are several possible explanations for differences in findings related to socio-economic differences between Slovak and West Europe, particularly Dutch and Scottish studies.

Firstly, there is a ten years gap between Scottish and Slovak data collection and three years gap between Dutch and Slovak data collection as can be seen in table 26. This time gap can be the source of differences, if the hypothesis of widening socio-economic health differences in Europe is correct.

Secondly, there are differences in way how SES was measured between studies. It is a question how to measure SES in countries differing so much in socio-economic stratification characteristics and if used SES indicators are comparable. Main health measures (psychological health, self-reported health, chronic diseases) used in Slovak, Dutch and Scottish studies are comparable.

Thirdly, we should consider cross-culture differences. Findings of Halldorsson et al. (2000) from Nordic countries and Call and Nonemaker (2000) from the USA may be a confirmation of widening socio-economic health differences, but also can be the result of cross-culture differences among societies.

Rahkonen and Lahelma (1992) suppose that a “developed welfare state may have had an equalising effect on the health of young people” (free school meals, check-ups by school nurses and physicians). And also West et al. (1990), Tuinstra (1998) suppose that absence of socio-economic health differences among Western European adolescents is caused by the effect of some protective, equalising factors: this is known as the buffer hypothesis. We can hypothesise that such factors either have no influence in Slovakia, or that they are not strong enough to diminish socio-economic health differences.

**Table 26**

Comparison of Slovak, Dutch and Scottish study

	Slovak	Dutch	Scottish
references	Geckova et al. (2001d)	Tuinstra (1998)	West (1986), MacIntyre (1987), West (1988), MacIntyre et al. (1989), West et al. (1990), MacIntyre and West (1991), West et al (1994)
study	"Inequalities in health among Slovak Adolescents", which is a part of an international comparative longitudinal study "Comparing Social Patterns in Health between Western and Central Europe in Adolescence"	"Health in Adolescence" (Tuinstra 1998), which is a part of the "Longitudinal Study into Social Inequality and Health from Adolescence to Early Adulthood"	"The Study of Youth and Health" (West 1986) which is a part of "The West of Scotland Twenty-07 Study" (MacIntyre 1987, MacIntyre et al. 1989)
data collected	Sep, Oct 1998	Nov 1995/Jan 1995 + Spring 1995	1987/1988
sample description	Students of 31 secondary schools located in Košice (eastern part of Slovakia). The sample was stratified according to gender and types of secondary schools; the proportion of the five educational levels of the regular Slovak school system was maintained.	4 northern provinces of the Netherlands. 18 secondary schools encompassing four educational levels of the regular Dutch secondary school system.	Central Clydeside Conurbation, Glasgow city and 10 surrounding local government districts
number of respondents	2616	1984	1009
male/female	52,4%/47,6%	51,6%/48,4%	47,8%/ 52,2%
mean age	14,9 years, STD: 0,62	16,2 years, STD 0,79	15 years

	Slovak	Dutch	Scottish
SES indicators	<p><b>Highest education of parents:</b> classified into 4 levels of the regular Slovak school system, divided into 3 levels</p> <p><b>Highest occupational class of parents:</b> transformed into 9 categories of ISCO, divided into 3 classes</p> <p><b>Type of school:</b> divided into 3 levels</p> <p><b>Education of mother:</b> classified into 4 levels of the regular Slovak school system, divided into 3 levels</p> <p><b>Education of father:</b> classified into 4 levels of the regular Slovak school system, divided into 3 levels</p> <p><b>Occupational class of mother</b> transformed into 9 categories of ISCO, divided into 3 classes</p> <p><b>Occupational class of father</b> transformed into 9 categories of ISCO, divided into 3 classes</p>	<p><b>Highest education of mother and father</b> separately: coded according International classification of Education (UNESCO 1976) and divided into 6 levels</p> <p><b>Occupational class of mother and father</b> separately: coded according ISCO, transformed into prestige scores and divided into 6 groups</p>	<p><b>Highest educational level of father</b></p> <p><b>Head of the household occup. class</b></p> <p><b>Highest occup. class</b></p> <p><b>Mother's current occup. class</b></p> <p>Father's current occup. class</p> <p><b>Mother's old occup. class</b></p> <p><b>Father's old occup. class</b></p> <p>The British Register General's classification of occupation was used.</p> <p><b>Housing tenure</b></p> <p><b>Household income</b></p> <p><b>Car ownership</b></p> <p><b>Neighbourhood type</b></p>
Distribution based on SES indicators	<p>I. university: 21,8%</p> <p>II. secondary high: 50,4%</p> <p>III. vocational or primary only: 25,4%</p> <p>High SES (I.+II.): 27,7%</p> <p>Medium SES (III.-V.): 50,1%</p> <p>Low SES (VI.-IX.): 23,3%</p>	<p>SES indicator: mean/STD/range</p> <p>Father's education: 3,59/ 1,45/ 1-6</p> <p>Mother's education: 3,22/ 1,19/ 1-6</p> <p>Father's occup.class: 3,44/ 1,73/ 1-6</p> <p>Mother's occup.class: 3,61/ 1,56/ 1-6</p>	

	Slovak	Dutch	Scottish
Health indicators	<p><b>Psychological health:</b> GHQ-12 (a Likert score, range 0-36/ a binary score, range 0-12, "cases" 2/3)</p> <p><b>Vitality and mental health:</b> scales of RAND-36 (0-100)</p> <p><b>Self-reported health</b> (excellent, very good/good, fairly good, bad): item of RAND-36</p> <p><b>Self-perceived vulnerability to illness:</b> item of RAND-36</p> <p><b>Experienced health compl.:</b> VOEG, range 0-13</p> <p><b>Chronic diseases:</b> list of 11 most frequent chronic diseases, no chronic disease/ at least one chronic disease suffered</p> <p><b>Use of medicine:</b> prescribed and non prescribed drugs during last two weeks</p>	<p><b>Psychological health:</b> GHQ-12 (a Likert score, range 0-36/ a binary score, range 0-12, "cases" 2/3)</p> <p><b>Vitality and mental health:</b> scales of RAND-36 (0-100)</p> <p><b>Self-reported health</b> (excellent, very good/good, fairly good, bad): item of RAND-36</p> <p><b>Experienced health compl.:</b> VOEG, range 0-13</p> <p><b>Chronic diseases:</b> list of 11 most frequent chronic diseases, no chronic disease/ at least one chronic disease suffered</p>	<p><b>Psychological health:</b> GHQ-12 (a Likert score, range 0-36/a binary score, range 0-12, "cases" 2/3)</p> <p><b>Self-reported health</b> (good/ fairly good, bad)</p> <p><b>Symptoms/ illnesses:</b> list of 15 conditions, no/at least one in previous 12 months</p> <p><b>Self-reported chronic illness:</b> any longstanding illness, disability or infirmity</p> <p><b>Accidents</b></p> <p><b>Physical measures</b></p> <p><b>Respiratory functions</b></p> <p><b>Blood pressure</b></p> <p><b>Mortality</b></p> <p><b>Morbidity</b></p>
Statistical analyses	<p>Logistic regression for dichotomised health measures, analysis of variance for continuous health measures. The analysis were computed separately for each SES indicator. Two model were fitted: one with and one without interactions between gender and SES.</p>	<p>Logistic regression for dichotomised health measures, analysis of variance for continuous health measures. The analysis were computed separately for each SES indicator. Two model were fitted: one with and one without interactions between gender and SES.</p>	

Many of the changes which have happened in Central Europe during the last ten years are related to such a possible “buffer” mechanism. Previous “buffer mechanisms” do not work anymore and new ones are just establishing themselves, which means they do not work sufficiently yet. Youth is the most vulnerable part of population, so this population group might be expected to display undesirable health consequences of the transitional crisis more than the adult population (*Tichy et al. 1996*). Decreasing living standards may cause undesirable changes in life style including poor nutrition or risky behaviour. The youth can suffer not only from the lack of amenities, but also from experiences related to the gap between class groups. The consequence of such experiences can be stress, worse mental health or somatic symptoms.

#### **WHICH ASPECTS OF HEALTH ARE INFLUENCED BY SES?**

SES influences more general vulnerability or general resilience than specific illnesses (*Hertzman 1999, MacIntyre 1986*). Besides this, some of the health indicators are related more strongly and some of them less strongly to SES. The best known is height, as the only one indicator which remains unequally distributed also in studies indicating absence of health inequalities in adolescence (*West 1997*).

In a study performed by Halldorsson et al. (*1999*), well-being was more influenced by SES than somatic health (chronic illness, physical health complaints). *Rahkonen (1988)* found socio-economic health differences in chronic illness to be small and in self-reported health clearer in Finnish adolescents. We have confirmed socio-economic health differences in self-reported health, experienced health complaints, only partially in psychological health, but not in the occurrence of chronic illness. The absence of socio-economic health differences in the occurrence of limiting long-standing illness is also confirmed by *Rahkonen and Lahelma (1992)* among 15-24 years old Finns.

The effects caused by undesirable living conditions, and life style on health, in terms of chronic illness, require a certain period. Because of this delay, we expected in adolescence that well-being, self-reported health and experienced health complaints will be the most affected by socio-economic disadvantage.

#### **ARE THE SOCIO-ECONOMIC HEALTH DIFFERENCES THE SAME AMONG MALE AND FEMALE?**

One very important issue seems to be that of gender differences in health and socio-economic health differences. *West et al. (1999)*, and also others, emphasise that gender is a much more powerful discriminator than social class for health in its several dimensions. Socio-economic health differences in male and female

should be studied separately (*Rahkonen et al. 2000, Gijbers van Wijk et al. 1995*). The pattern of gender differences in socio-economic health differences is not clear, as the evidence is inconsistent across various health measures and life stages (*Mathews et al. 1999*). Koskinen and Martelin (*1994*), Stronks et al. (*1995*), MacIntyre and Hunt (*1997*), Valkonen (*2000*) reported considerably smaller health inequalities among women than among men. On the other side, Balabanova (*2000*) reported greater health inequalities among women as a consequence of their increasingly vulnerable position in Bulgaria. Our findings did not support the presence of gender differences present in socio-economic health differences among Slovak adolescents.

### **HEALTH RISK BEHAVIOUR**

The most serious problem are diseases related to life style. Mortality and morbidity in this century is strongly related to nutrition, smoking, alcohol consumption, lack of physical exercise and smoking. Life style is mostly established during adolescence and then continues into adulthood (*Pietila et al. 1995, Hemmingsson et al. 1999*). During adolescence life style can be influenced most easily, and the best influence lies in preventing undesirable behaviour and its consequences. Our findings about the prevalence of risky behaviour are alarming, when the low age (15 years) of adolescents in our sample is taken into account. Only one third of the Slovak adolescent population does not display risky behaviour, i.e. they do not smoke, drink, have no experience with drugs and are engaged in sports (*Geckova et al. 2001f*). Apart from lack of physical exercise Slovak boys more frequently behave riskily in comparison with girls (*Geckova et al. 2001f*). It is important to mention also the coincidence of risky behaviour, which can lead to a cumulation of undesirable health consequences. If health has a high value for some people, it might be expected that they will exhibit not only one type of healthy behaviour, but that all dimensions of their behaviour will tend to express this health promoting attitude. And vice-versa, a low value of health will be expressed not only in one attitude and related behaviour, but in a whole package of attitudes related to health. We found smoking, alcohol consumption and use of drugs to be correlated (*Geckova et al. 2001f*). Similar findings are confirmed by Tuinstra (*1998*).

### **DOES RISKY BEHAVIOUR INFLUENCE HEALTH IN ADOLESCENCE?**

The undesirable influence of risky behaviour on health in adults is well known, but health risk behaviour influences health already in adolescence (*Rahkonen et al. 1993, Poikolainen et al. 1995, Oja 1997, Twisk et al. 1997, Boreham et al. 1999, Holmen*

*et al. 2000*). Smoking, alcohol consumption, drug use and lack of physical exercise show a detrimental influence on health (*Geckova et al. 2000b*). The only one exception is physical exercise and prevalence of injuries: these occur more often in sporting adolescents than in non-sporting ones. Moreover, the undesirable influence of particular types of risky behaviour on health cumulates (*Geckova et al. 2000b*).

#### **DETERMINANTS OF HEALTH RISK BEHAVIOUR**

It is generally accepted that risky behaviour is multi-determined. Determinants of adolescents' smoking behaviour, reviewed in detail elsewhere (*Geckova et al. 2000g, Geckova et al. 2001b*), include individual, social and societal factors. Individual factors include knowledge, intentions, attitudes, health-related behaviour, personality and school-related variables. Social factors include smoking behaviour of parents, siblings, peers and significant adults, but also family characteristics, social support and socio-economic status. Societal factors include restriction on smoking, tobacco advertising, and the smoking behaviour of adolescents' role models. Our data allow us to explore influence of parents, peers and SES on adolescent's health risk behaviour.

#### **ARE THERE ANY SOCIO-ECONOMIC DIFFERENCES IN THE PREVALENCE OF RISKY BEHAVIOUR AMONG ADOLESCENTS?**

Health risk behaviour as a part of life style, which is mostly similar for members of one society, may play an important role in the explanation of actual or future socio-economic health differences (*West et al. 1990, Mackenbach 1992, Stronks 1997, West 1997, Tuinstra 1998*). People with low SES may behave less healthily and as a consequence they will be less healthy in comparison with high SES people. Juel *et al. (2000)*, using prospective data from a 12 years follow-up Danish National Cohort Study (DANCOS) found that nearly half of mortality differences between persons without education and persons with a higher education could be attributed to differences in health behaviour. Smoking, large alcohol consumption, lack of physical exercise and body mass index are related to mortality. Social inequality in mortality was attributed to health behaviour, but was not fully explained.

As we have described in more detail (chapter 5), there is an inconsistency in findings related to socio-economic differences in the prevalence of health risk behaviour. Several authors have confirmed an unequal distribution of risky behaviour among SES groups of adolescents (*Green et al. 1991, Bergstrom et al. 1996, Karvonen and Rimpela 1996, Lowry et al. 1996, Piko et al. 2000*), but several authors have 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*). We have to take into account that patterns of health risk behaviour are different in different countries and that they change over time. Not so far back in history we could see an adverse pattern of socio-economic differences in health risk behaviour: it was the high SES group which used to smoke more. This pattern has changed and is still changing.

Particularly among adolescents it is important to look not only at the prevalence of risky behaviour, but also at the prevalence of attitudes towards risky behaviour. Attitudes may be a prelude of behaviour in future. We expect a huge increase in the prevalence of risky behaviour, and that is why it is extremely important to be able to indicate the group of adolescents prone to risky behaviour.

We found a higher occurrence of health risk behaviour and attitudes towards health risk behaviour related to lower SES among Slovak adolescents. The only exceptions occurred in alcohol consumption when SES is based on the highest educational level of parents or type of school. Our findings indicated an adverse pattern of socio-economic differences among females in comparison with males, particularly when SES is based on education. Such inconsistency was reported also by West (1988), Mackenbach (1992), Stronks (1997). Highly educated females may experience stress from their “double duties role”. Particularly in Central European countries, their role includes the duties of “professional” but also the duties of “housewife”. This can lead to higher self-confidence, which allows these females to do what they want. Our sample of high SES girls consists of daughters of these highly-educated mothers, who are their “role model”.

#### **THE INFLUENCE OF PARENTS AND PEERS ON HEALTH RISK BEHAVIOUR**

There is strong evidence of parental influence on adolescents’ health risk behaviour (*Geckova et al. 2000c*). If one or both parents smoke daily, the probability of having experience with smoking, the frequency of smoking and undesirable attitudes to smoking are higher as compared with families where neither parent smokes. Similarly, when one or both parents drink alcoholic beverages or are drunk at least once a month, the probability of having experience with alcohol consumption and the frequency of alcohol consumption is higher as compared with families where neither of the parents drinks. If one or both parents are engaged in sports every week, the frequency of physical exercise of adolescents is higher.

The influence of peers on adolescents’ risky behaviour was also confirmed (*Geckova et al. 2001a*). The more friends behave riskily (smoke daily, drink alcohol

weekly, get drunk at least once a month, use drugs, do not engage in sport weekly), the more likely it is that related risky behaviour occurs among adolescents. Males report significantly more friends who drink alcohol and engage in sports at least once a week in comparison with females.

An issue attracting a lot of research attention (*Resnick et al. 1997, Urberg et al. 1997, Sieving et al. 2000*) is the difference between peer influence (peer socialisation, peer pressure) and peer selection (social selection). Peer influence is meant in cases when the preference of smoking peers predicts an adolescent's smoking behaviour. Peer selection is an adverse process, when an adolescent with certain behaviour looks for friends in groups with similar behaviour. Resnick et al. (1997) show that both peer influence and peer selection contribute to adolescents' smoking behaviour. Sieving et al. (2000) confirmed peer influence but not peer selection. Urberg et al. (1997) reported that peer influence is moderate when peer selection is under control and when the direct measure of peers' smoking is provided.

Some of the researchers try to divide the influence of close friends or best friend, partner (*Donato et al. 1994, Bergström et al. 1996, Elder et al. 2000*) and peer groups (*Urberg et al. 1997*). Urberg et al. (1997) confirmed the influence of close friends on initiation of smoking and peer group on transition to regular smoking. The character of our study did not allow consideration of both differences between peer influence and peer selection and differences between influence of close friend and peer group

Flay et al. (1998), Mayhew et al. (2000) recommend distinguishing stages of adolescents' smoking behaviour in research into adolescents' smoking behaviour determinants, because the contribution of individual determinants or factors can be different in different stages. Brook et al. (1997) also stress developmental differences in adolescents' smoking behaviour determination. The measure of adolescents' smoking behaviour in our survey represents the intensity of smoking per day and did not permit identification of the stage of adolescent smoking behaviour.

The investigated model includes only parents' smoking behaviour, but adolescents' smoking behaviour is influenced by a variety of family-related variables. Any smoking family member can increase the probability of adolescent smoking behaviour due to role-model effect, but also due to the higher availability of cigarettes at home. Significant influence of siblings was confirmed by Donato et al. (1994), Bergström et al. (1996), Abrams et al. (1999), Azevedo et al. (1999), Griffin et al. (1999), Unger and Chen (1999), West (1999), Horn et al. (2000).

Smoking socialisation or in other words restrictions on smoking, clear rules about smoking, parental approval, parental attitudes towards smoking of their

offspring can be stronger predictors of adolescent smoking behaviour than parents' smoking behaviour (*Donato et al. 1994, Abdelrahman et al. 1998, Clark et al. 1999, Griffin et al. 1999, Norman et al. 1999, Wakefield et al. 2000*).

Adolescent smoking behaviour can be influenced not only through parental smoking behaviour, but also through the characteristic of parent-child relationship and social support (*Wills and Vaughan 1989, DuBois et al. 1992, Rossow and Rise 1994, Wills and Cleary 1996, Brook et al. 1997, Ljfrak et al. 1997, Resnick et al. 1997, Urberg et al. 1997, Simons-Morton et al. 1999, Horn et al. 2000, Elder et al. 2000, Piko 2000*). According to Brook et al. (1997, p.182) "Difficulty in the parent-child relationship (disruptive family systems) was related to tobacco-prone personality characteristics. Adolescents with tobacco-prone personality attributes tend to select friends who smoked, and this behaviour, in turn, was related to their own smoking behaviour during adolescence. Adolescent smoking behaviour was related to young adult smoking behaviour."

### **HOW DOES SES INFLUENCE HEALTH RISK BEHAVIOUR, PARTICULARLY ADOLESCENTS' SMOKING BEHAVIOUR?**

There is some evidence that a higher occurrence of smoking behaviour in lower SES groups contributes to socio-economic health differences among Slovak adolescents. It is hardly possible to understand the mechanism of health inequalities through smoking without taking into account the influence of parents and peers.

There is a lot of literature about peer influence on smoking, parental influence on smoking and also socio-economic differences in smoking. The strong influence of peers is usually confirmed, but in the case of parents and SES, findings are inconsistent. Mostly the influence of parents and peers on smoking and the influence of SES on smoking are explored separately. In some cases the interaction effect of SES and parents or SES and peers on adolescent smoking behaviour is explored. The studies of Green et al. (1991) and Glendinning et al. (1994) were an important background for our model of determination of adolescent smoking behaviour. They explored the influence of parents and peers on adolescent smoking behaviour in the context of socio-economic differences. They found the influence of parents and peers on adolescent smoking behaviour to be independent from the influence of SES on such behaviour. They confirmed interaction effects on adolescent smoking behaviour and the main effects of such behaviour. We had a similar starting point (chapter 6), but in our sample we confirmed the significant interactions, and the character of these interactions indicate an indirect effect of SES and parents on adolescent smoking behaviour through peers. Findings resulting from

exploring the model including the influence of SES, parents and peers on adolescent smoking behaviour confirmed our hypothesis. Peers' smoking behaviour influences adolescent smoking behaviour the most. Parents' smoking behaviour influences adolescent smoking behaviour directly, but also indirectly through the influence on peers' smoking behaviour. The indirect influence of parents can be explained by their influence on the selection of peer-friends. Rossow and Rise (1994) confirmed, that parents contributed to the selection of peers whose behaviour is similar to the parents' behaviour. Urberg et al. (1997) confirmed that parent-adolescent relationships influence the selection of peers. SES influences adolescent smoking behaviour only indirectly through the influence on parents' and peers' smoking behaviour.

#### **HOW DOES RISKY BEHAVIOUR CONTRIBUTE TO SOCIO-ECONOMIC HEALTH DIFFERENCES AMONG ADOLESCENTS?**

There are at least two hypotheses explaining how health risk behaviour may contribute to socio-economic differences among adolescents. The first one, the hypothesis of different exposure, predicts that adolescents of lower SES more frequently behave riskily and as a consequence suffer from more health complaints. The second one, the hypothesis of different vulnerability, searches for some mechanism which makes the higher SES group more resistant and the lower SES group more vulnerable to the detrimental effects of risky behaviour. Such mediator variables may be for example coping style, access to health care, access to protective sources like nutrition, sports, or more health information which leads the adolescents to smoke and drink in lower intensity.

Using dichotomised measures of smoking and alcohol consumption and 5 indicators of SES (father's and mother's occupational group, father's and mother's education, type of school) and experienced health complaints, we tried to find evidence supporting these hypotheses. Socio-economic status and health risk behaviour interacted in their influence on health only when SES was based on the mother's characteristics. Analysis of confirmed interaction effects revealed the evidence for both mechanisms, different exposure and different vulnerability. The former explains socio-economic health differences more strongly. Kooiker and Christiansen (1995), Stronks et al. (1998), Call and Nonnemaker (2000) found evidence to support the hypothesis of different exposure, but not for the hypothesis of different vulnerability.

## **SOCIAL SUPPORT**

While smoking, alcohol consumption, drug use and lack of physical exercise are among risk factors, social support is one of the possible protective factors of health. It was supposed that social support would influence health and would be unequally distributed among socio-economic groups, and thus might contribute to the presence of socio-economic health differences among adolescents. Our findings confirmed this hypothesis. Social support is related to health, and it is unequally distributed among gender and socio-economic groups of Slovak adolescents. Females, adolescents from lower socio-economic groups and adolescents reporting low social support, report worse health in comparison to males, adolescents from higher socio-economic groups and adolescents reporting high social support. Males and adolescents from lower socio-economic groups more frequently report low social support in comparison to females and adolescents from higher socio-economic groups. There are no significant differences in the influence of social support on health among gender and socio-economic groups. Findings on social support give support to the hypothesis of different exposure, but not to the hypothesis of different vulnerability.

## **RECOMMENDATIONS FOR FUTURE RESEARCH**

The results of this study are some recommendations for the design, sample, model and context of future research which could be helpful for anybody who would like to continue in research of socio-economic health differences in the Slovak Republic. To monitor socio-economic health differences and not just health is very important with regard to possible consequences of the transitional crisis in the Central European youth population. Youth is more vulnerable in comparison to adults, so we can assume that the health consequences of the transitional crisis will be become visible earlier among adolescents. On the other hand, youth is more flexible, so we can expect young people to lead the development of strategies for coping with new situations in society. Both a longitudinal and a cross-sectional design of research are of high relevance. A cross-sectional design permits the monitoring of socio-economic health differences related to the cohort effect (effect due to societal changes). A longitudinal design permits the monitoring of change in socio-economic health differences related to age. The baseline measurement was done in 1997/1998. The follow-up will take place in 2002/2003. The Dutch study (*Tuinstra 1998*) will also be repeated. The data collection of the comparable study will take place in 2001/2002 (*Matthesius 2001*). Some of our respondents have entered the labour market, become unemployed, continued in study, changed the

study programme (up/ down), become pregnant, had troubles with the law, become seriously ill, become abusers of drugs and what is the most important – become adult. So we are now interested in socio-economic health differences in early adulthood.

Because of decreasing societal buffer factors we expect, in a cohort study to find more and deeper socio-economic health differences than we found four years ago. In the same group, which is five years older now, we expect at least the age effect: socio-economic health differences are greater among adults compared with adolescents.

Moreover, it will be possible to explore predictors of this change in socio-economic health differences, which can help to explain this change and can show some effective interventions for reduction of socio-economic health differences.

The longitudinal data may also be very useful in research into health risk behaviour, one of the most important factors of health. Particularly in adolescence, when health risk behaviour is just establishing itself and may yet be preventable, it is of high significance. We collected various data at time 1 (SES, health, health risk behaviour, attitudes towards health risk behaviour, parental health risk behaviour, peer health risk behaviour, social support, self-esteem) and we will explore the change in health risk behaviour related to this data at time 2 (four years later). It will be interesting to see the consequence of the explored predictors on health risk behaviour four years later. The answer to this question may contribute to health promoting strategies focusing on life style change.

Another issue of high relevance with regard to future research is the widening of the sample in terms of age, region, minority and other special groups. We do not know how Slovak children, adults and the elderly are affected by SES, particularly in a situation of transitional crisis. The sample should, in an ideal case, be widened not only for age groups, but also across regions in the Slovak Republic, at-risk groups like immigrants, women, disabled, unemployed, minorities (the Roma population, but also the Hungarian and Ruthenian minorities are missing in our sample). Disadvantaged and neglected groups particularly require special interest (*Kotekova 1998, Koupilova et al. 2000*). Boths Czech and Slovak Republics have a substantial Roma population, the exact size of which is uncertain (3% in Czech, 10% in Slovak Republic, based on unofficial estimates). Evidence suggests that the health status of Roma is worse than that of the non-Roma population in the Czech Republic and Slovakia. The Romany minority has traditionally had, with very few exceptions, a low SES. Since 1989 many Roma families have fallen further into

poverty and social exclusion. There is evidence that health inequalities are generally increasing in the transition countries, as gaps in health between groups with different education levels, income or marital status are widening (*Koupilova et al. 2000*).

The issue of unemployment should be treated from at least two perspectives: 1. consequences of parental unemployment on adolescent health and 2. unemployment of young adults themselves. Olafsson and Svensson (*1986*) discussed unemployment-related lifestyle changes and health disturbances in adolescents and children. "Children and members of families of unemployed are the silent sufferers – they are never registered. A child born into a family facing unemployment has a reduced chance of creating a healthy and meaningful life. In that case their ill-health cannot be labelled self-inflicted" (*Olafsson and Svensson 1986, p. 1105*). The high rate of young unemployed, particularly school leavers, seems to be specific for Central European countries, at least Slovakia and the Czech Republic. Based on official statistics, 32,2% of the unemployed in 1998 were younger than 24 years (*Meseznikova and Ivantysyn 1999*). Unemployment, especially in this case, is extremely risky with regard to health (*Buchtova 1994, 2000*).

To explore socio-economic health differences among Slovak adolescents, a methodology of such research needs to be developed. Sometimes the methodology used in West Europe cannot simply be "copied", because the situation in Central Europe is not the same. A good example are SES indicators, because of the different social stratification of the Central European countries (*Wnuk-Lipinski and Illsley 1990a-b*). Methodology and measurement used in West Europe need translation and adaptation to Central European conditions. Several measurements well known in West Europe have been adapted and established for the Slovak adolescent population. New ones were developed for the purposes of this study. Work on methodology should continue.

With regard to the hypothesis of health selection, intergenerational social mobility should be explored. More than half of the adolescents in this study have not changed their position in socio-economic stratification when their SES (type of school) is compared to their parents' SES (education, occupation). About 15% of adolescents have experience upward intergenerational mobility. Downward intergenerational mobility has been experienced by 30% of adolescents approximately. Figures are described in Table 27.

**Table 27** Mobility of respondents in relation to the education or occupational group of parents (in %)

	Highest education of parents	Highest occupational group of parents
Upward mobility	15,8	14,3
Stable mobility	57,8	55,4
Downward mobility	26,4	30,4

Upward mobility in this table means the percentage of adolescents attending grammar school while their parents belong to medium or low SES or completed secondary specialized school and lower education + the percentage of adolescents attending specialised secondary schools while their parents belong to low SES or completed apprentice school or lower education.

Stable mobility in this table means the percentage of adolescents attending grammar school whose parents belong to high SES or completed university education + the percentage of adolescents attending apprentice school whose parents belong to low SES or completed vocational school or lower.

Downward mobility in this table means the percentage of adolescents attending specialised secondary school while their parents belong to high SES or completed university education + the percentage of adolescents attending apprentice school while their parents belong to medium or high SES or completed specialized secondary school or higher education.

The role of psychosocial stress-related factors should be explored more thoroughly. Our model did not include stressors (long-term difficulties, life-events, perceived economic stress) and some important factors modifying the impact of stressors on health (coping style, locus of control, sense of coherence).

We should look in more detail at grandparents and their specific role in Central European families. They substitute the roles of parents who are absent, and they do this in a different way from the parents. This can be extremely important for adolescents, when the parent-child relationship may be affected by developmental processes.

There should be focus not only on the level of the individual, but also on a higher level, for example the level of school environment, the municipality and the community, because it seems to be extremely important not only for the explanation of socio-economic health differences, but also for their reduction. Information should be collected about the environment where at-risk adolescents live, to help find protective and risk factors of health and socio-economic health differences on this environmental level.



For example, on the individual level, we confirmed the very strong influence of peers' smoking on adolescents' smoking behaviour. School environments differ in the "occurrence" of smoking peers influencing adolescents, but also in the power of these peers to influence adolescent smoking behaviour. This is a first step in looking for factors which make some environment healthier.

Concluding this chapter, we recommend further research on socio-economic health differences:

- ⊖ both cross-sectional and longitudinal design
- ⊖ wider sample in terms of age, region, minority and other special groups
- ⊖ extending the model, add new variables
- ⊖ socio-environmental context

### **POLICY RECOMMENDATIONS**

Socio-economic health inequalities are ethically unacceptable. The main reason for research into inequality is to find efficient reduction strategies. We agree with Kunst (1997) that even a modest reduction of socio-economic health inequalities can save a lot of human misery. But, as we know, a societal problem will not reach the political agenda because of its size. Over 30 years ago, Bachran and Baratz published their agenda-building model with barriers (Bachran and Baratz 1970). The most important one is that society should admit there is a problem. There are people who are in favour of the problem reaching the agenda from society's subconscious, and others who want to keep it there. In all different stages of the political process both groups are active. Other authors (Lowi 1963, Cobb et al. 1976, Cobb and Elder 1983) distinguish circumstances for a problem which are favourable for its reaching the agenda and others which are not. Redistributive problems have difficulty reaching the agenda; other complicating factors are the complex nature of the problem and the absence of a clear, simple solution.

The aim of the rest of this chapter is to discuss policy recommendations, particularly in the field of education, health care, preventive care, government, and municipalities.

#### **1. Education**

Adolescents are influenced by at least three main sources of education: 1. family, mainly parents, 2. school and 3. society including youth subculture. The target of reduction strategies should be at least adolescents themselves and significant adults. The group of significant adults consists of parents, teachers, health professionals, social workers, municipality workers and other people who have

influence on adolescents. Lester et al. (2000) explored health authority employees' opinions on method of working effectively towards greater equity. This study identified a need for more information or training to enable staff to deal with issues of health inequality in their day to day work. The presence of socio-economic health differences should be part of the education and the training of these people. Professionals should know how SES influences health and quality of life and how they can contribute in their daily practice to the reduction of inequity which is unacceptable from an ethical point of view, and which is at the same time detrimental for society as a whole. The solutions can be sometimes very simple and very cheap, based on a clear awareness of mechanisms producing inequalities.

There is a lot of criticism on school education systems; this criticism stresses the transfer of a lot of general information, and at the same time points to the shortcomings in the main role of school education: to teach children to manage their own life in adulthood. Teaching them to be responsible for their own health and how to maintain their health and an optimal quality of life is that part of education which can be improved a lot. There are efforts to improve this and implement more health education at least partially in some samples. We think, and our findings support this idea, that much more work in much more complex design should be done in this field.

## **2. Health care**

Equal access to the health care system is guaranteed by law in Slovakia. The question then is whether apart from this formal equal access, in practice the access to health care system is really equal. There are doubts at least whether the benefits from the health care system are equally divided over different socio-economic groups (Stronks 1997). Differences in health care, but also preventive care may arise from unequal use of available services caused by differences in the accessibility of services or individual preferences, but also from unequal effectiveness of services on the user or provider side. Despite the fact that health care is not the most important determinant of socio-economic health inequalities, reduction strategies may identify it as a major channel for improvements.

The monitoring of health, of inequalities in health, but also of inequalities in the access to the health care system is required. Particularly the issue of benefits from the health care system needs to be monitored and improved.

Lester et al. (2000, 2001) describes the way how health authorities may contribute to diminishing of health inequalities. The health authority involved (Bro Taf Health Authority) declares to assess all future proposals for their likely impact on

health inequalities particularly for vulnerable groups (children, elderly, ethnic minorities), to consult widely with partners in public health to develop strategies to reduce health inequalities, to act as an advocate for population (leading and informing debate with other agencies), to co-operate with national and local government to reduce health inequalities.

Our findings support the importance of health promotion. The situation in Slovakia is similar to that described by Walker et al. (2000): Adolescents would like to discuss their health concerns with health professionals, but few GPs offer teenagers health promotion. Walker et al. (2000) describe a project with a possible intervention. Adolescents were invited for a short (20 min) consultation with a GP. The issue was how to promote their own health. Adolescents who accepted this invitation (41%), considered this visit very useful and the majority of them prepared a plan to maintain their own health. Diet, exercise and smoking were the most frequently discussed issues.

### **3. Government, municipalities**

As was pointed out earlier in the "general introduction", one of the possible explanations of the socio-economic health differences among Slovak adolescents (which are "not absent" in contrast to Western Europe - see chapters 1+4) is that the system of "buffers" from the previous period does not work anymore, but new ones do not work yet. This part will required multisectoral co-operation. Such co-operation assumes that the topic is on the political agenda of the various participants.

Our findings indicate health risk behaviour as a strong contributor to socio-economic health differences. Health risk behaviour is a part of life style, a part of leisure time activities and is related to health education, access to healthy alternatives in the environment and health promotion programmes integrated in normal adolescent life.

The most effective seem to be the community-based health programmes, but their implementation is often associated with difficulties. In the ideal case, health is a topic which is deliberated upon in every policy field of a municipality. In this approach health is not a sectoral issue, but health policy is an intersectoral policy which has consequences for nearly all other policy fields.

### **OVERALL CONCLUSION**

Inequalities in health among Slovak adolescents were explored in terms of several research questions. Self-reported health problems, socio-economic health differences, socio-economic differences in health risk behaviour, validity of the

hypotheses of different exposure and different vulnerability in the explanation of socio-economic health differences, the influence of parents and peers on adolescents, and the school environment and social support in the explanation of socio-economic health differences were explored. Our findings can be concluded as follows.

1. Slovak adolescents, female more than male, suffer from a considerable number of self-reported health problems.
2. There are significant socio-economic health differences, unfavourable for lower socio-economic groups of adolescents in Slovakia. We did not confirm gender differences in socio-economic health differences.
3. Health risk behaviour and positive attitudes towards health risk behaviour occurred more frequently in lower socio-economic groups of adolescents.
4. Both explanations for socio-economic health differences, different exposure and different vulnerability, seem to be valid for the explanation of socio-economic health differences through health risk behaviour, but the first one, the explanation of different exposure, explains the differences more convincingly.
5. Peers' smoking influences adolescents' smoking behaviour the most. Parental smoking influences adolescent's smoking both directly and indirectly through the influence on peers' smoking, and SES influences adolescents' smoking only indirectly through its influence on parental and peers' smoking.
6. Low social support is related to poorer health and occurred more frequently in lower socio-economic groups of adolescents. Findings support the hypothesis of different exposure, but not the hypothesis of different vulnerability.