3 Self-reported health problems of Slovak adolescents

Abstract

This paper describes self-reported health problems among 2616 Slovak adolescents (boys 52,4%, girls 47,6%). Adolescents consider their health as very good in general. They often feel "vital" rarely feel depressed or nervous. On the other hand, the psychological health of more than 20% of the boys and 40% of the girls was unsatisfactory. Also a sizeable number of them suffered from separate physical complaints, chronic diseases or used medical services. Findings are more unfavourable for girls in comparison with boys. Our findings indicate that adolescence is not such a healthy period in human life. The Slovak Republic, a Central European country, does not differ in this respect from Western European countries.

Key Words

health status, self-reported health, health indicators, adolescents, Slovakia

Authors: Geckova A., Tuinstra J., Pudelsky M., Kovarova M., van Dijk J.P., Groothoff J.W., Post D.

Published: Journal of Adolescence, 2001, vol. 24, no. 5, pp. 635-645

Introduction

Health is one of the most valuable aspects of human life. One of the ways to protect it is to investigate it and collect information about it for a single period of life. Adolescence in particular seems to be a very important period, because it is the time, when people are looking for, experimenting with and also establishing life style, attitudes, concepts, beliefs and habits, which may have long-term influences on health. Some unfavourable health processes can be reversible at this time. Surveys of adolescents' health are also interesting because there is disagreement among findings in two areas: those obtained by commonly used health indicators, such as mortality and morbidity and those obtained by self-reported health indicators, such as self-rated health, self-reported questionnaires of psychological health, physical health complaints, long-standing diseases, medical consumption and so on. According to the former, adolescence seems to be a very healthy period. However, research based on self-reported health indicators shows a considerably high prevalence of health problems. This means there are differences between the adolescents' own perception of their health and results of epidemiological studies based on mortality and morbidity.

Health is more than just a mortality or morbidity rate. Without doubt, the concept of health includes also feelings, worries, and the perceptions of adolescents related to health. So, self-reported health indicators seems to be more appropriate and more efficient in surveys of health status in adolescence, than health indicators based on medical records or medical statistics.

At present, a lot of attention is focused in international journals on the health of adolescence, especially in Western Europe, but there is a lack of information about the health status of Slovak adolescents. Also, self-reported health indicators are very rarely used in research carried out on the Slovak population. This means we know very little about the health of Slovak adolescents, especially about self-reported health problems. There is more than one reason why attention should be focused on this period of human life and on a Central European country.

Firstly, Member States of the World Health Organisation (WHO) in the European Region have adopted a strategy for Health for All. Its first "target" is focused on reducing the health differences between countries and between groups within countries *(1990)*. Firstly however, we have to know how healthy Slovaks are and if there are any health differences between them. The findings of Ginter *(1996, 1995)* show poor health within the Central European population, particularly amongst the Slovak population. This is particularly apparent when compared to reported

health statistics within the West European population. Is it also a case of the next generation - which means adolescents?

Secondly, surveys of health should be a sufficient basis for health policy, but should also provide inputs for subsequent surveys to investigate socio-economic inequalities in health. Socio-economic differences are hardly present during adolescence, but they increase in early adulthood. Longitudinal research may shed more light on the origin of the socio-economic health differences and on the possibilities of slowing the unwanted increase in these differences.

Thirdly, it is commonly accepted that it is better to protect health than to cure diseases. Adolescence especially, is the period of human life, in which the basis of health protective behaviour is established and the first symptoms of future serious health problems can occur.

Our study is part of an international comparative longitudinal study ”Comparing Social Patterns in Health between Western and Central Europe in Adolescence”. The Netherlands, Scotland and Slovakia are participating. The aim of this study is to explore health and social patterns in health with regard to a specific period in life and also within an international context. The international character, particularly Slovak participation established possibilities of discussing findings in a Central-West European context. It is important particularly because Central European countries are organised in a different way and very little is known about the character and the size of socio-economic health differences in these countries. This Slovak study follows parts of Scottish and Dutch studies.

Scottish participation in this project is based on ”The Study of Youth and Health” *(West 1986)* which is a part of ”The West of Scotland Twenty-08 study” *(MacIntyre 1987, MacIntyre et al. 1989)*. It is longitudinal in design and involves a 20-year follow-up of three age cohorts, 15, 35 and 55 years as the baseline. The sample of adolescents consists of 1009 respondents from Central Clydeside Conurbation (Glasgow City and 10 surrounding local government districts), mean age 15 years. Comparable indicators were used in a Dutch study ”Health in Adolescence” which is a part of the ”Longitudinal Study into Social Inequality and Health from Adolescence to early Adulthood” *(Tuinstra 1998)*. Baseline data collection was performed in 1994/95 in the northern part of the Netherlands (n=2090, mean age 16,2).

Finally, gender comparison of self reported health problems are reported. The importance of the ”gender” perspective in studies of adolescent health is highlighted also by findings of Goodman et al. *(1997)* and Gijsbers van Wijk and Kolk *(1997)*.

METHODS

Procedure and respondents

Data were collected in September and October 1998 as a part of an international comparative longitudinal study ”Comparing Social Patterns in Health between Western and Central Europe in Adolescence”. The sample consists of 2616 first grade students of 31 secondary schools located in Kosice (52,4% boys, 47,6% girls, and mean age 15 years). This sample was stratified according to gender and type of secondary school; the proportion of the five educational levels of the regular Slovak school system was maintained. Individual schools were selected at random. We can consider our sample as representative of the Slovak adolescent population. Respondents completed the questionnaires at school, in their classrooms and 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 0,5%.

Measures of health

The data were assessed by self-reported questionnaires, which included the following measures of health.

Self-reported health was measured by asking the respondents to describe his/ her health as excellent, very good, good, fairly good or bad. There are a lot of studies confirming the relation between this scale, and mortality and morbidity *(Appels et al. 1996)*.

Psychological Health was measured by the Slovak version of a 12-item version of the General Health Questionnaire (GHQ) *(Goldberg and Williams 1988)*. The GHQ is a self-report questionnaire consisting of statements about aspects of well being, such as worries, tension or sleeplessness. With each statement, the current status of the respondent over the past four weeks is compared with his or her normal status by one of four responses. Two methods of scoring are used, a Likert score (range 0-36) and a binary score (range 0-12) which permits the identification of “cases” or in other words a level of symptomatology of potential clinical relevance. According to Banks *(1983)* study, a cut-off point of 2/3 should be used as a criterion for cases in adolescence.

Two subscales of the Slovak version of the RAND-36 i were used to measure **vitality and mental health**. The four items of the vitality scale are focused on feelings of energy and fatigue. The scale of mental health has five items representing feelings of depression and nervousness. The respondents were asked to evaluate their feelings over the past four weeks. The scores were transformed following the

prescribed formula (range 0-100). A higher score indicates a better health status.

Experienced health complaints were measured by the Slovak version of a shortened 13-item version of the VOEG *(Jansen and Sikkel 1981)*. This questionnaire shows a valid and reliable picture of the current health status, expressed in physical health complaints. In the Slovak version 5-anchor scales were used to describe the frequency of suffering of included health complaints during the last month. For dichotomization, the frequency "to suffer three times and more during the last month" were used as a cut-off point. Both the prevalence of 13 separate VOEG items, and the sum score of the VOEG varying from 0-13, were examined.

Chronic diseases were assessed by means of a questionnaire based on the Health Interview Survey of the Dutch Central Bureau of Statistic *(CBS 1994)*. This questionnaire was improved according to the results of a pilot study and accessible data about the prevalence of chronic diseases in adolescence *(Sobotik et al. 1994)*. The questionnaire in the present study provides a selection of fourteen chronic diseases, which are the most prevalent in adolescence. The respondents were asked whether or not they suffered from any of these chronic diseases for longer than three months. We examined the prevalence of the separate chronic diseases and also the average number of used categories per person.

The questionnaire of **medical consumption** was created especially for the purpose of this study and was based on the questionnaire used in the Dutch sample *(Tuinstra 1998)*. A set of questions examined prevalence of serious illnesses (surgery, hospitalisation, other serious illnesses), injuries, which required health service, visits to doctors and the use of prescribed and non-prescribed drugs.

Validity of the health indicators used was discussed by Geckova et al. *(1998a)*, Pudelsky et al. *(1999)* and Javorsky et al. *(2000)*.

Analysis

The analyses were carried out using the statistical software package SPSS, version 7.5.2. Boys and girls were analysed separately and possible gender comparisons were drawn. Distribution of the health measurements between the male and female adolescents were tested by a t-test (sum score of GHQ-12, average scores of vitality and mental health scales; dichotomous variables) or a Chi square test (other variables; categorical variables).

RESULTS

Self-Reported Health

On average, adolescents consider their health as very good. Boys (68,9%) and girls (55,1%) consider their health mostly as excellent or very good. Less than 5% of adolescents consider their health as fairly good or bad.

Table 8 Self-Reported Health (in %)

	Male	Female	Significance
Excellent	29,2	18,7	**
Very good	39,6	36,4	
Good	27,1	40,1	
Fairly good	3,1	4,1	
Bad	1,0	0,7	

** significance p £ 0.01
* significance p £ 0.05

There are significant differences between boys and girls in self-reported health. As Table 8 shows, boys evaluated their health more positively than girls.

Psychological Health

A sizeable number of Slovak adolescents were detected as a “cases” (a level of symptomatology of potential clinical relevance). The psychological health of 23,9% boys and 41,3% girls were not satisfactory (“cases”) in Slovakia. More than half of the adolescents detected as a “case” (48,1% - 79,1%) had been feeling unhappy or depressed, had felt constantly under strain, had suffered sleep deprivation and felt they could not overcome their difficulties. These items of GHQ-12 seem to be significant for being identified as a “case”. The first three of them were also indicated in a Dutch study *(Tuinstra 1998)*. The mean score of GHQ-12 (Likert) was 9,34 in boys and 11,57 in girls.

There are significant differences between boys and girls in psychological health. The psychological health of boys was statistically significantly (p £ 0,01) better when compared with girls in both methods of scoring and evaluation. Girls scored higher in GHQ and also they were most frequently detected as a “cases” and they scored significantly higher than boys in all items of the used questionnaire.

Vitality and Mental Health

Slovak adolescents may be described as often being full of energy (vital) and rarely depressed or nervous. Girls have significantly (p £ 0,01) less favourable mean scores in vitality (boys 64,2, girls 57,7) and mental scales (boys 71,1, girls

64,6) in comparison to boys. Scores of vitality were lower than 60 in 37% of boys and 52% of girls and scores of mental health were lower than 60 in 35% of boys and 52% of girls.

Physical Health Complaints

Only 40% of the boys and 23% of the girls reported none of the listed complaints. A considerable number of adolescents reported two or more health complaints (boys 41,6%, girls 61,7%). Boys reported a mean of 1,76 health complaints and girls 2,86; the difference is significant.

Adolescents mostly suffer from headache and backache and also get up feeling tired and listless. More than 15% of the boys and 30% of the girls suffered three times or more during the last month from these complaints. Approximately half of the girls felt tired three times or more during the last month.

Table 9 Physical Health Complaints (in %)

	Male	Female	F/M	Significance
Stomach feel full and bloated	5,3	12,1	2,28	**
Get short of breath easily	10,4	12,8	1,23	*
Have pains in the chest or hear region	5,4	11,1	2,06	**
Bones and muscles ever ache	16,6	19,6	1,18	*
Feel tired	27,1	47,6	1,76	**
Headache	16,2	33,9	2,09	**
Backache	12,6	23,9	1,90	**
Upset stomach	3,9	4,8	1,23	
Feel dead legs	6,4	10,0	1,56	**
Get tired sooner	13,2	21,3	1,61	**
Feel dizzy	6,2	14,7	2,37	**
Feel listless	22,2	35,8	1,61	**
Get up feeling tired and unrest	30,7	38,8	1,26	**
Average number of used categories per person	1,76	2,86		**

** significance p £ 0.01
* significance p £ 0.05

Gender differences are demonstrated more in detail in Table 9. This table shows the patterns of statistically significant sex differences for 12 out of 13 symptoms reported. The prevalence of 9 pointed health complaints amongst girls is twice as high as it is in boys.

Chronic diseases

In our study, per male 0,7 chronic disease and per female 0,9 chronic disease were recorded; the difference is significant. Approximately half of the adolescents (boys 43,3%, girls 52,6%) suffered from at least one chronic disease. As Table 10 demonstrates, a sizeable number of adolescents suffered from chronic complaints of the back, hay fever, allergy, skin diseases, eczema and girls also from migraine.

Table 10 Chronic Diseases (in %)

	Male	Female	F/M	Significance
Asthma, COPD	1,0	2,2	2,2	*
Inflammation of frontal sinus	1,3	1,8	1,39	
Hay fever	14,6	12,4	0,85	
Allergy	11,5	14,2	1,23	*
Chronic complaints of the back	15,0	22,5	1,5	**
Rheumatoid arthritis	1,1	2,7	2,46	**
Epilepsy	0,1	0,6	6,00	**
Migraine	3,0	6,7	2,23	**
Skin diseases, eczema	7,2	11,0	1,53	**
Haemophilia	0,3	0,3	1,00	
Diabetes	0,4	0,6	1,5	
Inflammation of the bladder	0,4	1,0	2,5	
Hypertension	4,3	3,1	0,72	
Ulcer	0,1	1,0	10	**
Other	5,4	8,8	1,63	**
Average number of used categories per person	0,65	0,89		**

** significance p £ 0.01
* significance p £ 0.05

With the exception of hay fever, significantly more girls than boys suffered from all pointed chronic diseases. Girls suffered from migraine twice as frequently as boys did.

Medical consumption

Less than 10% of the adolescents experienced serious illness during the last year. Less than 20% of the adolescents used prescribed drugs and less than 30% of them used non-prescribed drugs. Less than 30% of adolescents were seriously injured during the last year. Approximately half of the adolescents had visited the doctor during the last two months.

Table 11 Medical Consumption (in %)

	Male	Female	Significance
Serious illness during last year	7,9	8,7	
Serious injury during last year	35,9	18,4	**
Visit of doctor during last two months	44,2	51,2	**
Prescribed drug use during last two weeks	17,2	20,8	*
Not prescribed drug use during last two weeks	20,8	33,7	**

** significance p £ 0.01
* significance p £ 0.05

According to medical consumption we – at least partially - confirmed poorer health in boys in comparison to girls. As can be seen in Table 11 twice as many boys than girls were seriously injured during the last year and the difference is significant. On the other hand, girls visited doctors and used drugs significantly more often.

Table 12 The list of most frequently used prescribed and non-prescribed drugs and purposes of medical consumption (in % male/ female)

group of used a prescribed drugs	**group of used a non-prescribed drugs**
· antibiotics or chemotherapeutics (5/5)	· painkillers (8/20)
· supportive symptomatic treatments of respiratory diseases (3/4)	· vitamins or minerals (7/7)
· antihistaminic (2/3)	· supportive symptomatic treatments of respiratory diseases (4/5)
· vitamins or minerals (2/3)	
· painkillers (3/2)	

purpose of visiting a doctor	**purpose of using a prescribed drugs**	**purpose of using a non-prescribed drugs**
· medical check-up, examination or vaccination (16/19)	· respiratory diseases (10/14)	· respiratory diseases (9/12)
· respiratory diseases (15/21)	· allergies (1/2)	· headache (4/10)

As is depicted in Table 12, the most frequently used group of prescribed drugs seems to be antibiotics or chemotherapeutics and the most frequently used group of non-prescribed drugs seems to be painkillers. Respiratory disease seems to be the main reason for an utilisation of medical services.

An interesting question is who advised adolescents to use non-prescribed drugs. Parents had advised children to use drugs in half of the cases and a quarter of adolescents had decided to take them for themselves. In 10% of case it was someone else who had given the advice. Findings show that parents play a very important role in health behaviour in both direct (they were advisors) and indirect (self-medication is probably related to parents norms and values) ways.

Discussion

Findings indicate that in the Slovak population, as in other countries adolescence is not such a healthy period in human life, as it is usually considered. On the other hand the occurrence of self-reported health problems were similar or lower in comparison to West European adolescents, respectively Scottish and Dutch adolescents. In this paragraph the overview of similarities and differences in health between Central and Western European adolescents will be discussed along with gender differences in health.

Firstly, more Slovak adolescents (boys 68,9%, girls 55,1%) evaluated their health as excellent or very good when compared to Scottish (boys 57,1%; girls 50,6%) *(West et al. 1990)* and Dutch adolescents (boys 62,1%; girls 43,5%) *(Tuinstra 1998)*. Also King et al. *(1996)* reported that more Slovak (boys 40%; girls 22%) than Scottish (boys 28%; girls 9%) adolescents evaluated their health as very good. King et al. *(1996)* reported that the number of respondents who felt very healthy went down with increasing age (11, 13, 15-year-old cohort) in the Slovak population.

Boys evaluated their health more positively than girls and a similar pattern of gender differences in self-rated health was reported in 24 European countries and Canada by King et al. *(1996)*. West et al. *(1990)* and Glendinning et al. *(1992)* confirmed these findings in Scottish adolescents and Tuinstra *(1998)* in Dutch adolescents.

Secondly, a similar percentage of Dutch (boys 22,3%; girls 44,4%) *(Tuinstra 1998)* and a much lower percentage of Scottish (boys 10,4%; girls 18,5%) *(West et al. 1990)* adolescents were indicated as a “cases” (psychological health on level of potential clinical relevance). Our findings about the vitality and the mental health of Slovak adolescents are similar to Dutch findings (vitality: boys 62,57; girls 54,25; mental health: boys 72,10; girls 64,14) *(Tuinstra 1998)*.

Significant gender differences in psychological health, vitality and mental health were confirmed using the same questionnaire in Dutch adolescents *(Tuinstra 1998)* and in the case of psychological health also in Scottish adolescents *(West et al. 1990, Glendinning et al. 1992)*. Dzuka *(Dzuka et al. 1993, Dzuka 1994)* and also Geckova *(1999)* used a different questionnaire of well-being (Bern Questionnaire for psychological well-being) *(Dzuka et al. 1993, Dzuka 1994)* and confirmed gender differences unfavourable for girls.

Thirdly, Dutch adolescents *(Tuinstra 1998)* reported more health complaints (boys 3,02; girls 4,62) than Slovak adolescents. The three most prevalent physical

health complaints in the Slovak adolescent population, respectively: tiredness, headache and backache were most prevalent also in the Dutch adolescent population *(Tuinstra 1998)*. According to King et al. *(1996)*, it is only in Canada and Belgium that the prevalence of backache is higher than in Slovakia (boys 22%, girls 30%). If we consider that feeling listless – one of the most prevalent physical health complaints – may be interpreted as suffering from bad temper or being nervous, then the high prevalence of listlessness and backache appear to be something specific in Slovak adolescents. In Slovakia, the prevalence (suffered once or more a week during the previous 6 months) of bad temper (boys 62%, girls 74%) and nervousness (boys 57%, girls 73%) was the highest among the 24 investigated European countries and Canada *(King et al. 1996)*.

Fourthly, a sizeable number of Slovak adolescents, but also Dutch adolescents (boys 32,8%; girls 43,3%) *(Tuinstra 1998)* suffered at least one chronic disease. In Dutch adolescents the prevalence of hay fever and in girls also of skin diseases and eczema was higher than 10% *(Tuinstra 1998)* like that it was in Slovak adolescents. Considerably more Slovak adolescents suffered from back complaints and less of asthma and COPD in comparison with Dutch adolescents. The prevalence of asthma and COPD was lower than 2% in Slovak adolescents. According to Sobotik et al. *(1994)* the prevalence of COPD in the appropriate age group (14-24 years old) is 3,3% in male and 0,7% in female and these numbers are very similar to our findings. Because of a great deal of similarities between and the unified history until recently of Czechs and Slovaks we can use his *(Sobotik et al. 1994)* data about the Czech population as approximate for the Slovak adolescent population. This approximation is interesting also because this data was based on physicians' records and equivalent data about the Slovak population at this age is not available. So per male 0,77 chronic disease and per female 0,78 chronic disease was recorded in the age group 14-24 years old. They are very similar to the findings of our study. In other words, our subjective health indicators should be considered as good health indicator in comparison with objective health indicators. Both, data based on self-reported questionnaires and data based on physicians' records confirm, dorsopathies (as a chronic diseases including chronic complaints of the back) and skin diseases as chronic diseases with the highest prevalence. It is also noteworthy that dorsopathies maintained the highest positions also in the next age group (25-34 years), in which the prevalence was more than doubled in comparison to younger age groups. Both data also confirm a higher prevalence of chronic diseases in females in comparison to males.

Significantly more girls in comparison to boys suffered from almost all single physical health complaints and chronic diseases also in the Dutch adolescent population *(Tuinstra 1998)*. On the basis of an identical sample Pudelsky et al. *(2000)* confirmed that adolescents suffering from at least one chronic disease evaluate their health less positively when compared with their healthy peers and also used medical services, particularly visited a doctor and used medication more frequently than their healthy peers. To be suffering from at least one chronic disease is accompanied by broader health consequences in adolescence.

Sixthly, Slovak adolescents are characterised by a low use of medical drugs in comparison to other European countries *(King et al. 1996)*. Only 12% boys and 22% girls used medical drugs for headache, only 9% boys and 21% girls used it for stomach-ache, the same number for sleep problems and 33% boys and 34% girls for cough or cold *(King et al. 1996)*. This data is only partially comparable to our data, because King et al. *(1996)* did not differentiate between prescribed and non-prescribed drugs. Unfortunately we did not dispose by comparable Dutch or Scottish data.

Gender differences in medical consumption are not so homogenous. Boys are most frequently engaged in risky behaviour and also in sport activities, which can lead to more injuries in comparison with girls. On the other hand, girls more frequently report that they suffer from health complaints. That means they use medical services more frequently. Our findings, as well as the findings of Dengler and Roberts *(1996)* support this hypothesis. They examined the consumption of prescribed drugs and non prescribed drugs by adolescents and found girls as more frequent users in comparison with boys, particularly of prescribed drugs, non prescribed painkillers or cough or cold treatment *(Dengler and Roberts 1996)*. But there are also some findings, which show that although girls tend to suffer from health complaints more frequently than boys, there are no significant differences in utilisation of medical services, particularly in frequency of contact with a physician *(Settertobulte and Kolip 1997)*. In other words, girls suffer more frequently, but they seek medical aid as frequently as boys do.

Our findings can be concluded as following:

1. Adolescents are not so healthy as we usually suppose. Attention should be paid particularly to the following health problems: psychological health, tiredness, headache, backache, skin diseases and respiratory diseases.
2. The character of adolescent health problems would indicate undesirable health processes, which may lead to serious health problems (chronic

respiratory diseases, chronic diseases of musculo-sceletal system and so on), but they are, in this period of life, still preventable, reversible or at least they could be influenced in a more favourable way

3. The prevalence of self-reported health problems in the Central European adolescent population seems to be similar or lower in comparison to West European adolescent population.
4. Our findings, like those of many other studies, confirmed poorer health in girls in comparison with boys.