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International comparison of health capital of school children

Diploma Thesis

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Abstract

MARTINKOVÁ, S. *International comparison of health capital of school children.* Diploma Thesis. Brno 2016

Diploma thesis ,,International comparison of health capital school children“ deals with the issue of health equity among school age children in selected countries. The theoretical part of a literature review deals with the clarification of basic terms that are related to the health capital of children of primary school age, both in terms of school environment or from the perspective of the family and its background. It also describes international organizations, conferences and research going on in the world on this subject, in which the Czech Republic is a member.

In the practical part was carried out a survey among school age children, which corresponds to the 6th and 7th grade elementary schools, or 1st and 2nd grade high schools. The research was conducted within the partner cities in Slovak Republic, the Czech Republic and Austria.

The practical part of the thesis deals with eating and hygienic habits of children, their psychosomatic problems and experiences of children with addictive substances. The survey was conducted among children through questionnaires and follow-up results were compared by age and sex.

It was found that schools that support sport, exhibit in their pupils greater sporting activity. One of the schools promote a healthy lifestyle involving entities in projects ,,Fruit and vegetables to schools," which is also reflected in the outcome of the survey. The survey shows that children are satisfied with their health, especially girls.

In conclusion, the results have been compared with research HBSC.

Key Words: health, health equity, nutrition, obesity, hygiene, school-age children

Abstrakt

MARTINKOVÁ, S. *Mezinárodní srovnání zdravotního kapitálu dětí mladšího školního věku ve vybraných zemích*

Diplomová práce ,,International comparison health capital of school children“ se zabývá problematikou zdravotního kapitálu u dětí mladšího školního věku ve vybraných zemích. Teoretická část se v literární rešerši zabývá objasněním základních pojmů, které se zdravotním kapitálem dětí mladšího školního věku souvisí, ať už z pohledu školního prostředí nebo z pohledu rodiny a jejího zázemí. Jsou zde popsány mezinárodní organizace, konference a výzkumy probíhající ve světě na toto téma, v nichž je Česká republika členem.

V praktické části bylo provedeno dotazníkové šetření u dětí mladšího školního věku, což odpovídá 6. a 7. třídě základních škol, popřípadě primě a sekundě na nižších gymnázií. Výzkum byl proveden v rámci partnerských měst a to konkrétně na Slovensku, v České republice a Rakousku.

Praktická část diplomové práce se zabývá problematikou stravovacích a hygienických návyků dětí, jejich psychosomatických potíží a zkušeností dětí s návykovými látkami. Průzkum byl proveden mezi dětmi pomocí dotazníků a následné výsledky porovnány dle věku a pohlaví. Bylo zjištěno, že školy, které podporují sport, vykazují u svých žáků větší sportovní aktivitu. Jedna ze škol podporuje zdravý životní styl zapojením subjektu do projektů ,,Ovoce a zelenina do škol“, což se taktéž odráží na výsledku průzkumu. Z dotazníkového šetření vyplývá, že jsou děti spokojeny se svým zdravotním stavem, zejména dívky.

V závěru byly získané výsledky porovnány s výzkumem HBSC.

Klíčová slova: zdraví, zdravotní kapitál, výživa, obezita, hygienické návyky, děti školního věku

CONTENT

1 INTRODUCTION

The health is for many of us the most valuable asset that a person has. It is largely threatened by the influence of surrounding negative phenomena on human health has, either physically or mentally. On the scale of values people across the World put health first regardless of race, religion, culture and religion. Perhaps everyone realizes that this value is priceless and irreplaceable. And if the population is healthy it clearly goes hand in hand with the economic situation, because it creates a good situation on the labor market and contributes to the functioning of the economy, both from a global perspective and from the perspective of the European Union(Ministry of Health, Health 2020).

This thesis focuses on the analysis of health equity in children aged 11-13 years. It describes eating habits, physical activity, psychological and physical difficulties of children, addiction and children's experience with tobacco and alcoholic products. These are the habits which are crucial to be correctly set and automated in childhood as they predispose healthy human organism. Improper eating habits lead to civilization diseases such as diabetes, high blood pressure, problems with the cardiovascular system or result in obesity problems.

Concept of human development is based on the health condition and its main pillar. Health comes first in society because as health and healthy population constitutes one of the main ideas and conditions for sustainable development. This progress and the fact that people became interested in studying a healthy lifestyle, has in recent years become increasingly intense and noticeable. It is supported by both political and economic changes as well as changes in environmental, such as environmental pollution and the effect of these impacts on human populations.

Population health is indisputable condition for economic and social development.

2 LITERARY REVIEW

Thec oncept of health characterized from the perspective of scientific literature.

2.1 The concept of health

Linguistic term „health“ can be studied with regard of several languages. The English origin of the word ,,health“ comes from the Old English word „hale“, which is closely related with the word „whole“. In German language, health is translated as „heil“. In the Czech language, we understand the concept of health as a linguistic composition of two words „health“ and „whole“. Equally important is health in English and German (Vilinová, 2012, p. 9).

Most official and authoritative definition of health is set out in the Preamble to the Constitution of WHO, which was approved at the International Conference on Health in New York in 1946. It became official on April 7th of 1948 and reads: *,,Health is a state of complete physical, mental and social well- being and not morely the absence of diseases or infirmity.“* (Vilinová, 2012, p. 9)

According to this definition, it is described as a synergy of health physical, mental and social wellbeing and not merely as a state of illness or some other physical infirmity.

However, this definition has its positive and negative aspects.

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First and foremost refers to health as positive, generally desirable value and identifies health as a state, which is something more than just a state without the disease. At the same time takes into account mental health and relationships between people (Křivohlavý, 2001, p. 38).

This definition lacks the state, when the individual doesn't feel quite well, without knowing the origin or cause of such a feeling.

The WHO definition is missing classification of terms that are used. Those are terms such as ,,well-being“ or ,,complete“, ,,physical, mental, social well- being“.

Health can be defined also from the labor perspective.

David Seedhouse (1995, p. 61) defined it as following: *„Optimal state of health of a person depends on the state of a set of conditions that allow it to live and work so as to meet its chosen realistically and biological options (potentials).“*

According to Křivohlavý (2001), who cited D. Seedhouse, the health is defined as following: *„Health is a word that is used in common parlance in various meaning. Therefore, it is necessary to try to understand the idea that forms the core of this term and is even if hidden integral part of the various meanings of this word.“*

Another author, Bosio Peterson (1991, in Vilínová, 2012, p. 11) distinguishes positive and negative health, depending on whether they are present positive or negative characteristics.

If we take into account some definition of health from the perspective of Czech authors, I would mention the definition of health by Kubíčková (1994, in Havlínová, 1998), which defines concept of health as a state of our own existence, which is also the experience of our overall satisfactory life, feel good on the body, soul and spirit and is also in the relationships around us. It is one of the author's subjective definition, as the authors' opinions on this concept differ slightly. For example Kadlec (1991) approached health from several elementary criteria. He divided approaches by individual or group health and objective and subjective health.

In the 80s of the last century Beattie Gerhardt (1995, in Vilínová, 2012, p. 11) proposed theory of four levels of health.

He divided it into

Biopathological type (mechanical-individualistic)

Man is taken as an organism to which it is regarded as the assessment of disorders and disease state.

Ecological type (mechanical-collectivist)

Interaction between a man and the environment with respect to suitability and unsuitability of the environment.

Biographical type (humanistic-individualistic)

Psychological problems of a person with regard to management and failure to cope with problems.

Community type (humanistic- collectivist)

Social relations of people, socialization in the society, the inclusion or exclusion in society.

If we focus on approaches to health from a human perspective, so we can according to Havlínová (1998, in Vilínová, 2012, p. 11) divided into three fundamental approaches.

Individual health

Includes physical, mental, social and moral health of each individual

Community health

It covers the health of individuals whose behavior belong to the health of the community. Here comes interactions, because the health of individuals affects the health of the entire community

Global health

Balance between the rights and duties of human beings with regard to global health

Approach and view on the issue of health differs author from author. In recent years, environmental health is also addressed. It resolves sphere of relations between environmental factors and human health. Despite the fact that this discipline is a relatively young field, information is very rich and increasingly topical. This matter is not only about individuals but entire global human population.

2.2 Health condition

The term of health is closely linked to the concept of health. It develops over the years in relation to the historical development, in which shaped the economic, demographic and psychosocial factors. It can be clearly demonstrated by the example of the totalitarian system in the last century. People did not pay much attention to their life style, didn't care much about prevention nor about their health condition. There was no significant change of this approach later on right after putsch in 1989. As a result of people's adaptation to the new conditions in the labor market, high unemployment and also income instability, this all reflected negatively on human health and the population's health.

Health status can therefore be defined by Vilinová (1998, p. 12) as reflection of achieved health condition of an individual, social group or population. Contemporary medicine defines it as a medical condition in terms of the negative, i.e. in terms of health disorders diagnosed, and their degree of enlargement.

2.2.1 Importance and determinants of health

Interest in the health and health condition today intensified, especially in the context of the social, political and economic changes and the increasing pollution of the natural environment. Generally, the quality of health of the population is considered one of the most important indicators of the complex relationships between demographic,socio-economic, ecological and political processes (Dzúrová, 2000).

Determinants of health are indicators that influence the presence and development of risk factors for disease (Vilinova, 2012).

The important factors include the health of the socio-economic determinants and their essential part as the level of education. People with higher education display a higher wages that enable better ways to buy quality food or active leisure activities, which is reflected in a higher quality of life and health (Pavlik et al., 2015). Generally, it is important to realize, that the current health status is starting point of the population's health status for future generations and sustainable development of other regions (Trhlínová, 2015). Health is simultaneously fundamental importance for the reproductive process and the development of employment potential and thus for overall economic growth and the competitiveness of regions and the entire country.

EU cohesion policy aims reducing social and economic inequality. Therefore, among other things investing in health, because health is a key factor in regional development and competitiveness. If the population of a region living longer and has a higher quality of health equity, also contributes actively to the life of the local community, less burden on the health sector, and thereby significantly helps and contributes to economic development, especially leading to sustainable growth in the region. Health promotion is implemented in several of the eleven priorities for cohesion policy for 2014-2020, including the thematic objectives under number 2 - Information and communication technologies 3 - strengthening the competitiveness of small and medium-sized enterprises 8 - the promotion of quality

employment and mobility, 9 - Social inclusion and 11 - increasing the efficiency of public administration (EC, 2014).

The issue of health in its complexity is trying to solve the fundamental documents of the WHO (2000), the EU (EC, 2014) and the Ministry of Health of Czech Republic (Ministry of Health, 2014).

In the Czech Republic, this concept is based primarily on the Long-term program of improving the health status of the population of the Czech Republic "Health for all in the 21st Century" (Ministry of Health, 2014).

Health status is influenced by a variety of biological and social impact and its current level is the product of a long-term historical development way of life, social organization, science and technology development (Müller et al., 1989).

It is clear that developed activities of various entities to promote health, healthy eating and adequate physical activity do not show the expected results. It shows that the measures are needed in all government policy areas and at all levels of government using a range of instruments including legislation.

On health promotion should too participate the private sector (The food industry) and civil society, families and individuals (Kalman et al., 2011).

Health and the health of the population has fundamental importance for the reproductive process and for the development of employment potential and thus for overall country's economic growth and competitiveness of the region, and it is the reflection of the level of development of the society (Vagner, 1996).

Health and public health are intricately conditioned by both positive and negative effects of factors of social, economic, environmental and working environment. The result of these factors is the formation of a potential disease. Determinants of health are therefore the properties and characteristics that influence the presence and development of risk factors for disease (Vilinova, 2012).

Very strong influence of socio-economic determinants of health is currently considered to be objectively established (Marmot, Bell, 2012), which plays an important role level of education. Better educated people can process more information related to their health. When evaluating the structure of causes of death in developed countries shows that

dominate the so-called non-infectious disease- civilization diseases. Civilization diseases we call a group of diseases that are extensively influenced by lifestyle (smoking, reduced physical activity, improper food system etc. and the major changes of the environment (air pollutants, smog, waste, etc.) Many civilization diseases could be prevented or at least reduce the risk of their occurrence. Way of life on the overall health status contributes 50% (CPHR, 2003), some sources suggest higher values.

Behavior, eating habits, physical activity, smoking and alcohol consumption, along with the widespread occurrence of risk factors (high blood pressure, high cholesterol and overweight), affects premature death mannered cardiac, vascular and oncological diseases. A considerable part of the Czech population does not take into consideration lifestyle as a major factor in their health because the incidence of new cases of diseases caused by lifestyle with increasing age increases (Klesla, 2013).

The basic problem of nutrition in developed countries is not lack of food but inappropriate and unbalanced composition of of food, excessive caloric intake, lack of fruit and vegetables or inappropriate food preparation. Growth in the number of overweight and obese indicates a worsening trend level of food (composition, amount of food consumed, but also their distribution during the day), an imbalance of energy intake and output in connection with low physical activity.

This contributes to the development of a number of civilization diseases (cardiovascular disease, type 2 diabetes, stroke, certain cancers, and certain mental illnesses). Obesity increases the risk of hypertension 3x and diabetes 2x, in obesity is a risk of disease of hypertension 6x and diabetes 7-fold higher than in normal weight (VZP, 2010). In the long term, will increase the number of overweight people in a negative impact on life expectancy and a reduced quality of life. While more than half the adult population (57%) in the Czech Republic has a higher than normal body weight, and especially the men and the general elderly population (Ministry of Health in Czech republic, 2014b). Approximately 17% of the adult population suffer from obesity in the Czech Republic (UZIS, 2011).

2.3. Social groups

2.3.1 School as a social group

For many is school just a building, but the term means not only building and institution, but also a community of people who work in it. Over the years, the concept of school has changed and evolved. Nowadays, there are many degrees and types of schools which are working on the development of children and youth for the future grown-up life, whether in professional or personal life. (Pedagogická psychologie, Jiří Mareš)

School class in which the child grows up, forms together with the family environment, the most important part of the social environment. Compared to the relatively narrow environment, which family have had formed, the child suddenly finds itself in a variety of social contacts. This forms a new collective rituals, norms and rules. The child has clearly set time periods for a certain activity and is forced to cooperate in a social group. There is a shift from a game that until now has been the main activity into learning activity.

Activity in school is organized into time slots, which are fixed timetable and under the guidance of a teacher. The child is getting use to subordination to authority, and self-control. According to Řezáč (1998, p. 167) activity orderliness in the classroom microclimate leads to changes in emotional experience and changes in spontaneity. Children integration into a team helps them to get inspired, motivates them to participate in various activities and teaches them to respond to the behavior of other individuals and to build relationships.

He individual is incorporated into the positions in the group (class), which is typically a formal group. The individual is then depending on both pupil's learning abilities and the teacher's evaluation.

Greater importance of the individual is starting to shape up by the end of his/her study, which then profiles preferences among students.

According to Řezáč (1998, p. 206) up to twelve years of age the class group is defined as a very centralized. It is the first heterogeneous teacher dependent integration and it starts to show a significant shift towards autonomy of the class. This reduces both the dependence of the group structure for school success and influence of correlation and classification. The child is profiled according to its merit property because teachers tend to look to their personality according to the merit of the results.

It is important if the child identifies as perceived class pronoun „WE“, then perceives the class very positively, on the contrary, it is the perception of their own class as „THEY“.

Student in the school environment has to accept:

- material conditiones
- physical conditions
- social conditions

The most important from the perspective of this thesis are social conditions and student's ability to adaptat to the relationships in the classroom, such as relations student-student, student-teacher, student-classroom, student-norm.

From time to time it happens that a student suffers from the behavior of his teacher and is affected by badly adapted behavior of his teachers. The teacher may be influenced by many factors, such as teacher's conception of his/her students, confidence in their teaching abilities, etc. The expectations are reflected in the teacher's behavior towards individuals, they influence the formation of collegial relationships in the classroom and overall climate in the classroom and in essence also performance of the child. They can manifest themselves negatively on the child and that undue tension, anxiety symptoms, which result in performance anxiety, fear, nervousness or too excessive reactions to the environment or against each other (Řezáč, 1998, p. 207)

2.3.2 Family as a social group

It is quite natural that the development of children does not affect only the school but also the family as the primary social group, which is a group of people linked by narrow family relationships.

Řezáč (1998, p. 192) comments on the topic of family as follows: *„The family is created on the basis of mutual commitments and common goals and family symbolize the social space that throughout life significantly affects socialization.“*

Other signs defined such as signs common to the family include spatiotemporal indication and its relative permanence, which creates emotional intimacy. In terms of its dominant role can family be according to Procházka (2012, p. 101) conceived as a structured unit which

forms relatively safe, stable environment and space for sharing, reproduction and production of life. This definition suggests that family, hence parents influence the most development and upbringing of the child. All moments, whether relational, physical, socio-cultural aspects influence child from its childhood and shape up, whether directly or indirectly, its values, attitudes and forms his behavioral patterns.

Říčan (1991, in Řezáč, p. 192), claims this defnition is too wide and speaks about family as a whole, which is characterized by an asymmetric relationship between parental care and upbringing by parents and on the acceptance by the descendants.

If we dismantle the family into several levels, we should begin with - according to Řezáč (1998, p. 193) the family which is called the native one. If we take it from another perspective, we can also define family as a model of tradition, culture, in which the individual was born. This state lasts for a relatively long time because the shift occurs only when the individual has established his own family and transfers from the „adult child“ to the „adult partner“ of his parents. Even when older the individual can stay in the position of a child with relation to his parents.

Human development do not affect only the parents but also other family members, where interactions occur at sibling.

The main function of the family is certainly educational function and descendants childcare. It is a unique and unrepeatable opportunity to transmit to their offspring from an early age the values and norms of social behavior, leading them to education, self-education, the right eating habits, personal hygiene, the proper moral values.

It is not exceptional that family functions only in the role of economical hedge or is directed only by a goal without a definition of how to achieve it.

Řezáč (1998) claims that practical psychologists, who are in contact with children agree that the connection between parenting style during childhood and the characteristic personality structures in adulthood is methodologically and methodically very difficult to link.

2.4 International research, organizations and conferences

2.4.1. Health Behaviour in School Aged Children

Abbreviation HBSC stands for ,,Health Behaviour in School aged Children: WHO Collaborative Cross-National study (HBSC) which is a national report, the collaborative study, which deals with health and lifestyle of children and schoolchildren. It is supported by the World Health Organization.

According to the World Health Organization in the Czech Republic: ,,HBSC study is a key source of data on the eleven-life adolescents, thirteen- life children and fifteen- life years children and it is an important tool for prevention efforts in this area. It maps the level of physical activity, leisure time, bullying, alcohol, tobacco, marijuana and other determinants of health in the social context of family, school and peers.“

The aim of the project is to carry out comparative analyzes of the behavioral components of the health of children 11 to 15 years.

The analysis is focused on the following topics (SZÚ, Zdraví a životní styl dětí a školáků, 2013):

- nutrition, dietary trends, ,,body image“
- physical activity and leisure activities
- psychosocial adaptation and mental health
- accidents
- addictive substances

Czech Republic participates in this research since 1994, which is held every four years. The aim is to increase awareness and understanding of health and lifestyle of children and youth and also obtain data for processing analyzes that are relevant to compare so that various policies can be applied, not only in this area.

It is quite clear that the concept of health is closely related to lifestyle. Usually, it includes incorrect, unhealthy diet, poor eating habits and in recent years, it is also the lack of sports activities, consumption of alcohol or tobacco products. With this improper lifestyle then they go hand in hand with chronic diseases.

Pursue the issue of children's health is a high priority, for future generations which will be formed by them, and so it falls on the economic and social aspects of life.
This study outlines the trends over the years and it is possible to improve the weaknesses of this topic.

Research HBSC in the Czech Republic

Investigations carried out in 2010 can be compared with the previous ones in 2006 and 2002, thanks to which we can follow the development of the population in many aspects (Health 2020, National Report on the Health and Lifestyle of children and schoolchildren, 2010).
The research took place in 2014, from which they are processed progressively results. Czech Republic actively participated in this survey.

The following text focuses on selected results of the HBSC study from 2010 (SZÚ, Národní zpráva zdravý životní styl)

According to the results of the research held in 2010, 9 out of 10 children evaluated their health condition positively. The question is whether these kids perceive the hidden risk factors that may make the emergence of other diseases, such as stress, whether at the school or non-ideal conditions in the family background.
Children aged 11 years reported that at least two to three signs of health difficulties, they found an abundance of twice a week. Over the years problems start to appear more and more often. This trend can be observed even among girls.
Generally speaking children are relatively satisfied with their lifestyle and health condition.
Unfortunately, in terms of frequency of accidents, these are the most common cause of death among children and adolescents. Every second schoolboy experiences an injury which must be treated by a doctor at least once a year.
If we take a look at obesity of children, the trend is definitely increasing. Boys suffer from obesity more often than girls. According to HBSC's research boys in the age of thirteen suffer from obesity three times more than girls of the same age. Obesity leads to serious health consequences, skeletal issues, problems with cardiovascular and muscular system. Needless to say that overweight people can also suffer mentally or socially. If obesity is evaluated

subjectively, obviously more negatively it would be perceive by a young girls. There could bbe more reasons behind such as hereditary predisposition, poor lifestyle and nutrition, lack of physical activity. In case of young children the increase of physical activity and change of dietary habits seem to be crucial.

This is due to the fact that an active lifestyle changes rather sedentary, physical activity decreases. Maximum time that children should spend watching television is around 2 hours per day. This activity goes hand in hand with the consumption of sugary drinks, sweets and fast food meals and reduces consumption of vegetables and fruits.

Reserch data show that children certainly exceed the 2 hours limit and this time is extended by the time spent sitting at the computer.

Obesity goes hand in hand with eating habits and time dedicated to eat your meals. Those are the things that should be automated, unfortunately, the opposite is true. According to research in 2010 found that children with increasing age neglecting breakfasts regularly.

Another issue is the comsumption of fruits and vegetables by the children. Fruit is clearly more popular than vegetables. Not even half, specifically about 42 % of the children eat daily at least one piece of fruit. Just for curiosity vegetables is about 10 % less. Girls consume fruits and vegetables more often over the boys.

I think a very topical issue nowadays is the consumption of sweetened beverages such as Coca Cola etc., which is directly linked with children's obesity. Sweetened beverages are more often consumed by boys (approximatelly one quarter), in case of girls it's one fifth.

Although the age limit for consumption of alcohol and tobacco products is strictly defined by law, unfortunately, we encounter this problem even in case of such a small children.

More than 50 % of children in the age of 13 have smoked cigarettes or some other tobacco product. While in case of children in the age of 15 it's already three quarters. 18% of children in the age of 15 are active smokers out of which it is more often girls. There was no visible increase in the number of addicts between years 2006 and 2010.

Most often consumed alcohol is beer. In the age of 15, half of the boys and one third of the girls already have an expecience with alcohol. In case of alcohol there is an increasing trend comparing research data from 2010 against 2006. Increase from 37 % to 47 % in case of boys, 30 % to 40 % increase in case of girls.

30 % of the young people in the age of 15 have already smoked marijuana out of which one tenth used marijuana in the past 30 days.

Dropping not only age, when children encounter with drugs and alcohol, but also the limits, which leads to sexual intercourse and is definitely lower than the statutory 15 years. One fifth of the boys and one fourth of the girls come into this experience younger than 15 years old. Usually these children come from families with poor backgrounds, from single-parent families. Percentage of 14-year-olds, who were bound to respond positively is fortunately quite low. Positively responded 6% of boys and 3% of girls of the total number of respondents.

The research HBSC was examined several indicators of health equity, which coincide with some questions for a thesis.

Question were related to eating habits, physical activity, experience with addictive substances such as tobacco, alcohol or other illegal drugs.

a) The issue of overall health

Everyone perceives his health completely subjective, it depends on how the individual feels and often there is a tendency to compare oneself with others, whether intentionally or not.

Wellbeing is directly linked with feelings of depression, anxiety or with school and family factors as success in a school environment, family relationships and communication with parents.

Girls tend to respond more negatively on the following question: ,,What do you think about your health condition?“ 8% of boys and 11% of girls, in the age of 11, responded that their health conditionis not very good or is particularly bad. In case of respondents in the age of 13 the percentage value rose by 1%, but there was no visible progress for the group of 15 years old.

Among the specified health problems are most common in boys and girls ranks headache or back pain or nervousness and irritability.

On the question of life satisfaction answered adolescents in total with large fluctuations. It is related to family background, relationships, health condition, sports activity. There is a positive correlation between success in school and life satisfaction.

According to HBSC's research about 85% of children feel happy.

Regarding children injuries the most fatal are traffic accidents, drowning, poisoning, falls and fires. The percentage among boys and girls is almost identical. Among the risk factors that contribute to accidents include risky behavior such as drinking alcohol, drugs, aggressive behavior, etc.

According to the global health organization number of children who are obese or overweight increases. As a result of this global problem troubled kids skeletal problems, suffer from poor mental status and possibility be detached from the social system. Predispositions are in genetics, but mainly it is affected by diet and lifestyle. In case of teenage children, boys are obese more often and the lowest percentage of obesity is among thirteen years old girls.

Respondents mentioned in the questionnaire their body weight and height, based on which BMI index was calculated and drawn conclusions.

BMI Index (Body Mass Index) indicates body weight, reveals underweight or overweight contrary, according to body weight and height of a man.

$$BMI = weight/ (height)^2$$

Subjective understanding of your own personality and your own body often does not correspond with reality. Children change their body shape and are not always happy with it. Usually they see themselves very distorted, resulting particularly for girls to exaggerated ideas about their body shape, extreme dieting, which can lead to problems with a disorder such as anorexia or bulimia. Our society acknowledges the thinness among women and is associated with a certain social credit.

BMI value standards (Plevová, 2011)

less than 18,5	malnutrition
18,4 - 24,9	normal
25 – 29,9	overweight
30 – 34,9	obesity I. degree
35 – 39,9	obesity II. degree
more than 40	obesity III. degree

BMI formula is more complicated in case when applied to a children. Especially because children are rapidly changing their height, which is an important parameter in its calculation. It is therefore necessary to convert these values into graphical form, where BMI value counts as the ordinate and the age is taken as the horizontal axis. BMI value is determined based on its position in the reference area. The upper and lower values are given by the curves are referred to as „weight percentiles“ (Montignac, 2003, s. 14)

b) Eating habits

Eating is related to a healthy lifestyle. Nutrition is closely connected with healthy life style. Diet composition influence man's health and children's ability study and to focus. It also affects fluctuations in fat, sugar and cholesterol in the blood and leads to obesity.

One of the first topics investigated by HBSC research was regularity of breakfasts. Having a breafast regularly is more typical for boys. This trend decreases with age. Just for comparison 92 % of children in age of 6-11 have their breakfast regularly while in age 12-19 it's only 77%.

Another factor is fruit consumption. WHO recommends to eat 2- 3 pieces of fruit a day.

Underlying issue is sweets and sweet beverages consuption.

Sweets are rich in calories but from nutrition point of view it doesn't have any value and it disrupts regularity of diet regime. Same problem is with fast foods which are getting more and more popular over the last decade. Their products contain chemically modified sugar, large quantity of fats, but the nutrition value is very low. This could result in addiction to sugar. There is a visible trend for boys with inceasing age we can observe higher consumption of sweets.

Sweet beverages consumption leads to obesity and related health issues. One third of the survey respondents claimed to consume Coca-Cola or other sweet beverages daily. Boys consumes sweet drinks more than girls.

This is also closely connected to dental hygiene. Sweet beverages consuption leads to dental cavities in combination with improper dental hygiene. Hereditary predisposition could be influenced by proper dental hygiene and good eating habits. Results of dental research show that girls pay more attention to their dental hygiene since they connect this with their looks.

Weight loss is a particular problem among teenage girls, which often don't solve the problem of weight by change of their eating habits but overall food intake. This results in starvation and there is a risk of mental illnesses linked with it. Puberty changes children's physical dispositions and thus they more often notice changes in their weight and appearance. Nowadays, there is a trend of thinness which force girls to thin figure. This may lead to a medical issues, both physical and psychological. This is more typical for girls particularly in age of 15 it's 25% of girls and only 10% of boys.

c) Physical activity

School age children definitely don't have enough physical activity. This is well known issue and it becomes a global problem.

Physical activity goes hand in hand with overall health condition, they way people look, it brings a lot of positively percived emotions that promote good mood, progressively contributes to the quality of life and is inseparable part of social life. Typicaly for girls, sport is the way how to look good.

According to HBSC research girls become less active in terms of sport with increasing age. 50 % of the girls perform some physical activity less than 5 days a week. Boys increase their activity in the age of 11-13 and the in the age of 15 the increasing trend drops back to the same level as in the age of 11.

The way children spend their free time tends to change from active to passive. This is typicaly time spent by watching TV or spent with their computer. It supports the sedentary lifestyle that definitely does not fit into a healthy, active lifestyle. More than 50 % of children spend more than two hours a day watching television. Both boys and girls spend approxiately equal time wathing TV the only difference is in 13 years olds. Research shows that more than 50 % of the respondents spend more than 2 hours a day with their computer. This is more typical for boys rather than girls.

d) Smoking

According to WHO statistics 5.4 million people die prematurely because of smoking, especially for diseases associated with cardiovascular problems or cancer. Up to 90 %

smokers started to smoke younger than 18. It is very unlikely to become addicted or even start after 18. There is no smoking related supporting program as a part of preventative program supporting healthy lifestyle.

The reason for this is higher and higher tobacco tolerance and its availability within our society. Children start to smoke very young. One out of four boys and one out of seven girls in the age of 11 have already smoked tobacco.

e) Alcohol consumption

Same as cigarettes, alcohol also significantly contributes to cardiovascular diseases, neuropsychiatric diseases and tumors.

Social problem of alcohol is even higher tolerances than cigarettes. This attitude breaks down barriers for the children and adolescents who take take over from their parents. Whatever the legal age or not, they take alcohol as part of the celebrations and contact with friends. More than half of the children in the Czech Republic experience alcohol in the age of 13.

3 out of 4 children in age of 15 drink alcohol at least once a month no matter of the gender.

In paralel this also leads to a drug consumption.

The following text focuses on selected results of the HBSC study from 2014

If the result of the study we look from the perspective of pupils, just children in the Czech Republic evaluate their life positively. Unfortunately, the reality is more different in terms of exploration data identified. Czech Republic occupies one of the last places in both evaluated categories.

Available data show that at least 4 of the 10 children visited last year a doctor due to injury and were treated. (WHO, HBSC, 2014)

80% of children suffer from a lack of physical activity, especially because they spend their leisure time activities on the computer or watching television. The results from 2014 showed that the time spent on the computer increases with age.

Regarding obesity, they do not deviate to some Czech children the average of other countries. Here it was found that eleven years respondents suffer from obesity in 29%, 28%

of children in the age of 13 and age of 15 it is 23% in the case of boys. Girls suffer from obesity roughly of half.

Larger swing the achievements results were recorded in the number of children breakfast. Approximately 35% of eleven years old children, 45% of thirteen years old children and 50% fifteen years old children do not eat breakfast regularly. Czech Republic is significantly below the international average HBSC. The fruit consumption, the results did not differ in comparison with other countries, but was found to significantly lower consumption of vegetables among Czech children.

Above-average result shows that the majority of czech children clean their teeth more than once a day. This result is in contrast above average HBSC study.

A negative finding was that czech children start significantly earlier in comparison with the international average drink alcohol, smoke cigarettes and marijuana.

According to the principal investigator of the study HBSC Czech Michal Kalman is evident from the result, that the long-term context and in international comparison the Czech Republic is not doing well, even in a number of indicators that are tracked in the HBSC study. (Univerzita Palackého, Press release)

Age of early adolescence is of key importance from the perspective of an individual lifestyle in adulthood.

2.4.2 The National Strategy on health promotion and disease prevention

From the viewpoint of prevention of non-infectious chronic diseases arises action plan for proper nutrition and eating habits. This realization is very important for the economical perspective of the Czech Republic, because it affects the health of its population. The aim is to gain control and influence aspects of life in our country. The most important group that most influences the economic situation is a group of children, adolescents and middle aged people. If we take a look at the situation globally, the Czech Republic is on a below-average position in comparison with the European Union with regard to the expected life expectancy and life expectancy in good health. (Zdraví 2020- Národní strategie ochrany a podpory zdraví a prevence nemocí, 2015).

Nutrition issues:

- unbalanced diet, a low energy value,
- large salt intake,
- high consumption of animal fats,
- excessive consumption of sugar,
- absence of fruits and vegetables.

Unfortunately, in most aspects, which are problematic in the diet, the Czech Republic holds leading positions. The population can be divided into groups which are far more subject to environmental influence or trends in the diet. These can include children who are susceptible to advertising and can be easily influenced when choosing their diet.

National Action Plan on proper nutrition and eating habits is part of the National Health Programme 2020- National Strategy on health promotion and disease prevention (Zdraví 2020- Národní strategie ochrany a podpory zdraví a prevence nemocí, 2015).

The Action Plan cooperates with European documents such as the Action Plan for the implementation of the European strategy for the prevention and control of non-communicable diseases and develops strategies on food safety and nutrition 2014- 2020 (Strategie bezpečnosti potravin a výživy 2014- 2020, 2013).

It is based on documents that fight against obesity and overweight in Europe, as the European Charter on Counteracting Obesity and the European action plan against child obesity 2014- 2020 (Zdraví 2020- Národní strategie ochrany a podpory zdraví a prevence nemocí, 2015).

2.4.3 World Health Organisation

Regions that fall under management in Europe WHO, boasts a high standard of health of children and their good health.

WHO policy on the care of children and adolescents is that every child should have the opportunity to live healthy and fulfilling lives (WHO, 2016).

Priorities:

- children have right to participate in shaping their strategies for health
- investment in the protection of children and adolescents
- developing good relations in organizations that improve the health system
- protecting children and young people from the effects of environmental influences

2.5 Principles of proper nutrition for children and adolescents

Differences between diet for adults and children is not so specific for children it mainly differentiates in the portion size (Hanreich, 2000, s. 12). It is especially important to look at the quality of food.

As already stated above, eating habits are determined and shaped from early childhood in family environment in which children grow up. This already determines health conditions, whether a child will protect against health problems, such as dental cavities, obesity, exceptionally diabetes which can result to heart problems later in adulthood, high level of cholesterol, cardiovascular problems, problems with the skeletal muscles, etc.

At any age vitamins and minerals are essential for the proper development of children and adolescents. Variety and nutrition value of the food is important, which would in particular avoid sausages, fast fooods, fried foods, spices and salt.

Proper healthy diet should in two-thirds consist of plants. Milk or dairy products are vital for children in their growth.

Principles of proper nutrition:

- regular drinking regime,

- regular nutrition regime.

2.6 Children's obesity

Obesity prevention should begin even in the period before and during pregnancy. Research proved that the baby is getting used to the mother's diet during pregnancy, such as sugars and fats. (Fořt, 2004, s. 45). It is mother's responsibility to pay special atention to her diet during the nursing perior.

One of the riskiest period when children are at risk of obesity is the period of puberty. When child is about ten years old its body begins to be controlled by hormones. It influences physical appearance, but also the mood and mental health.

Experts identified as a major cause of obesity mainly that even parents do not have the proper knowledge of healthy eating.

Obesity risks (Fořt, 2004, p. 42):

a) obese parents,
b) at least one parent has following issues: LDL cholesterol, lipid and TAG, hypertension or diabetes,
c) parents tend to inactive or sedentary lifestyles,
d) the child's birth weight is more than 4 kg,
e) the weight gain of the mother during pregnancy is greater than 12 kg,
f) the child was not breastfed,
g) mental and physical aspect of the child is passive.

Causes of obesity (Fořt, 2004, p. 29):

a) genetic factors:

Although we can talk about some obesity in case of unborn babies the main consequence of childhood obesity is the lifestyle of the family where the child grows up and learns its own habits. Getting the bad diet examples predisposes children to obesity.

b) improper dietary habits, overeating

Wrong eating habits acquired in the family predispose a child to obesity risk. Czech families have often improper eating habits (typical Czech cuisine). The same may be the example of the USA where people prefer fast foods and therefore are at the top position in terms of numbers of obese children in the world.

c) inactive and sedentary lifestyles

The growing trend of IT technology combined with the way people spend their free time (TV, etc.) is becoming a great problem because it reflects on the regularity of physical activity. Children tend to take advantage in usage of technologies and loose their interest in sports. Children who are overweight or obese tend to a sedentary lifestyle, which definitely doesn't do any good to their already bad physical condition.

d) commertial influence

Children tend to be infuenced by commetials or environment pressure, whether it's a school group or any other group. They try to follow the trend of the times.

2.6.1 Obesity trend in the World

According to (Montignac, 2003, s. 20) the number of obese children is increasing worldwise. USA is number one with their 22% obese children in age of 6-11, but also France grow in this trend rapidly.

We can distinguish two types of obesity:

a) massive obesity,
b) moderate obesity.

Over the decades, there has been also found that storing fat in the bodies of children varies, but more often the fat is stored in the upper parts of the child's body. It is called

Hyperinsulinism which is a special metabolic disorders, which indicates risk of diabetes and problems with blood circulation.

2.7 School projects to support children's health

On projects that deal with healthy lifestyle cooperate together three ministries of the Czech Republic, particularly Ministry of Agriculture, Ministry of Education, Youth and Sports and the Ministry of Health with regard to existence if the future generations.

In projects dealing with the health of children we can include European projects such as: „Fruits and vegetables at school“ or „Milk in school“. WHO's project ,,Health-promoting school" formerly known as the Healthy School.

a) Project ,,Health-promoting school“

The project ,,Health-promoting school" works preventively and influence factors that affect human health and prevention of various diseases. Project targets on primary schools and kindergartens. (Státní zdravotní ústav, 2016).

For schools that are involved in this program, the priority is that health does not mean only absence of disease but it's a combination of factors interacting together such as biological, psychological or social factor. This holistic approach is also the philosophy of WHO.

It is important that children understand the value of their health and take good care of it, especially from nutrition and personal hygiene point of view. The coordinator and supervisor of the program in the Czech Republic, the National Health Institute and the National Programme falls within the School Network for Health in Europe (Státní zdravotní ústav, 2016).

b) Project ,,Healthy teeth“

The aim of the project,, Healthy Teeth "is to improve the dental health of children and young people. Teach them the proper dental hygiene and improve their hygiene habits. The preventative program is trying to make all primary school children to visit the dentist regularly (Zdravé zuby).

c) Project ,,Fruits and vegetables at school“

The aim of this project is to get children accustomed to consume fruits and vegetables, which contributes to a healthy diet components and prevention against the occurrence of childhood obesity. Fruits and vegetables are subsidized or supplied free to schools. Fruit and vegetable consumption is recommended by the Ministry of Health. This mainly include fruits or vegetables which can be found in our climatic conditions.

Of consumption products are excluded, where the added sugar, salt, fat or sweeteners (Státní zemědělský intervenční fond).

d) Project ,,Milk in school“

School milk project operates under the Common Agricultural Policy, along with the program "Fruits st school" Milk projrct has been operating for over 30 years and provides dairy products for school children. The goal is to provide children with the positive approach to food, which contributes to their health and eating where chldren get one piece of dairy products per day (Ministerstvo zemědělství, 2016).

3 THESIS OBJECTIVE AND METHODICS

3.1 Thesis Objective

The general objective of this thesis is to define the habits of children aged 11-13 years in the field of not only eating habits, as well as physical activities, their bodily sensations and experiences with drugs in intentionally selected cities. Chosen were ,,New Cities“ - Nové Město na Moravě and Nové Město nad Metují in the Czech Republic, Nové Mesto nad Váhom in Slovakia and Wiener Neustadt in Austria.

Sectional Objectives:

- compare lifestyle differences in individual age categories,
- compare differences in terms of gender issues,
- compare the differences in lifestyle from the perspective of individual cities and countries.

3.2 Methodics

For dissertation research methods were used:

- professional literature review,
- survey,
- case study,
- the comparative method,
- Pearson´s coefficient.

a) professional literature review

The theoretical part is based on professional literature data mainly Slovak and Czech authors who deal with this issue. An important underlying documents and research conducted by international comparison and the Czech Republic is a partner such as The Health Behavior in School-aged Children (HBSC), Organisation for Economic Co-operation (OECD) or documents from World Health Organization (WHO).

b) survey

Using questionnaires is one of the most common methods of exploration.

We can distinguish two types of research, namely primary and secondary.

Primary research works by collecting data in the field. It is done so on the basis of the work of the researcher or the hiring of secondary researcher who performs research.

- Qualitative research

  Efforts to explore the issue in depth, detailed analysis of the problem by correspondent.
- Quantitative research

  Prefers maximum number of respondents regardless of the relevance of the result. Great base matters. Number of interviewed respondents is often several thousands.

  This type of research is more expensive and comparing to qualitative research is more demanding from the time perspective.

Well-developed questionnaire should by Vojtisek (2012, p. 28) contain following:

- ask clear questions that have definite answers,
- do not ask one question to multitask,
- questions should be asked in plain language with regard to the population for which it is designed questionnaire,
- avoid prestigious issues,
- do not use leading questions.

The survey used in this thesis were use closed questions. It was chosen narrower age group of children of primary school age, namely 11 to 13 years, both in primary schools and at lower secondary school. Locations where the questionnaire was filled were selected in the Czech Republic, Slovak Republic and Austria.

The questionnaire contained 26 questions and was strictly anonymous of which respondents were notified. Questionnaire was based on international project ,,Health Behaviour in School- aged Children.“

Filling the questionnaire was guided by precisely pre-given instructions that were uniform in all schools. Congruent was also time allocated for completing the questionnaires. Distribution of questionnaires took place during the autumn months of 2015.

Among the questions descriptive statistics which specified the respondent was a question of age, sex, weight and height of the respondent. This was followed by six questions that addressed the question of the overall health of an individual, five questions about eating habits, inquiring about hygiene habits, six questions on physical activity among children and six questions that explored whether children have experienced any addictive substance.
Questionnaires were filled out according to the instructions, incomplete or incorrectly completed questionnaires were excluded from the research (Appendix 2)

c) case study

The case study is qualitative analysis. Examines the case in terms of connections and external context. It tries to define the factors that contribute to the dynamics of the case.
„A case study is to reveal the factors which influence the dynamics of the case," (Vojtíšek, 2012, p. 36).

According to Vojtíšek (2012) we can divide the case studies on several types:

a) personal case study,
b) a study of the community,
c) study of social groups,
d) studies of organizations,
e) programs exploration, events, roles and relationships.

d) comparative method

Comparison will use to a particular comparison base, which is taken as a norm for research. We define the differences in outcomes, which are considered the same content, the quality, the same content. Result of the comparison is shown either in absolute value or in relative numbers, percentages (Tichý, 2012).

e) statistic methods: Pearson´s coefficient of contingency

According to Minarik (2009), you can calculate the average square deviation by which we can remove the influence of the extent file. Imperfections mean square deviation is that it is not taken into account the varying size of the contingency table. Therefore been created

called coefficients of contingency, considering that these imperfections. In these thesis was used the Pearson´s coefficient of contingency.

Values Pearson coefficient contingency is greater than or equal to zero, but they are smaller than one, thus the Pearson coefficient will never have a value equal to one.

$$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$$

Source: Popisná statistika, Minařík 2009

3.3 Description of research data

Organization ,,New Cities of Europe“ associates 37 cities in total. They can be found in Germany, Austria, Czech Republic, Slovakia, Poland, the Netherlands and Hungary (Neustadt in Europa, 2016).

Meeting of representatives are held every year regularly since 1979.

Meeting is held every time in a different city with aim to establish friendly relations between the „New“ cities and learn about their traditions. Most of the „New“ cities are located in Germany.

Since I was born in one of the previously mentioned „New city“, particularly Nové Město na Moravě, I focused my research to the students of selected schools in the „New cities“. Two of them, Nové Město na Moravě and Nové Město nad Metují are situated in the Czech republic, another one Nové Mesto nad Váhom in Slovakia nad the last one Wiener Neustadt in Austria.

Analytical method for the practical part of the thesis will be a questionnaire survey, which investigated health capital, hygiene habits and experience with drugs for students of primary schools and lower secondary school the same year in selected cities. Chosen were Nové Město na Moravě and Nové Město nad Metují in the Czech Republic, Nové Mesto nad Váhom in Slovakia and Wiener Neustadt in Austria. Questionnaire was anonymous, so that children didn't have to fear any punishment for honest answers. Every questionnaire was completed consistently anonymously.

4 RESULTS

4.1 Characteristics of schools and pupils

Analytical instrument of survey of health capital and health of male and female pupils in selected ,,New Cities“ was chosen a method of questioning. The questionnaire included questions at the beginning of descriptive statistics which allow to divide students by gender. The schools were selected to represent indicators with different values (different locations, the difference in size of cities, the use of prevention programs, extracurricular activities). Has been selected four ,,New Cities“ located in the Czech Republic, Slovak Republic and in Austria.

Nové Město na Moravě

Nové Město na Moravě is surrounded by Vysocina region in the Czech Republic and has a little over 10,000 residents including adjacent municipalities.

In Nové Město there are two elementary schools and one lower secondary school. The research took place on the lower secondary school where students in the age of 11-13 were selected. The school promotes science and technology in the classroom and is involved in projects that promote the natural and technical fields, supports mobile devices and IT technologies in teaching, developing computer awareness among tudents with conferences ,,Computer in school" and teaches students with GIS software. The school is exceptional specializing in sports classes that allow students with sporting talent who professionally specialize in sport, to combine both, their sporting ambitions and academic requirements.

Nové Město nad Metují

Second city chosen was Nové Město nad Metují in Náchod district located close to Hradec Kralove. The number of residents is pretty much the same, 9500 citizents. There are two more primary schools comparing to Nové Město na Moravě but there is no lower secondary school. For the purpose of this reaseach I have selected one of the primary shools, which caught my attention by its profile. This school is involved in many projects and activities. For example following projects: ,,Milk at school“, ,,Fruits and vegetables at school“, or projects for prevention from internet and social networks threats. They also participate in project

,,Health promotion projects or what we can do to improve well-being at school“ and project ,,Happysnack“, which deals with healthy snacks for children. School was certified as „Active School“.

Nové Mesto nad Váhom

Nové Mesto nad Váhom lies in Slovakia, specifically in Trenčín Region. Compared to the previous two selected cities in the Czech Republic there are over 20 000 inhabitants, so it is much larger in terms of population. There are three elementary schools and two high schools. For the research was selected one of the elementary schools. Slovak elementary school leads children the way of environmental issues and encourages children in sporting activities. It is a school designed to support natural sciences and mathematics.

Wiener Neustadt

Wiener Neustadt is a statutory town and district in Lower Austria. It is located south of Vienna, about 50 km away. From the selected cities this one is the largest, involving over 40,000 people. School in Austria appeals especially to the physical activity. It supports children in sporting activities, especially skiing or swimming. It provides them with backgrounds in terms of free time, like after-school clubs and affords them the possibility of preparing snack lunch or pauses in the comfort of your home.

In the survey were chosen students aged 11, 12 and 13 years, which corresponds to 6th - 7th grade elementary school or lower secondary school. Students were divided by gender in the results of the questionnaire, and also according to the country from which they originate.

Overall, 251 questionnaires were distributed, of which 6 were excluded as those were not filled in completely, which represents about 2,5% of unusable research material. For the research purpose there was 245 questionnaires used.

A: School No. 1, Czech Republic

B: School No. 2, Czech Republic

C: School No. 3, Slovakia Republic

D: School No. 4, Austria

4.2 Results of research in schools

As previously mentioned the research results were devided:

- by gender (boy, girl)
- by the town where the respondent got born (Schools are under division lettered)

As the research unit has been taken classes of the same grade in selected schools, although differing in the number of children, and what percentage representation of girls and boys involved. Most pupils were in schools A and C. Always predominated in the number of children girls over boys, the least the boys were in school D (see Tab. 1, Table 2).

Table No. 1: Description of research data

	Boys	Girls	Total
School A	32	35	67
School B	25	34	59
School C	31	34	65
School D	22	32	54

Table No. 2: Description of research data

	11 years		12 years		13 years	
	Boys	Girls	Boys	Girls	Boys	Girls
	%					
School A	28	26	34	43	38	31
School B	24	21	40	35	36	44
School C	26	24	42	32	32	44
School D	32	22	36	38	36	41

A set of selected questions could be divided into several subsets. Always at one question in the subset was calculated Pearson coefficients of contingency, to establish a correlation between indicators.

question 1-5	Quality of life
question 6-11	Eating habits
question 12-13	Sports activities
question 14-17	TV, DVD, Internet
question 18-21	Alcohol and tobacco

1. QUESTIONS ABOUT QUALITY OF LIFE

Evaluation of question No.1: ,,How do you evaluate your health condition?“

The most satisfied with their lives are according to research in general girls. Of the 135 girls in research reported 51 (38%) of girls option ,,is excellent“. The same option ,,is excellent“ chosen only 31 boys (28%) of 110 boys.

In scholl A (43%), B (35%) and D (40%) of the girls consider their health condition to be perfect. The only exception is school C in Slovakia where it it 7% of the boys. The most satisfied seem to be the girls in school A. Out of 35 girls 43% consider theit health condition perfect.

Only in two cases respondents stated their health condition to be bad. This was more visible in school A with 12,5% of the boys and in school C with approximately 3% of the girls.

Most of the respondents consider their health condition to be good.

(see graph no. 1)

For interest, if between gender in selected answers is a some dependence was calculated Pearson coefficient of contingency.

Pearson's contingency coefficient (by sex) (see table. No. 3, No. 4, No. 5)

Table No. 3: The observed frequencies in a contingency table

	Boy	Girl	
,,Is excellent“	31	51	82
,,Is good“	66	70	136
,,Not so good"	11	13	24
,,Bad"	2	1	3
	110	135	245

Table No. 4: Theoretical frequency in a contingency table

	Boy	Girl	
,,Is excellent“	36,82	45,18	82
,,Is good“	61,1	74,94	136
,,Not so good"	10,8	13,2	24
,,Bad"	1,35	1,65	3
	110	135	245

Table No. 5: Values for calculating the square contingency

	Boy	Girl	
,,Is excellent“	0,92	0,75	1,67
,,Is good“	0,39	0,33	0,72
,,Not so good"	0,004	0,003	0,007
,,Bad"	0,3	0,26	0,56
	1,624	1,343	2,957

$$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(nij - n'ij)2}{n'ij}$$

$$x^2 = 2{,}957$$

The result is 2,957 square contingency.

$$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$$

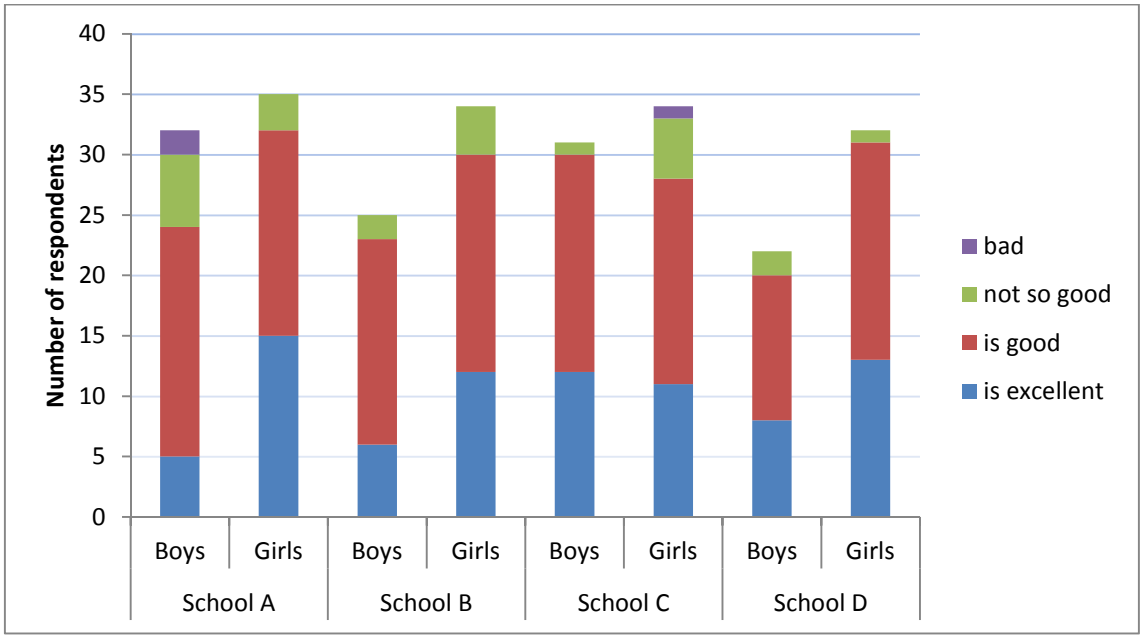
P = 0,109

The value of Pearson coefficient of contingency between gender of students is approximated 0,11.

The above calculated index (Pearson coefficient) reaches 0,11, which is very low.

This means that the dependence between the selected answers and the respondent sex, if it's a boy or girl, is low.

Graph No. 1: ,,How do you evaluate your health condition?“



Source: data from the questionnaire, own processing

Evaluation of question No.2: ,,How of often did you have following obstacles in the past six months?“

Generally suffer from headaches more girls than boys. The whole half of the girls identified the possibility that they have a headache ,,more than once a week“ or ,,about once a week“. But boys chose this option only in 27%.

Feeling of hopelessness, irritability or bad mood suffer ,,more frequently that once a week“ or ,,about once a week“ also more girls (39%) than boys (35%).

Boys most complained of fatigue, which could explain a number of sports in schools that make it more support. 54% of boys marked possibility of fatigue and exhaustion, while the girls 27%. Boys marked the 45% that suffer ,,more than once week“ or ,,about once a week“ nervousness, tension and difficulty falling asleep, girls in 40%.

Conversely none of respondents indicated that they had some difficulties in terms of malaise, dizziness more frequently than ,,once a month (this variant reported from a total of 245 only 10%), others chose ,,rarely or never“. Even the possibility of stomach pains elected children rather negative assesment, only 6% of the total number of all schools voted opportunity ,,about once a week“, other ,,about once a month“ (24%), the rest of children negated this option ,,rarely or never“.

(see tab. No. 6)

Girls in school suffer the most (25%) from feelings of depression, irritability or bad mood with the frequency of the response ,,more than once a week" and headaches ,,about once a week" of more than one third, while the boys (47%) most reported fatigue or exhaustion ,,more than once a week." For girls in school A to a greater extent (34%) occurred option that is bothering nervousness, tension or difficulty falling asleep ,,about once a week" or to the same extent ,,about once a month."

Boys at school B most often (44%) mentioned problem of nervousness and difficulty falling asleep with a frequency ,,more than once a week" and back pain ,,about once a week" (36%). Girls struggling with headaches, about 25% of girls said frequency ,,more than once a week. "

At school C bothers most girls feeling bad moods and irritability (41%) ,,more than once a week"or back pain (29%) ,,about once a week" and the head of more than one-third ,,about once a week". Boys cited most frequently (38%), fatigue ,,more than once a week."

Around 30% of girls in school D suffered from headaches about once a week or fatigue (28%) ,,about once a week." The boys checked the possibility that suffer from nervousness or difficulty falling asleep about once a week, almost a quarter.

Conversely, none of the respondents indicated that they had some difficulties in terms of malaise, dizziness more frequently than once a month (this variant reported from a total of 245 children, only 10%), others chose ,,rarely or never". Even the possibility of stomach pains elected children rather negative assessment, only 6% of the total number of all schools voted opportunity ,,about once a week", other ,,about once a month" (24%), the rest of the children of this option negated option ,, rarely or never."

Boys most complained of fatigue, which could explain a number of sports in schools that support it more.

Evaluation of question No. 3: „How do you concider your life?“

Another question in the questionnaire children assessed was how do they concider their life subjectively. The higher the number on a scale from zero to ten tagged, the better evaluation.

Using the data show that children are satisfied with their lives, they feel good. Non of the respondents evaluated his life with zero which stands for ,,the worst."

Happiest children that marked the value ,,10 - Best Life" girls were from school B (38%), the boys from school C (36%) and boys from school A (34%) (see table No. 7).

Table No. 7: „How do you concider your life?" (in %)

	School A		School B		School C		School D	
	boys	**girls**	**boys**	**girls**	**boys**	**girls**	**boys**	**girls**
10	34	29	32	38	36	29	23	25
9	41	46	24	35	19	35	55	47
8	19	11	8	9	19	15	9	9
7	6	9	12	6	16	3	5	6
6	0	0	8	3	3	9	9	13
5	0	6	16	9	6	9	0	0
4	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

Source: Data from the questionnaire, own processing

(Results were rounded)

Evaluation of question No. 4: ,,How many times have you had such an accident during the last 12 months so that it had to be treated by a doctor?“

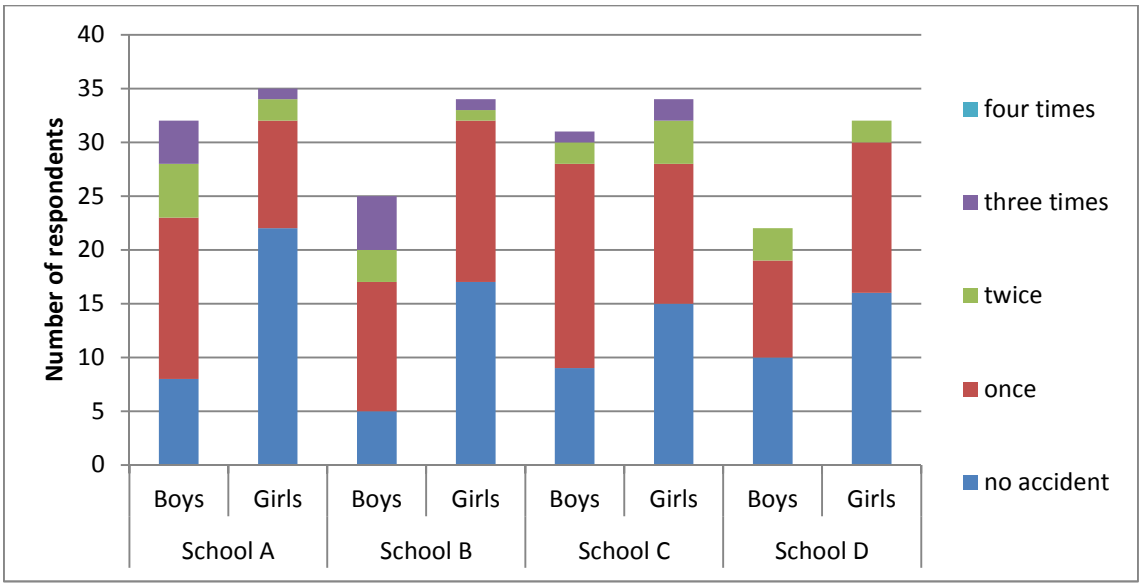
The survey shows that girls are more careful, and in all four schools every time exceed the percentage of boys who indicated that the past 12 months had an accident.

Specifically, 52% of girls marked, that ,,I didn’t have in the last 12 months an accident or injury“ and 39% of girls chose the option ,,once every 12 months“. The boys didn’t have any accident within 12 months in 29% and ,,once a year“ said 50% of bosy.

In case of school A 63% of girls (25% of boys) didn't have accident in the past 12 months, in case of school B it was 50% of girls (20% of boys), school C 44% of girls (29% of boys) and school D 50% of girls (45% of boys). The smallest differences in percentage of boys and girls was at school D, where the difference was only 5%. The highest value in this perspective was in case of school A, where nearly 63% of the girls did not have any accident during the past 12 months. The option twice a year, had to be treated by a doctor, checked mostly negligible

percentage of children. The highest incidence of accidents ,,three times a year“ was in school B, where it was only 20% of boys.

Graph No. 2: ,,How many times have you had such an accident during the last 12 months so that it had to be treated by a doctor?“



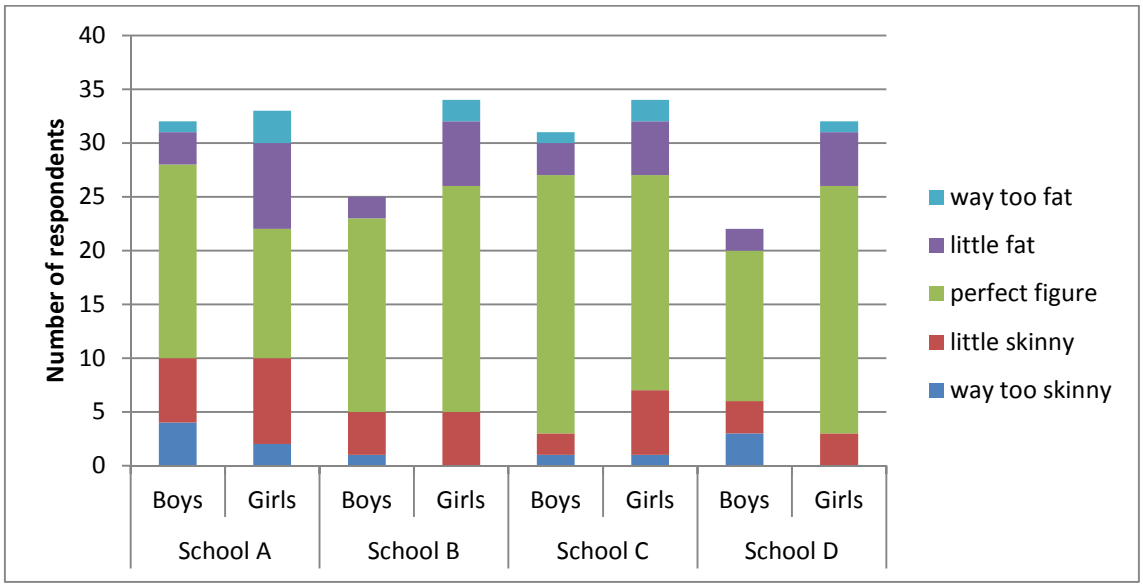
Source: data from the questionnaire, own processing

Evaluation of question No. 5: ,,What is in your opinion on your figure?“

The question dealt with its own opinion regarding children’s characters and how children themselves subjectively evaluated.

Most often children responded that their figure is just right. Girls tend to label figure too thick, the most in school A, where it was 23% and at school B it was 18% of the girls. Schools C and D school had similar results, this way felt about 15% of girls. In case of boys, the percentage was negligible, mostly it was an individual among boys, zero values in this category were in schools B and D.

Graph No. 3: „What is in your opinion on your figure?“



Source: data from the questionnaire, own processing

2. QUESTIONS ABOUT EATING HABITS

Evaluation of question No. 6: „How many days a week do you have a breakfast?“

Most eat breakfast every day of the week, kids from school B in more than 61%. This percentage in school B consists largely girls (65%). In school D having breakfast every day half of girls and more than half of boys. The diameter of students who eat breakfast every day, it is absolute. In school A it is in girls more than half, the boys are doing considerably worse (38%). Overall there every day, 45% of children eating breakfast.

Most neglect breakfast kids from school C, especially boys. At school C it is 47% for girls and 39% boys. Overall there eating breakfast daily 43% of children. The rest of the children eating breakfast irregularly, randomly a few times a week. (see graph No. 4)

Pearson's contingency coefficient (by sex; see table No. 8, No. 9, No. 10).

Table No. 8: The observed frequencies in a contingency table

	Boys	Girls	
,,5 days“	50	72	122
,,4 days“	7	11	18
,,3 days“	18	10	28
,,2 days“	13	16	29
,,1 day“	4	11	15
,,never“	18	15	33
	110	135	245

Table No. 9: Theoretical frequency in a contingency table

	Boys	Girls	
,,5 days“	54,76	67,22	122
,,4 days“	8,08	9,92	18
,,3 days“	12,57	15,43	28
,,2 days“	13,02	15,98	29
,,1 day“	6,73	8,27	15
,,never“	14,82	18,18	33
	110	135	245

Table No. 10: Values for calculating the square contingency

	Boys	Girls	
,,5 days“	0,41	0,34	0,75
,,4 days“	0,14	0,12	0,26
,,3 days“	2,35	1,91	4,26
,,2 days“	0,00003	0,00003	0,00006
,,1 day“	1,11	0,9	2,01
,,never“	0,68	0,56	1,24
	4,69	3,83	8,52

$$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(nij - n'ij)2}{n'ij}$$

$x^2 = 8{,}52$

The result is 8,52 square contingency.

$$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$$

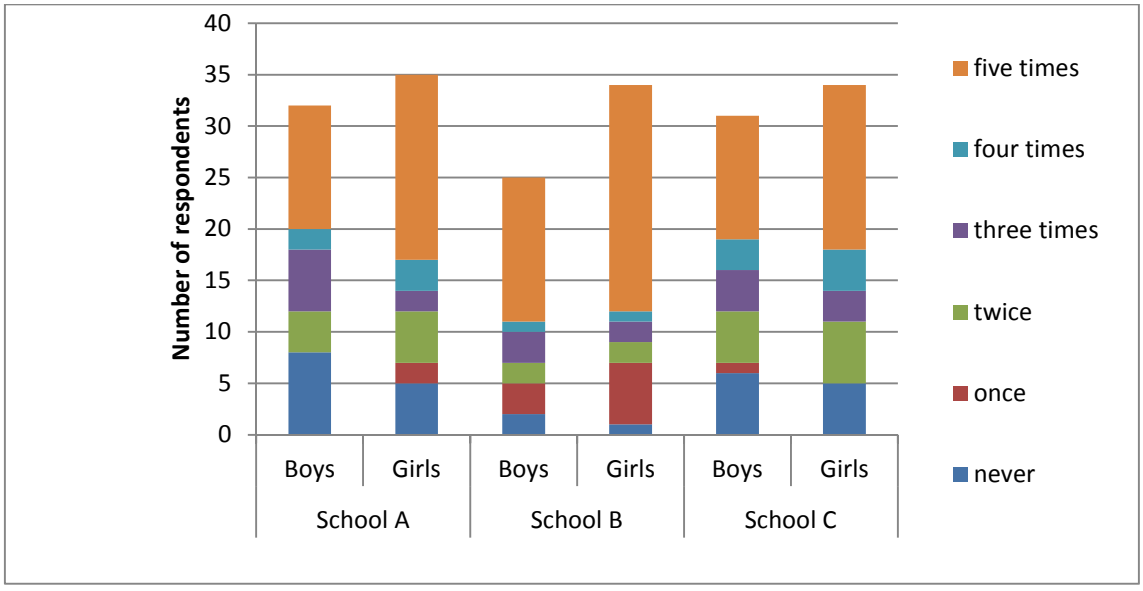
P = 0,18

The value of Pearson coefficient of contingency between gender of students is approximated 0,18.

The above calculated index (Pearson coefficient) reaches 0,18, which is very low.

This means that the dependence between the selected answers and the respondent sex, if it's a boy or girl, is at the free level and low independence.

Graph No. 5: „How many days a week do you have a breakfast?“



Source: data from the questionnaire, own processing

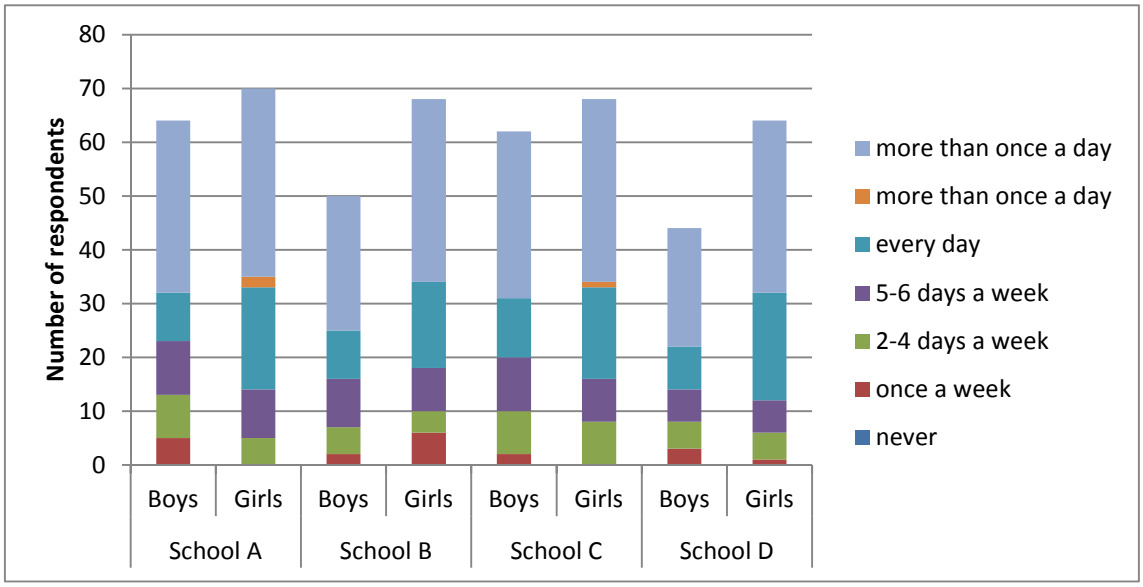
Evaluation of question No. 7: „How many days a week do you eat fresh fruit?“

According to the survey vast majority of students consume fruit several times a week. The possibility that it consumed no one selected option "never".

In a general overview, we can say that eating fruit more often girls than boys. Specifically, it is a high percentage, school A 55% of girls, school C 50% of girls and 47% of girls in schools B. (see graph No. 6)

According to WHO recommendations it would be ideal that children ate fruit at least 2-3 per day.

Graph No. 6: „How many days a week do you eat fresh fruit?“

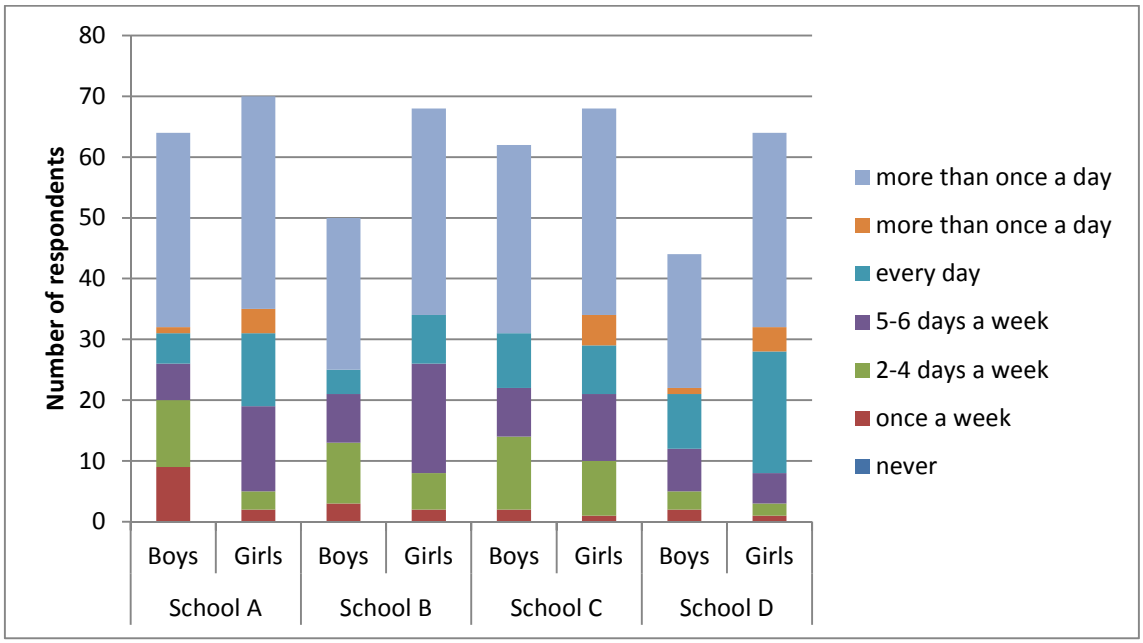


Source: data from the questionnaire, own processing

Evaluation of question No. 8: „How many days a week do you eat vegetables?“

The research shows that children prefer fruit over vegetables. 30% of boys from school A eat vegetables once a week. In other schools, this option was rarely selected. The most significant number of children who eat vegetables every day, can be seen on the chart in the group of girls in school D, where nearly 63% of girls behind them in school A with almost 35% of girls. The boys have marked this option, the most in school D (41%).

Graph No. 7: „How many days a week do you eat vegetables?“



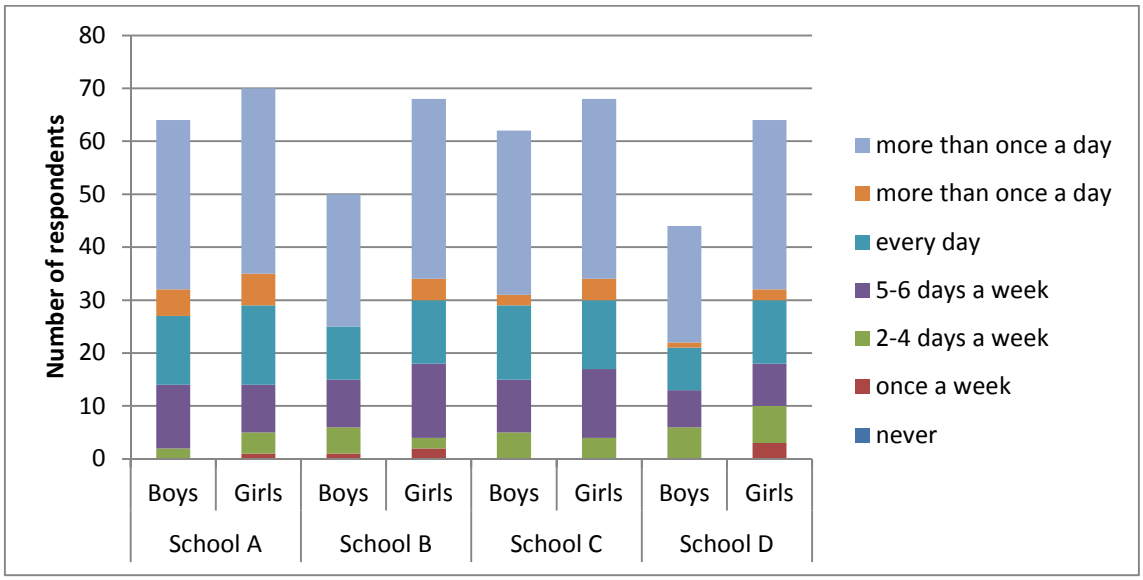
Source: data from the questionnaire, own processing

Evaluation of question No. 9: „How many days a week do you eat something sweet?“

Sweets are very popular among children although it harms the teeth and causes obesity. The majority of children consume something sweet every day. If we take a look at survey data, 40% of children eat sweets every day and almost 34% from 5 to 6 days a week which includes the absolute majority of the respondents. None of the children selected the option that, he/she never consume anything sweet.

Particular figures for individual schools are as follows. In the school A consume 42% of pupils sweets every day, of which 41% of boys and 43% of girls. The lowest daily intake of sweets was at school B and D on average, for boys and girls 37%.

Graph No. 8: „How many days a week do you eat something sweet?“



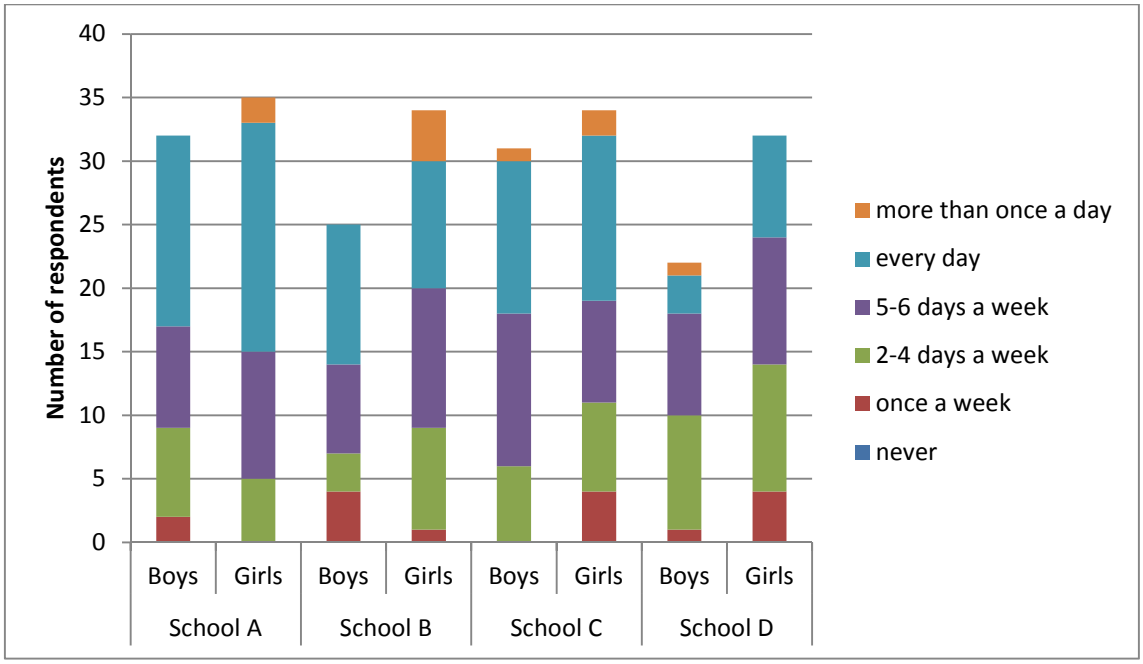
Source: data from the questionnaire, own processing

Evaluation of question No. 10: „How many days a week dou you drink Coca-Cola or other sweetened beverages?“

Drinking sweetened beverages leads to higher risk of dental cavities and obesity for both adults and chidren.

37% of boys and 36% of girls drink Coca-Cola and other sweetened beverages „every day“. The most popular it is by girls in school A, where more than one-half of girls drink these beverages every day. By boys from school A, it is 47%. In contrast, the lowest results were found in the school D where 14% of boys and 25% of girls drink sweetened beverages „every day.“ (see graph No. 9)

Graph No. 9: „How many days a week dou you drink Coca-Cola or other sweetened beverages?“



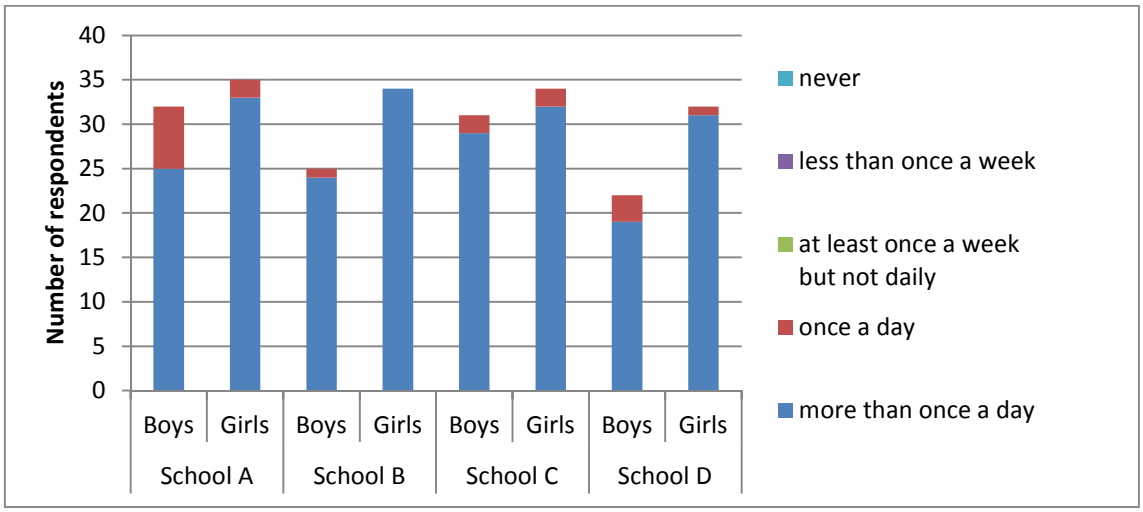
Source: data from the questionnaire, own processing

Evaluation of question No. 11: „How often do you clean your teeth?“

In a survey question, which examined the frequency of dental care for children, the most common answer was that children brush their teeth ,,more than once a day" regardless of gender.

Specifically, 88% of boys and girls at 96%. Very negligibly tagged option ,,once a day" of a total of 245 children 18 individuals.

Graph No. 10: „How often do you clean your teeth?“



Source: data from the questionnaire, own processing

3. QUESTIONS ABOUT SPORT ACTIVITY AND FIGURE

Evaluation of question No. 12: „Are you actually on a diet or do you do something else to loose your weight?“

The questionnaire shows us that boys are happier with their weigh than girls, which corresponded with the HBSC research of 2010. More diet holds 29% girls, boys only less than 5%.

The most satisfied boys with their figure are boys from the school C (87%) and A (81%), where they chose the option their „weight is fine“, and therefore they are not on a diet. The most satisfied girls are girls from school D, more than 60 % are not on a diet. In the school A are on a diet nearly 40%. (see graph No. 11)

Pearson's contingency coefficient (by sex) (see table. No. 11, No. 12, No. 13)

Table No. 11: The observed frequencies in a contingency table

	Boys	Girls	
,,Yes“	5	39	44
,,No, I need to gain some weight“	4	0	4
,,No, I need to loose some weight"	11	32	43
,,No, my weight is allright"	90	64	154
	110	135	245

Table No. 12: Theoretical frequency in a contingency table

	Boys	Girls	
,,Yes“	19,76	24,24	44
,,No, I need to gain some weight“	1,8	2,2	4
,,No, I need to loose some weight"	19,3	23,69	43
,,No, my weight is allright"	69,14	84,86	154
	110	135	245

Table No. 13: Values for calculating the square contingency

	Boys	Girls	
,,Yes“	11,03	8,99	20,02
,,No, I need to gain some weight“	2,69	2,2	4,89
,,No, I need to loose some weight"	3,57	2,9	6,47
,,No, my weight is allright"	6,29	5,13	11,42
	23,58	19,22	42,8

$$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(nij - n'ij)2}{n'ij}$$

$x^2 = 42{,}8$

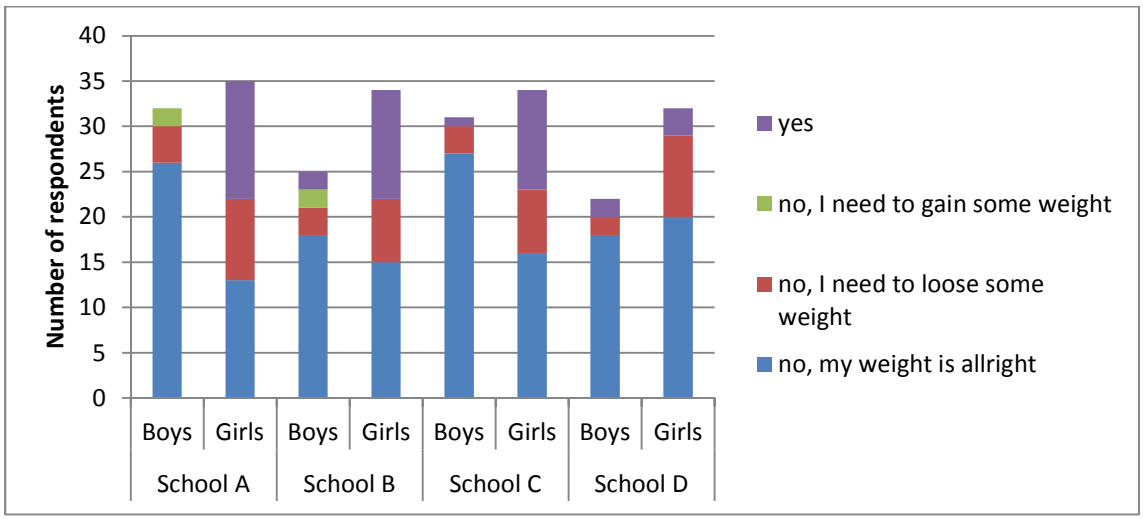
The result is 42, 8 square contingency.

$$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$$

P = 0,36

The value of Pearson coefficient of contingency between gender of students is approximated 0,36. It is little bit bigger than coefficients before. It means, that context between answer and gender, if the respondent is boy or girl, reaches a value a mild dependence.

Graph No.11: „Are you actually on a diet or do you do something else to loose your weight?“



Source: data from the questionnaire, own processing

Evaluation of question No. 13: „How many days in the past 7 days have you spent with some physical activity at least 1 hour per day? "

None of children chose the option that it wouldn't do sports at all. Most frequently do sports children in the school A, specifically 56% of boys do sports every day. The school A supports children in their interest to sports and allow them to combine their sporting ambitions with the curriculum.

The most frequent and most important reason children mentioned as motivation to sport was to have fun, to strengthen their health, be cool, and also to reduce their weight. Among the least important feeling and motivation to sport seems to be the need to win.

Table No. 14: ,,How many days in the past 7 days have you spent with some physical activity at least 1 hour per day?“ (in %)

	School A		School B		School C		School D	
	boys	**girls**	**boys**	**girls**	**boys**	**girls**	**boys**	**girls**
0 days	0	0	0	0	0	0	0	0
1 day	0	0	4	9	65	6	9	9
2 days	6	17	20	35	32	21	18	25
3 days	13	20	52	26	35	47	41	38
4 days	13	6	8	9	3	9	23	13
5 days	0	40	8	3	6	15	5	9
6 days	13	3	0	6	0	0	0	0
7 days	56	14	8	12	16	3	5	6

Source: data from the questionnaire, own processing

4. TV, DVD AND INTERNET

Evaluation of question No. 14: „How many hours a day in their spare time watch TV, DVD or video?"

Most of the time spend watching television the boys at school A (44%) of boys are watching television ,,5 hours or more a day“. Overall good came out of the survey school D, where children spend time in the lower categories, as television is concerned, the higher the number of hours they spend watching television only a few individuals, among boys (14%) ,,6 hours per day and more", at girls about 13% ,,five hours or more a day”. Choosing options at all ,,I do not watch" was mentioned least, a higher number than other have been reported only in girls at school B, less than 10% (see graph No. 12).

Pearson's contingency coefficient (by sex; see table. No. 15, No. 16, No. 17).

Table No. 15: The observed frequencies in a contingency table

	Boys	Girls	
,,About 7 hours“	8	6	14
,,About 6 hours“	16	9	25
,,About 5 hours“	3	12	15
,,About 4 hours“	12	16	28
,,About 3 hours“	15	17	22
,,About 2 hours“	21	23	44
,,About 1 hour“	24	30	54
,,About half a hour“	9	27	36
,,Not watching at all“	2	5	7
	110	135	245

Table No. 16: Theoretical frequency in a contingency table

	Boys	Girls	
,,About 7 hours“	6,29	7,71	14
,,About 6 hours“	11,22	13,78	25
,,About 5 hours“	6,73	8,27	15
,,About 4 hours“	12,57	15,43	28
,,About 3 hours“	9,88	12,12	22
,,About 2 hours“	19,76	24,24	44
,,About 1 hour“	24,24	29,76	54
,,About half a hour“	16,16	19,84	36
,,Not watching at all“	3,14	3,86	7
	110	135	245

Table No. 17: Values for calculating the square contingency

	Boys	Girls	
,,About 7 hours“	0,46	0,38	0,84
,,About 6 hours“	2,04	1,66	3,7
,,About 5 hours“	2,07	1,68	3,75
,,About 4 hours“	0,026	0,02	0,046
,,About 3 hours“	2,65	1,96	4,61
,,About 2 hours“	0,08	0,06	0,14
,,About 1 hour“	0,002	0,002	0,004
,,About half a hour“	3,17	2,58	5,75
,,Not watching at all“	0,41	0,34	0,75
	10,908	8,682	19,59

$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(nij - n'ij)2}{n'ij}$

$x^2 = 19{,}59$

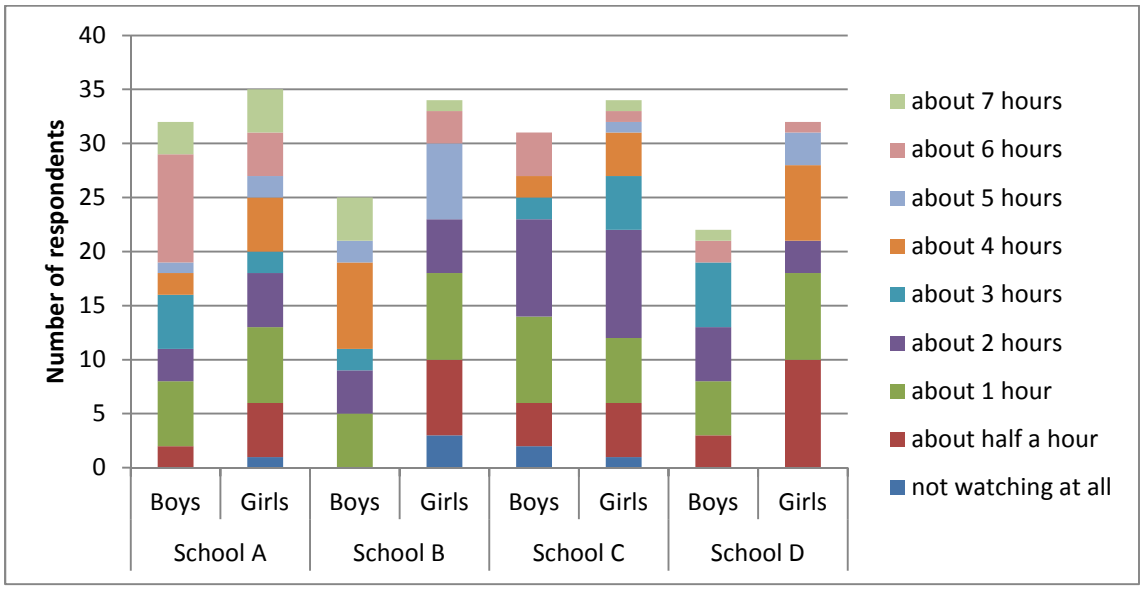
The result is 19,59 square contingency.

$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$

$P = 0{,}27$

The value of Pearson coefficient of contingency between gender of students is approximated 0,27. It is little bit bigger than coefficients before. It means, that context between answer and gender, if the respondent is boy or girl, is low.

Graph No.12: „How many hours a day in their spare time watch TV, DVD or video?"



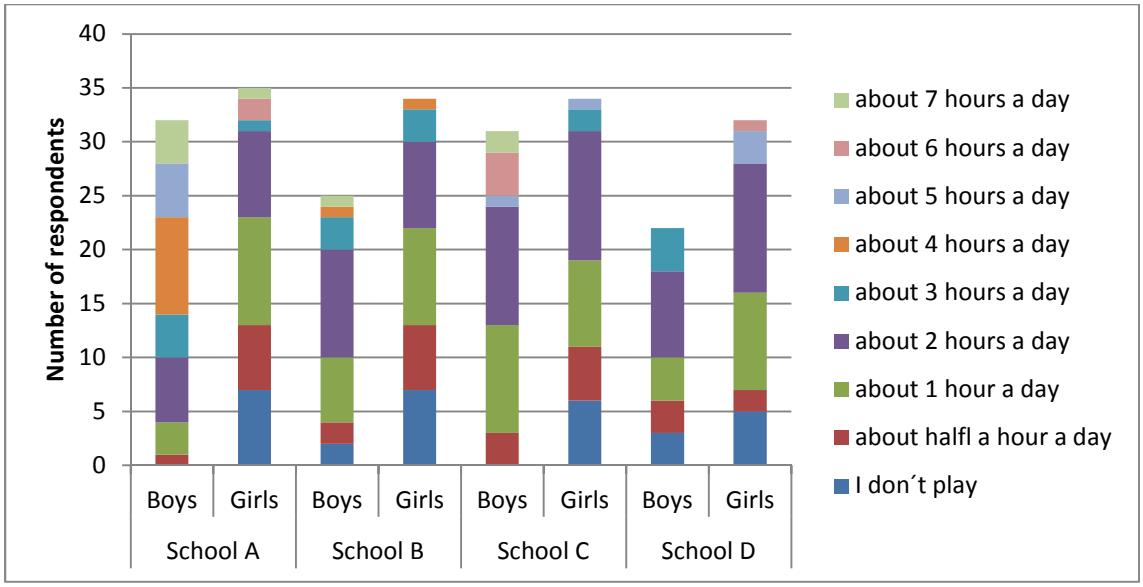
Source: data from the questionnaire, own processing

Evaluation of question No. 15: ,,How many hours a day in their free time do you usually play games on a computer or Playstation, etc.”?

Most of the time they spend on the computer playing games, the boys from school A and over half of boys ,,more than four hours a day". Can it explain the fact that school A asupports children's development in IT technologies. A higher percentage is still in school C, for boys who are involved in computer games ,,more than five hours a day"about 23%.

Approximately ,,one hour a day" of free time spends with playing computer games one fourth of pupils. One third of children spends with computer ,,about two hours a day ". (see graph No. 13)

Graph No. 13: ,,How many hours a day in their free time do you usually play games on a computer or Playstation, etc.”?

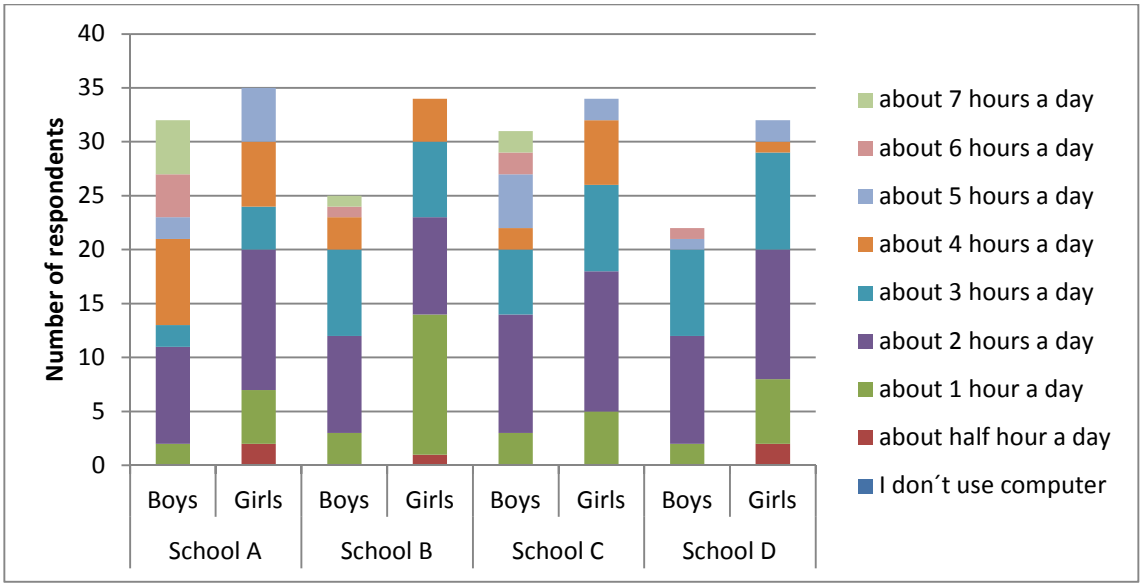


Source: data from the questionnaire, own processing

Evaluation of question No. 16: ,,How many hours a day usually uses the computer for chatting, surfing the web, emailing in your free time? "

School B is involved in the project, which is to protect the students against the pitfalls of social networking, chatting and using communication programs. Boys and girls from this school spends at most of these computer activities within 1-2 hours daily, namely less than 58%, more than half the children. The highest time chatting on the computer, enameling or other activities on the computer spends boys from school A, more than a third uses a computer ,,five or more hours a day”. The most popular choice of children has been reported about the possibility of ,,two hours a day”, over 35% of children from all schools.

Graph No. 14: ,,How many hours a day usually uses the computer for chatting, surfing the web, emailing in your free time? "



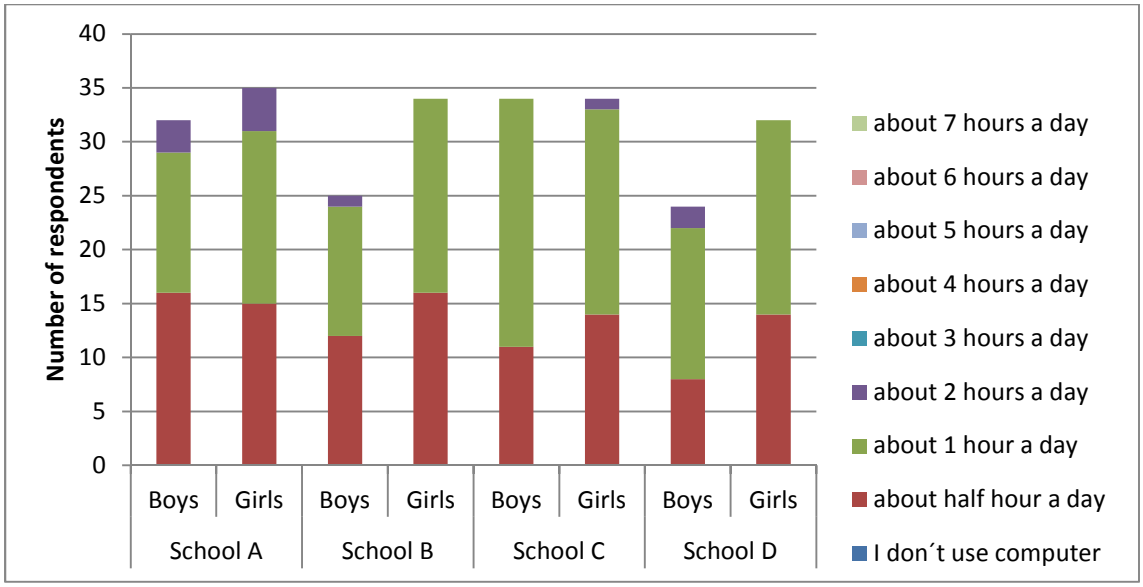
Source: data from the questionnaire, own processing

Evaluation of question No. 17: ,,How many hours a day usually uses a computer for homework, essay or projects carried out in school? "

Children are most commonly used computer for school work ranging up to one hour a day and more than half, namely 54%. About half an hour a day using the computer for school use 43% of children.

School A is an exception where there was a greater frequency than other schools indicated that a computer for homework use about 2 hours a day, a total of 10% of boys and girls. The school supports working with computer and IT technologies in school, so it can be assumed that children have more homework in this field.

Graph No. 15: ,,How many hours a day usually uses a computer for homework, essay or projects carried out in school? "



Source: data from the questionnaire, own processing

5. ALKOHOL AND CIGARETTES CONSUMPTION

Evaluation of question No. 18: ,,How often do you currently happen that you drink any alcoholic beverage such as beer, wine, spirits?"

Children chosen in all selected schools only two response options that were on offer questionnaire. For the most part they indicated that drink alcohol, in 89%. The remaining 11% said that they rarely ,,less than once a month" drink any alcoholic beverage.

The question of alcohol-related questionnaire other issues where the question ,,when you're in the last 30 days drunk" all answered negatively, and so on ,,Drank you ever so much alcohol that you were really drunk? ". (see graph No. 16)

Pearson's contingency coefficient (by sex; see table. No. 18, No. 19, No. 20).

Table No. 18: The observed frequencies in a contingency table

	Boys	Girls	
,,Never“	94	124	218
,,Rarely“	16	11	27
	110	135	245

Table No. 19: Theoretical frequency in a contingency table

	Boys	Girls	
,,Never“	97,88	120,12	218
,,Rarely“	12,12	14,88	27
	110	135	245

Table No. 20: Values for calculating the square contingency

	Boys	Girls	
,,Never“	0,15	0,13	0,28
,,Rarely“	1,24	1,011	2,251
	1,39	1,241	2,531

$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(nij - n'ij)2}{n'ij}$

$x^2 = 2{,}531$

The result is 2,531 square contingency.

$P = \sqrt{\frac{x2}{x2+n}} = \sqrt{\frac{\phi^2}{\phi^2+1}}$

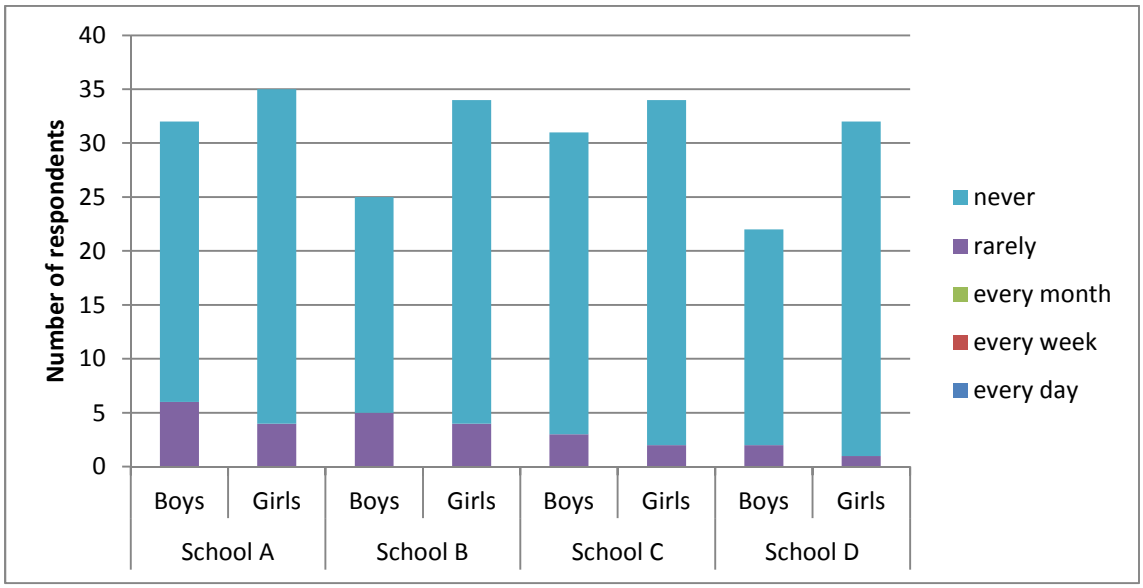
$P = 0{,}10$

The value of Pearson coefficient of contingency between gender of students is approximated 0,10.

The above calculated index (Pearson coefficient) reaches 0,10, which is low.

This means that the context between the selected answers and the respondent sex, if it's a boy or girl, is low.

Graph No.16: ,,How often do you currently happen that you drink any alcoholic beverage such as beer, wine, spirits? "



Source: data from the questionnaire, own processing

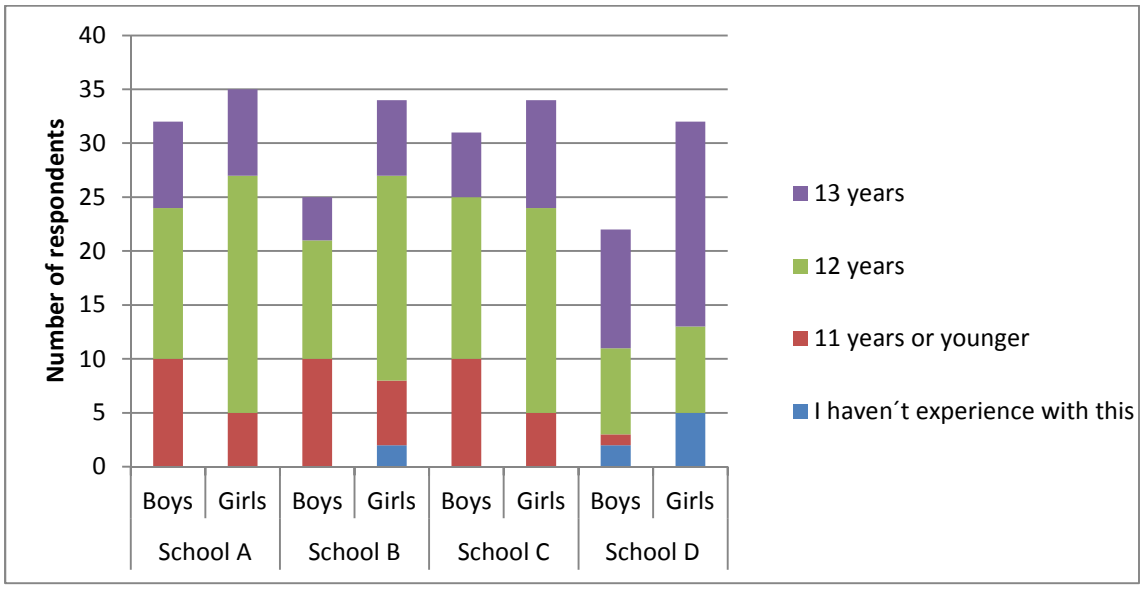
Evaluation of question No. 19: ,, How old were you when you first drink/ alcohol?"

The questionnaire was filled children aged 11- 13 years. The possibility that the children had no experience with alcohol, in the responses occurs very rarely and for girls (6%) at school B and children in school D (9% of boys and 16% girls).

Girls in school D provide the possibility that they had experience with alcohol ,,11 years" or at a younger age.

The overall percentage of children who completed the questionnaire and have experience with alcohol is very low and less than 4%. Most often, the children tasted alcohol in 12 years, about 47%, and in 13 years it has been about 30% of children. (see graph No. 17)

Graph No. 17: ,, How old were you when you first drink / alcohol? "

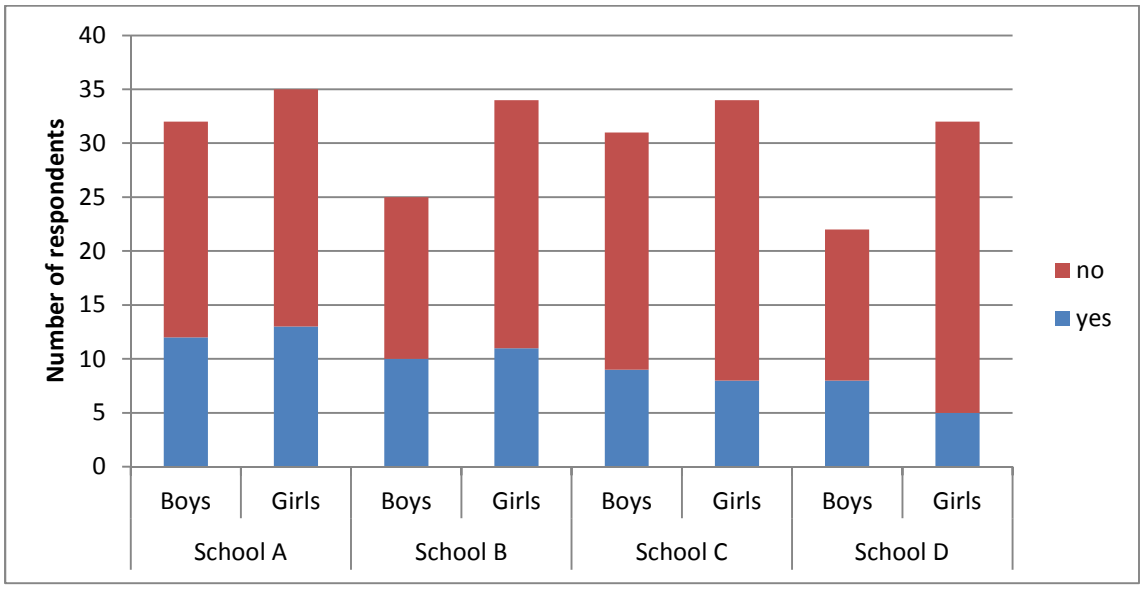


Source: data from the questionnaire, own processing

Evaluation of question No. 20: ,, Have you ever try tobacco?"

The last question in questionnaire found, if pupils have some experience with tobacco smoking. More than two-thirds, namely 69% of children never tried tobacco and the third has experience with tobacco products. Most have experience with tobacco children in school A, 38 % of boys and 37% girls. The lowest values were found in the school D where ever tasted tobacco boys 36% and girls 16%. (see graph No. 18)

Graph No. 18: ,, Have you ever try tobacco?"



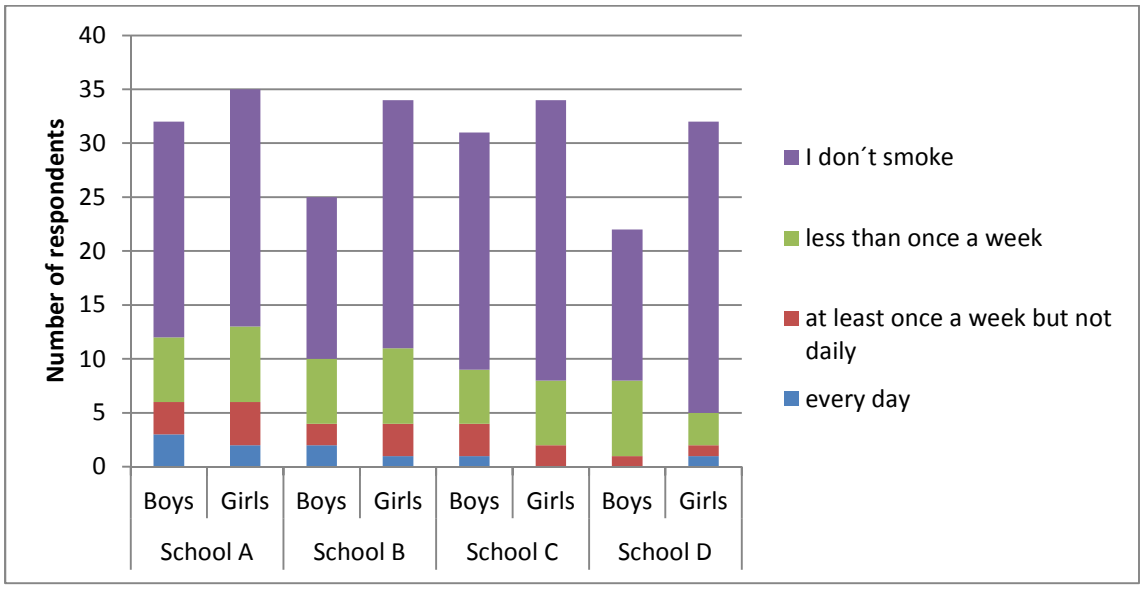
Source: data from the questionnaire, own processing

Evaluation of question No. 20: ,, How often do you smoke?"

One third of the children who participated in the survey have experience with cigarettes. 4% of children smokes ,,daily", 7% at ,,least weekly, but not daily" and the largest part of about 20% smoke ,,less frequently than once a week ". The most smoke boys from school A ,,every day" – almost 10% and also the total number of girls from school A is 6%.

70% of all participating children don´t smoke. (see graph No. 19)

Graph No.19: ,, How often do you smoke?"



Source: data from the questionnaire, own processing

4.3.1. Summary of results

The survey examined health condition of children in selected schools and their health equity, eating habits, hygiene habits, tendency to use alcohol and tobacco, their psychological and spiritual feelings. It is obvious that children learn the essentials in the family they grow up in and later on at school.

Each of the selected schools has some specifics. Two of the schools are directed more toward the sport, without any participation in projects on healthy eating, one of the schools is very active in terms of promoting healthy eating and correct eating habits in children. The school play its part in the supply of fruits and vegetables in schools within project "fruits and vegetables to schools", regularity of snacks within project "Happy snack", and further more they even support projects that deal with the protection of children when communicating on social networks and the Internet, since Internet becomes more and more available to young children.

School in Austria allow their children to have lunch or snack comfortably at home and is focused on physical activities.

The results were thus influenced by the character of schools that students attend, and also

their "politics", because each school is focused in a different direction and have its own priorities.

Specialization of the school definitely influence student´s preferences and their social development. According to the survey results students from school A, which is specialized on computers and sport activities, tend to spend more time on computers, whether they work on their school assignments or they play computer games, or even chat. Students are also more active in sports and they spend far more time with sport in their free time.

School B is profiled the way which prioritize the healthy lifestyles of its children. The school supports good eating habits by participation in following projects: ,,Happy Snacks", ,,Fruits and vegetables to schools", ,,Milk to schools" and other projects dealing with a healthy lifestyle. School C is more future oriented with regards to the environmental problems of mankind and puts higher focus to sports activities, which are also related to healthy lifestyle. This school is focused on science.

School D also appeals to regular sports activity and promotes skiing and swimming. The survey shows that children in school D in most cases spend three days a week with their sport activity.

Three out of the four schools are oriented with high focus to the physical activity of their students. Children receive extensive support in sports and physical activity in general, which was reflected in the survey. It doesn't really matter whether a particular school provide its support in the area of sports and physical activity or rather in the field of proper eating habbits, both result in avoidance of alcohol or tobacco products as children realize that it is not beneficial to their health.

The dependence between selected answer from children between selected schools was verified over calculation Pearson's coefficient contingency. Always was selected one question from one round. The results of these coeficient were calculated low. Only at one question were dependence mild. It was at question about figure ,,Are you actually on diet or do you do something else to loose your weight?"These results shows, that context between gender and pupils lifestyle is none.

Every school is influenced by geographical position, because every state has its education policy (see tab.No.21).

Table No. 21: School comparison

	School orientation	Positives	Negatives
School A	School with sports focus Support of science and technic in school, GIS program, IVT technology	Most positive self assessment of own figure showed girls in school A The most active students in sports, especially boys	School is not interested in eating habits of pupils, probably in this consequence neglect boys from school A the most regularity of breakfast and it in 25 %. More boys than boys from another school are daily with computer and action on computer about 7 hours per day.
School B	School supporting projects ,,Milk into school“ and ,,Fruit into school“ Snack support with project ,,Happy Snack“ Project of health support or what we can do for improvement contentment in school Label ,,ACTIVE SCHOOL“	This, that school supports projects with eating habit sis positive mainly in frequency of breakfast especially at girls. This pays too in fruit consumption.	Although that school is proactive in projects with including food, would be expected higher values in results
School C	School supporting pupils in sport aktivity School focused on science study and maths	High popularity of sport especially at boys	This school neglets subject of pupils eating, focused more on study education than eating habits
school D	Support of sport, especially swimming and skiing School supporting lunch and snacks pause of pupils from home	Positive results in domain of vegetable consumption at girl Oft sport aktivity of children, pupils sport most often 3 days per week Children are satisfied with their health condition	Low frequency of breakfast

DISCUSSION

The practical part was compared with the study „National Report on the health and lifestyle of children and schoolchildren“ on the basis of international research, which took place in 2010 as a part of the international project ,,Health Behaviour in School-aged Children“, under the auspices of the World Health Organization.

According to the HBSC evaluates the overall health of schoolchildren positively 9 out of 10 pupils. It is based on comparisons of their own condition based on comparison of the same age peers. Girls (11%) were in the HBSC survey tend to evaluate a little more worse than boys (8%) because they described their condition as ,,not very good”or ,,bad”.

HBSC assesses the overall health of schoolchildren positively 9 out of 10. It is based on comparison of the same age peers. Girls (11%) who participated the HBSC survey tend to evaluate a little more worse than boys (8%) since they stated their condition as,, not very good "or,, bad". In a survey conducted in the thesis there was rather opposite trend. Girls had a tendency to evaluate their condition more optimistic than boys. The mosth satisfied seemed to be girls in school A, where 43% of girls claim their state to be excelent (35% out of all the respondents). In comparison to the HBSC survey from 2010, there is an opposite tendency. According to the HBSC girls tend to respond with a negative stance on their health condition. In my survey rated themselves more negatively boys.

Regarding health problems, HBSC survey specifically in its survey did not determine which specific disease children suffer, rather determined its frequency. The diploma survey for each health problem itemized temporal frequency. According to the HBSC suffer from health problems, both psychological and physical more often girls. The girls in the survey stated that the most troubling are headaches, irritability, depression or bad mood. Boys on the contrary, complained of frequent fatigue, which may be associated with a survey that three out of four surveyed schools promote increased sporting activity.

With a feeling of self governs the question of life satisfaction. According to the HBSC survey, 85% of schoolchildren have rated their lives positively. With that goes hand in hand with a diploma survey. Children rated their life with high numbers. No one has rated his life with

lower number than five. The most satisfied are the boys and girls in school A (75%), 77% of boys and 71% of in school D. They chose the first two highest ratings on a point scale.

Asking how children tend to judge their figure they tend to respond negatively, rather women. According to HBSC there is a difference mainly in 13 and 15 years. In a survey for my thesis, most children identified that their figure is just right. Coincides with the tendency of girls self-criticism, especially in school A (23%) and at school B a little less (18%). Among boys only individuals who fit in this category, where the ones who felt „too fat“.

Healthy lifestyle assumes the regularity of breakfasts. According to the data HBSC breakfast percentage decreases with age. It is true, that more boys than girls eat breakfast. The results of the research diploma diverge. According to the data collected, eat breakfast more girls in school B (65%). This was expected as the school is an active member of the Project for a healthy diet and health, and is labeled as ,,Healthy School". Regarding neglect breakfast again is violated assumption HBSC because most neglect breakfast just boys and it in school A (25%).

According to the WHO dietary recommendations fruits should be consumed at least 3 per day. Likewise vegetables. The HBSC stated daily fruit consumption more than half of girls aged 11 years. This is more popular with girls. The popularity of the fruit with girls is the highest (55%) in school A, followed by girls from school C (50%) and school B (47%). School B supports the project ,, Fruits at school". This is reflected in the survey's results because both girls and boys eat fruit several times a week. Only 2 of the 25 boys and 6 from 34 girls responded that they eat fruits only once a week. Overall, about 14 % of children from school B eat fruits once a week. Paradoxically, despite the high number of school B, we would expect an even better result as the school supports ,,Fruits at school" project as the only one of the selected schools. Even vegetables are more popular with girls at school D (63%). Eating vegetables is according HBSC higher (32%) than in the recorded data (30%). Eating fruit when children consume it every day in the survey meets with data from research HBSC 2010, where daily consumption is about 42% of children, in this research is less than 45%. Here it is confirms lower popularity of vegetables, HBSC survey in 2010 it is around 32%, children in schools in the Czech Republic, Slovak Republic and Austria, eat vegetables even less preferred, namely around 30%.

In research HBSC third of respondents said regular consumption of sweets once a day. In research conducted this percentage is even higher, almost 40%. Given that this is a growing problem, it can be explained by the fact that HBSC data are from 2010. The current figures would be probably higher nowadays.

Another factor that the past few years significantly contributes to obesity, not only children but also adults, is the consumption of sweet drinks or cola. The HBSC survey in 2010 reported less than a third the daily drinking sweetened beverages. According to HBSC research in 2010, sweetened beverages are popular with far more boys than girls, specifically quarter of surveyed boys and fifth of girls respondents. In my research, this difference is almost negligible. For the research was the number of children who consume sugary drinks every day higher (almost 37%). For both direction consumption of sweets, and consumption of sweetened beverages, is there an increasing tendency.

On the question of personal hygiene responded almost all children in the affirmative. Almost overwhelming majority responded that they brush their teeth more than once a day, a higher number of boys (22%) in the school A stated that thay brush their teeth once a day. In other schools, the differences between girls and boys are the same. According to the HBSC two-thirds of boys and three quarters of girls brush their teeth twice a day. In diploma survey there are almost no differences between the sexes in terms of dental hygiene, assuming that we take into account a group of boys in school A.

Evaluating satisfaction with body weight ended up fairly well. According to the survey respondents are satisfied with their weight, both boys than girls. The same result also indicates HBSC survey in 2010. The most dissatisfied were the girls in school A (40%).

Weight reduction is related to physical activity. 3 of 4 schools where the survey took place actively support sport, therefore it can be assumed that children's participation in sports activities will be high. The highest values were measured in sports of children in schools A and C, more in boys than in girls. The same applies in the HBSC survey. Girls remain behind boys in physical activity. Students motivation to sport remains the same in both diploma survey and the HBSC. Certainly is it not the desire to win.

Our society is increasingly tolerant against so-called "soft drugs". Children aged 11- 13 years responded, on the question of frequency of alcohol consumption, as expected. 89% of their answers were negative. HBSC facts are following: Two-thirds of children aged 15 drink alcohol for the first time before their thirteenth birthday, and half of young people get drunk at 13 years. According to statistics in HBSC survey from 2010, more than half of children in the Czech Republic get their first experience with alcohol in the age of 13.

Based on the obtained results of diploma survey this can not be confirmed. On the question "When did you get drunk in the past 30 days?" everyone responded negatively.

It is the same with cigarettes. Two thirds of children in research responded negatively to the question of smoking. One third already have some experience with smoking. However only 4% of children smoke daily. Especially boys from school A. It is the same with HBSC research. In 11 years, this is a very small number of children that would have indicated that smokes. With increasing age dominated girls over boys.

When we assess this comparison between HBSC research and diploma research among the four selected schools and children aged 11-13, their results match.

Significant differences in results can be found in alcohol consumption, where the diploma research are more positive comparing to HBSC in terms of alcohol consumption.

The same can be said about dental hygiene and breakfast results. Diploma survey does not confirm that boys would have breakfast more regularly than girls.

Unfortunately, the negative and the increasing tendency revealed by a survey of sweets, sweetened beverages and cola, which has influences obesity and negatively impacts on human health.

CONCLUSION

The survey and case studies revealed a link between eating habits of children, depending on their gender and the school they attend. There are significant differences in children's responses, depending on their gender and school they attend. These values disagrees with the average values and a model created by HBSC survey in 2010 and in 2014. Nevertheless, we can say something in general. As regards the state of health, children are largely satisfied. Most girls suffer from headaches, depression, low mood and feelings of irritability. On the contrary, most of the boys complain about fatigue. However most children are happy with their standard of living. Boys prevail over girls. None of the children evaluate their life in a negative way. In terms of injuries girls take a better care of themselves over boys. Most of the respondents are satisfied with their figure. The usual answer was ,,just right", but the girls have a tendency to be more critical to themselves. In the matter of eating habits, girls eat breakfast more often than boys.

Regarding the trend in consumption of fruits and vegetables I would say that it is satisfactory and children, whether their school is involved in a project dealing with proper nutrition or not, are aware of the fact that fruits and vegetables are healthful and important. On the contrary, according to the diploma survey there is increasing trend in consumption of sweets and sugary drinks, which breaks with the results of HBSC research in 2010. This brings a higher risk of tooth cavities, but the children care about their teeth carefully.

Children spend enough time with sports activities, but the time spent on computers and televisions is increasing.

If we look on the sports page, for many children is sport a popular activity, but the question is, if this trend does not apply to certain individuals, who are actively engaged in sports.

It would be good support to sport greater subsidies sports hours in school that children are in school compulsory, and so there would be a regular sports activity of whole classes. From the family could be this activity supported by walking into school every day. Negative trend and impact of today could be considered increasing the time spent on computers and televisions. Another solution to prevent negative effects influencing a child's establishment

extracurricular organizations and activities, such as a suite, various educational and sporting circles.

Last question, which is the consumption of alcohol and tobacco, so the numbers of questionare came out this survey is very low considering the age of the respondents.

Progres in this field survey was captured especially because that this habit not be recorded in the correct age group, given the very low age of the pupils.

In the case of a diploma survey was chosen quite low age level of children who would be drinking alarming.

The best results were achieved by the school D. Out of five sections it was three times in the first place. The school is situated in the largest of the "New" towns. On the contrary, below the average results was school A in which there is an extra class, it's lower secondary school, where new students are accepted based on their knowledge. School A is placed in a smaller town. The two schools selected in the Czech Republic remained in the last two places.

Not only the school but affects the socialization of children, elementary and fundamental impact on shaping the child's personality and his hygiene habits is especially family and social background. It is very likely that the results influence the character of schools and facilities that have children in the family. Support of activities conducive to healthy lifestyle at school may be partly influenced this development.

According to the National Family Policy Concept (Ministry of Labour and Social Affairs, 2005) in terms of family policy has a system of primary or follow up secondary education essential importance, and so in many ways replaces the fulfillment of one of the basic family functions, particularly educational.

The aim should be collaborate school and parents together about their children, but often these two entities fight together or against each other go. The goal is to be healthy and happy thriving child, in terms of both mental and physical.

School and especially parents must understand the importance of the value of health and promote it from an early age of the children. The child should adopt healthy eating style in

the context of a healthy lifestyle. Thus lifestyle diseases may be avoided, which might have potential impact on the economy of the entire state (Vilinová, 2012).

Generally, it is important to realize, that the current health status is starting point of the population's health status for future generations and sustainable development of other regions (Trhlínová, 2015). Health is simultaneously fundamental importance for the reproductive process and the development of employment potential and thus for overall economic growth and the competitiveness of regions and the entire country and it is the reflection of the level of development of the society (Vagner, 1996).

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LIST OF ABBREVITATIONS

HBSC Health Behaviour in School Aged Children

OECD Organisation for Economic Co- operation

WHO World Health Organisations

APPENDIX

Appendix NO.1: Table No. 6: Evaluation of question „How of often did you have following obstacles in the past six months?“

		SCHOOL A		SCHOOL B		SCHOOL C		SCHOOL D	
		boys	**girls**	**boys**	**girls**	**boys**	**girls**	**boys**	**girls**
headaches	practically every day	2	3	0	0	0	3	0	1
	more than once a week	5	5	0	9	5	7	1	6
	once a week	6	13	3	5	6	12	4	11
	once a month	9	8	6	6	7	6	6	8
	seldom or never	10	6	16	14	13	6	11	10
stomach pain	practically every day	0	0	0	0	1	0	0	0
	more than once a week	0	0	0	1	0	0	0	0
	once a week	2	3	4	4	0	0	0	1
	once a month	10	14	7	9	2	5	5	7
	seldom or never	20	18	14	20	28	29	17	24
pain in the back	practically every day	0	0	1	0	0	2	0	0
	more than once a week	1	2	3	1	0	5	0	0
	once a week	5	7	9	5	6	10	2	5
	once a month	10	8	5	7	7	5	9	7
	seldom or never	16	18	7	21	18	12	11	20
feelings of hopelessness, Irritability, bad mood	practically every day	2	6	0	1	2	1	0	5
	more than once a week	4	9	0	1	6	14	5	4
	once a week	6	7	5	6	7	7	6	5
	once a month	8	7	9	13	4	11	4	5
	seldom or never	12	6	11	13	12	1	7	13

tiredness	practically every day	2	2	1	2	5	4	2	4
	more than once a week	15	2	3	2	13	5	6	0
	once a week	7	6	4	5	5	7	6	9
	once a month	3	11	8	10	6	7	6	7
	seldom or never	5	14	9	15	2	11	2	12
nervousness, stress, difficulty falling asleep	practically every day	1	0	1	3	2	0	3	4
	more than once a week	5	7	11	4	4	6	4	6
	once a week	8	12	6	6	5	6	6	7
	once a month	11	12	4	13	5	8	3	5
	seldom or never	7	4	3	8	15	14	6	10
lassitude, vertigo	practically every day	0	0	0	0	0	0	0	0
	more than once a week	0	0	0	0	0	0	0	0
	once a week	0	0	0	0	0	0	0	0
	once a month	4	7	2	5	0	2	2	3
	seldom or never	28	28	23	29	31	32	20	29
shoulder and neck pain	practically every day	0	2	0	2	0	0	0	0
	more than once a week	2	5	0	6	0	1	0	0
	once a week	6	2	5	5	3	5	0	2
	once a month	6	5	8	10	5	6	3	8
	seldom or never	18	21	12	11	23	22	19	22
worry, fear	practically every day	0	0	0	0	0	0	0	0
	more than once a week	0	0	0	1	0	0	0	0
	once a week	1	0	0	5	0	2	0	0
	once a month	5	7	7	9	2	5	5	4
	seldom or never	26	28	18	19	29	27	17	28

Source: Data from the questionnaire, own processing

Appendix NO.2: Questionnaire

Dear students, perhaps you wondered how do you live or how live students of a similar age. We ask you to complete a questionnaire which is anonymous (this is why at any point of this questionnaire you do not fill in your name or the name of your school). Because the questionnaire is anonymous, we would like to ask you for the most accurate and truthful answers. The completed questionnaire return back to your teacher or the person who handed the questionnaire to you. The questionnaire is simple. Please follow the instructions for every single question and on both sides of a sheet of paper!

Thank you for cooperation.

I identify my gender as *(check the one that applies)*:

- male
- female

Age:

- 10 years
- 11 years
- 12 years
- 13 years
- 14 years
- 15 years
- different age, please specify: _____

1. What do you evaluate your health condition?

- perfect
- good
- not so good
- bad

2. Jak často jsi měl/a následující obtíže v posledních šesti měsících?

headaches

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

stomach pain

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

back pain

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

feelings of hopelessness, irritability, bad mood

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

nervozita, napětí, potíže s usínáním

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

drowsiness, dizziness

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

shoulder pain, neck pain

fatigue, exhaustion

- about every day
- more than once a week
- about once a month
- about once a week
- rarely or never

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

worry, fear

- about every day
- more than once a week
- about once a week
- about once a month
- rarely or never

3. How do you concider your life**?** Higher number means better feeling.

- 10 the best
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0 the worst

4. *Many children and young people will get injured or have an accident during activities such as sport or game. The injury can occur at various places on the street, at home or at school. There are cases when people get burn or poison themselves.*

How many times have you had such an accident during the last 12 months so that it had to be treated by a doctor?

- haven't had any accident in the past 12 months
- once
- twice
- three times
- four times or more often

5. Specify your weight and height.

weight _____ kg

height _____ cm

6. In your opinion you are:

- way too skinny
- little skinny
- perfect figure
- little fat
- way too fat

7. How often do you usually have your breakfast – eat and dring *(something more than just a glass of a tea, milk or juice)***? Applies only for week days.**

- don't have a breakfast
- one day of a week
- two days of a week
- three days of a week
- four days of a week
- five days of a week

8. How often do you eat fruits?

- never
- once a week
- 2-4 days a week
- 5-6 days a week
- every day
- more than once a day

9. How often do you eat vegetables?

- never
- once a week
- 2-4 days a week
- 5-6 days a week
- every day
- more than once a day

10. How often do you eat sweets? *(candy, chocolate, biscuits)***?**

- never
- once a week
- 2-4 days a week
- 5-6 days a week

- every day
- more than once a day

11. How often do you drink Coke or other sweetened beverages?

- never
- once a week
- 2-4 days a week
- 5-6 days a week
- every day
- more than once a day

12. How often do you brush your teeth?

- more than once a day
- once a day
- at least once a week but not daily
- less than once a week
- never

13. Are you on diet ar do you take any other action in order to loose some weight?

- no, my weight is alright
- no but I need to loose some weight
- ne, I need to gain some weight
- yes

14. *Physical activity is any activity which involves the acceleration of your pulse and you start to breath more difficult. Some examples of physical activities: jogging, brisk walking, rollerblading, biking, skateboarding, dancing, swimming, basketball, football.* **How many days of the past seven days have you performed a physical activity which took at least 1 hour per day?**

- 0, not a day
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

15. Choose from the list below the reasons that lead you to physical activities. Rate each one by number with respect to its the importance (very important - 3, important - 2, unimportant - 1 (*the higher the number, the greater importance*).

Reason to perform a physical activity	*Importance (very important - 3, important - 2, unimportant - 1)*
Have some fun	_____
Being good at sports	_____

Win _____
Meet some new friends _____
Strengthen your health _____
Meet your frieds _____
Workout _____
Look good _____
Take pleasure in the use your body _____
Please your parents _____
Feel fine _____
Have your weight under control _____
Experience the thrill of the sport _____

16. How much time do you spend watching TV, DVD or video?

- not watching at all
- about half an hour a day
- about an hour a day
- about 2 hours a day
- about 3 hours a day
- about 4 hours a day
- about 5 hours a day
- about 6 hours a day
- about 7 hours or more

17. How much time do you spend playing computer games, playstation etc.?

- not watching at all
- about half an hour a day
- about an hour a day
- about 2 hours a day
- about 3 hours a day
- about 4 hours a day
- about 5 hours a day
- about 6 hours a day
- about 7 hours or more

18. How much time per day do you use your computer to chat, browse web, email or do your homeworks?

- don't use computer at all
- about half an hour a day
- about an hour a day
- about 2 hours a day
- about 3 hours a day
- about 4 hours a day
- about 5 hours a day
- about 6 hours a day
- about 7 hours or more

19. How much time per day do you use computer to do your homeworks, or other school assignments or projects?

- don't use computer at all
- about half an hour a day
- about an hour a day
- about 2 hours a day
- about 3 hours a day
- about 4 hours a day
- about 5 hours a day
- about 6 hours a day
- about 7 hours or more

20. How often do you drink some alcohol, such as beer, wine or any other spirit?

- once a day
- once a week
- once a month
- rarely (less than once a month)
- never

21. How many times did you get drunk in the past 30 days?

- never
- 1-2 times
- 3-5 times
- 6-9 times
- 10-19 times
- 20 times or more often

22. Have you ever drank so much alcohol that you actually felt drunk?*(Your head spun or you felt queasy.)*

- no, never

- yes, once
- yes, 2-3 times
- yes, 4-10 times
- yes, more than 10 times

23. How old were you when you drank alcohol for the first time? *(This means you drank at least a small glass of alcohol not just tasting it.)*

- haven't experienced alcohol yet
- 11 years or younger
- 12 years
- 13 years
- 14 years
- 15 years or older

24. How old were you when you got drunk for the first time?

- haven't experienced this yet
- 11 years or younger
- 12 years
- 13 years
- 14 years
- 15 years or older

25. Have you ever smoked? *(means at least one cigarette, cigar or pipe).*

- yes
- no

26. How often do you smoke these days?

- every day
- at least once a week but not daily
- less than once a week
- don't smoke