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A POSITION OF EDUCATION IN ENVIRONMENTAL HEALTH FORMED IN THE CONDITIONS OF THE SLOVAK REPUBLIC

S u m m a r y

The paper deals with the research of selected factors and their mutual relations that influence the formation of an environmental health of the Slovak people. Based on the results obtained by the research realized with a sample of elementary school pupils authors tried to generalize the knowledge suitable to implement the topic of a reasonable diet and formation of a healthy lifestyle to the curriculum of the natural science education in the educational system of the Slovak Republic.

Słowa kluczowe: education, environmental health, environment

Introduction

One of the basic human rights is a right to an adequate standard of living, especially the health for people and their families including food, clothes, accommodation, health care and social services [1]. As declared in the Slovak Constitution: "Every citizen has a right to early and complete information about the state of environment and the reasons and effects of that state" [2].

A modern definition of health does not include only the physical state of a human organism. It is perceived as a complex of relations between a human and his environment. It is clear that the topics of human health and environment cannot be evaluated separately. A negative effect of environment and work environment on the human body often appears in a long-time period, very often at an old age. The state of environment affects a human environmental health.

In 2000, the Slovak Government in their report "Action plan for environment and Slovak citizens' health" focused on environmental education. It considers the

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education to be an important part of a health prevention that can decrease the state financial requirements. This has not been only official material in this field accepted by the government in recent years. There is another interesting project called “The National program of Health Support” from 1992 revised in 1995. The chapter dedicated to education implies the school institutions were given a task on how to apply the innovative ways in order to improve the formation of a reasonable lifestyle especially related to nutrition [3].

However, there were not sufficient methodical and material conditions available in the Slovak school system related to that process. This state persists but new projects emerge, e.g. “Schools supporting Health” that brought many positives to this process especially for new a generation of Slovak people that grows up in the different social-political conditions.

The real conditions in the Slovak Republic

The results achieved in the field of a health prevention against illnesses according to the projects and programs of The National Program of Health Support (NPHS) show progress in spite of the fact that there has been almost no change for example in the structure of mortality and its causes in the Slovak population. There are five the most common causes for the death representing 95 % of all deceases. The causes as follows: cardiovascular diseases, cancer diseases, diseases caused by external factors (injuries, poisoning, murders, and suicides), respiratory diseases and digestive system diseases. The most frequent causes are cardiovascular diseases and cancer diseases. The tendency of mortality changes in the Slovak Republic is similar to those in the European Union. The mean life expectancy in the Slovak Republic for men is 70 years (in EU 75.5 years) and for women 78 years (in EU 82 years). The mortality development in the Slovak population stagnates as shown in the graphs 1 and 2. In general, the number of heart attacks is decreasing for all age categories especially for men in the productive age. The mortality from the vascular diseases for men and women over 65 years is the highest in southern and southeastern parts of Slovakia. It includes the brain vascular diseases, ischemic heart disease (IHD) and heart attack [4].

The World Health Organization (WHO) in their political document “Euro 21” refer to objectives which will be the most important for sustainable development in 21st Century. Lifestyle, the character of work activity, environment and work environment are known to effect people’s health up to 60%. It represents a very significant factor that could be controlled by everyone of us. And it is the role of schools to educate people in that sphere.

One of the aims of WHO is “Health for all” – a very humane but also a very difficult task. However, it is not enough only to have financial and material resources in order to reach this aim. It is fundamental for people to increase the quality of their

lives. In a biological aspect, the human is considered to be an endangered species. A hypothesis of polluted environment is the main reason for that. Therefore, understanding of all relations connected to environmental health and perception and subsequent realization of the principles environmental health is based upon, are the essential attributes to maintain the health state of the present and future Slovak population.

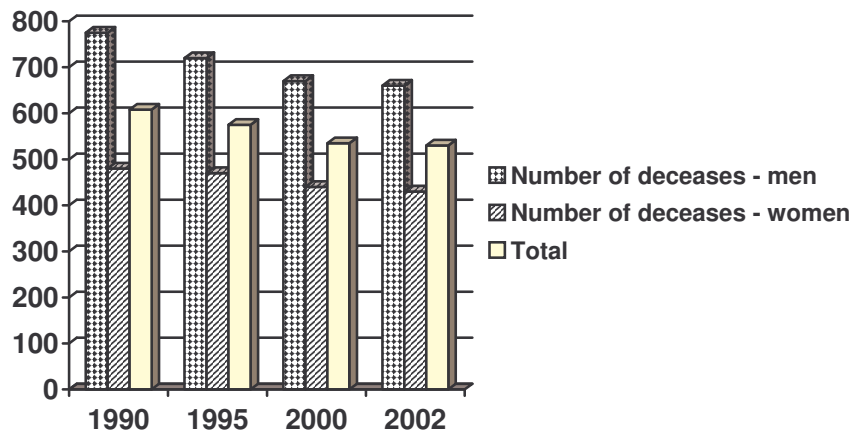


Fig. 1. Tendency in mortality – cardiovascular diseases (per 100 thousand people).

Rys. 1. Wskaźnik umieralności – choroby sercowo-naczyniowe (na 100 tys. ludzi).

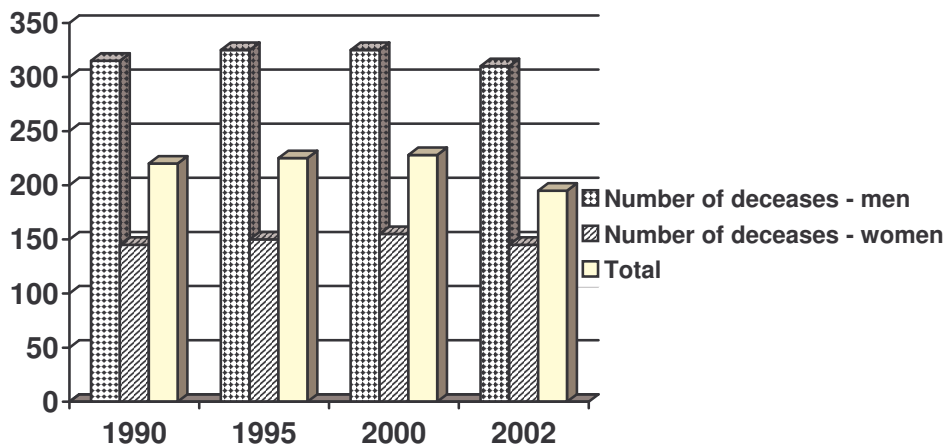


Fig. 2. Tendency in mortality – cancer diseases (per 100 thousand people).

Rys. 2. Wskaźnik umieralności – choroby nowotworowe (na 100 tys. ludzi).

Although the health state of the Slovak population is now much better than it had been in the past, compared with the other EU countries it lags behind. Therefore, there is a need to implement the objectives of the “National Program of Health Support”. It depends on the economic, social and health policy of the country including education and interventional projects in all levels of society. The emphasis is mainly placed on reducing the risky health factors that affect the formation of serious non-infectious diseases. The coordination between WHO strategies and European Parliament decisions is essential in order to fulfill the tasks resulting from the program aims.

The program and projects of “The National Program of Health Support” are coordinated by “The Slovak Office of Public Health”. The criteria related to the project implementation are as follows:

- improve the health state and health knowledge of people,
- a project connection to actual aims of “National Program of Health Support”,
- economical effectiveness and transparency of the project,
- clearly defined measurability of the aims,
- quantified indicators,
- assessment of the project effects on health,
- use of project results in practice,
- professional level of project,
- applicant’s references,
- project sustainability after the withdrawal of a financial aid [4].

One of the points of NPHS is to provide a communication with the public including education. This communication should provide people with a free access to adequate and comprehensible information that helps to improve their knowledge, attitudes and behaviour related to their health. An effectiveness of NPHS is assessed every five years. The assessment is executed by means of a „Health impact assessment“ method.

Another aim of NPHS is to implement the reasonable and healthy lifestyle in the large groups of population. In order to achieve that aim the state institutions have to create favourable conditions that could enable people to increase the quality of their lives and take responsibility for their health. According to the definition of a lifestyle it embodies behaviour of a person that is based upon the mutual interaction of life conditions, personal features and social and economic factors.

The latest investigations on the health awareness and behaviour of Slovak people confirm that 78% of men and 72% of women evaluate their health state as good. It was also confirmed that women suffer from long-time diseases more often than men. Cardiovascular and cancer diseases are the most frequent diseases of elderly men and women. Allergies dominate in the group of the young people. The 60% of respondents are convinced they can influence their life expectancy by their lifestyle. The 90% of

respondents from all age groups consider their passivity to be the main reason of their unhealthy lifestyle. Therefore, the main activities of the educational and health institutions in the Slovak Republic have to focus on increasing their know-how and supporting continuous education of people leading to a healthy lifestyle.

Prevention is an important part of this process, which is legally supported by the law number 576/2004 dealing with healthcare and related services. The prevention belongs among the group of work activities handled by medical workers and it focuses on education leading to protection, maintenance or health recovery to people. The aims of prevention as follow: searching for causes of illnesses and elimination of those causes, searching for pathological processes in the asymptomatic period of a disease and avoiding its clinical symptoms, active monitoring of a disease and prevent its aggravation. The Slovak republic has adopted a new legislation that brings forward a self-responsibility of people for their health. In this respect, the effectiveness of prevention represents more benefit to people's health then costs for curative medicine. The latest study of health awareness and behaviour of the Slovak people in 2004 showed that in the group of 25–64 years old people 78% of women and 56% of men have benefited from a preventive examination (61% of men and 58% of women in the group of elderly people).

Suitable diet

The third aim of the NPHS is suitable diet. Along with eating habits it represents the main pillars of a healthy lifestyle. A nutrient intake influences the most of non-infectious diseases. The new trends in nutrition, bad eating habits as well as high prices of food increase the risk of a formation and development of various non-infectious diseases, especially cardiovascular and cancer diseases. An actual state in the Slovak Republic can be characterized by a low consumption of fruit, vegetables, milk and dairy products. However, meat consumption is 20% higher then a recommended dose. Despite the fact that the availability of food at the markets has rapidly increased during the last 10 years the availability of fruit and vegetables for poorer families remains a problem. The latest survey revealed that the consumption of fish is very low as well, and it cannot be compared to the optimal consumption in the developed European countries. The other investigations also show that the consumption of poultry is at ordinary level whereas the consumption of pork should be less. Poultry is consumed daily or 1–2 times per week by 72% of 15–24 years old people, 80 % of 25–64 years old people and 81% of above 65 year old people. Poultry is never consumed by 2–4 % of people from all age categories. Milk is relatively preferred in all age categories while consumption of cheese is the lowest in the category of elderly people. The higher price of cheese might explain these figures. The raw vegetables are consumed 1–2 times per week by 37–46% of respondents from all age categories. The fresh fruit is consumed

daily particularly by the young categories, elderly people prefer cooked vegetables. Leguminous plants in general are hardly ever eaten. Their consumption increases with the age. The consumption of potatoes is on a low level in all age categories but the consumption of product made from flour is too high. They are consumed daily or 1–2 times a week by 68–73% of respondents. A daily consumption of sweet is excessively high especially in the category of 15–24 years old people [5].

When considering the facts listed above, it is obvious that the state institutions have to:

- increase the know-how on healthy food,
- monitor the people's saturation by micro and macronutrients,
- increase the calcium intake especially by means of milk and dairy products consumption,
- healthy food production promotion,
- developing the programs for health support leading to improving the education and know-how of producers and consumers,
- monitor the extraneous components in food,
- monitor the consumption of selected kinds of food and eating habits.

The role of the family in education leading to a reasonable diet

Family is one of the important factors that influences a reasonable lifestyle and improve the environmental health. Therefore, every country is supposed to create the conditions for healthy and harmonic development of a family. The family health reflects a social and cultural standard of every developed country. Only a healthy family can bring up healthy children who are the basis of a prosperous society. At the present time, we can notice that a birth rate in the Slovak Republic is decreasing. During the last three years, the natural increase of population had negative tendency. Also the age of primiparas is higher and at the same time the number of children per woman is lower. This results an increasing number of people at the post-productive age. Another survey reveals an increase in the number of children brought up in incomplete families. The latest investigation on the health awareness and behaviour of the young in the Slovak Republic implies that they mostly concern themselves with the topics of marriage, parenthood, contraception, and drug dependence. Other topics are: healthy diet (girls) and environment (boys). School, family and media are the most frequent information sources for young people. The activities necessary to fulfill the aims related to those issues as follows:

- education of pregnant women and parents on the particular factors of a healthy lifestyle,
- prevention of the risk factors of children health,
- education on the partnership and parenthood in the selected communities,

- improving an educational system leading to the responsibility for health,
- creating the conditions in order to organize free time activities for families,
- implementation of the preventive programs focused on a healthy ageing,
- education of families with a handicapped member,
- creation of the educational programs for the education of the Roma people.

Other aims of NPHS are also valuable for the formation of a reasonable lifestyle of Slovak people, e.g. creating awareness to smoking, alcohol and drugs, creating healthy working, social, economic and environmental conditions. Furthermore, it is also important to notice and influence the quality of home environment and enable people and families to protect and improve their health. In the last years, there has been an evidence of an increased stress at work but also in the household. The psychological stress is probably often caused by a difficult social situation in many regions of Slovakia. Therefore it is necessary:

- to increase the know-how about risks that have a negative effect on health and contribute to the creation of healthy environment,
- to improve the positive influences and activities improving health,
- to work out an epidemiological study focused on the evaluation of health factors in the selected localities,
- to evaluate the impact of the decisions related to health.

Decrease of the risks related to infectious and non-infectious diseases

As mentioned above, all objectives and consequent measures aim at decreasing the infectious and non-infectious diseases and improving the quality of human life. Cardiovascular diseases, cancer, diabetes, respiratory and lungs diseases are the most frequent non-infectious diseases in the Slovak Republic. In order to decrease an appearance of those diseases and related complications, it is necessary to look for the risk factors in environment, people's behaviour and influence the risky factors for health. It is also necessary to pay attention to mental health. These conclusions are confirmed by the fact that premature deceases in the age groups of 0 to 64 are much higher in the Slovak Republic than in the EU member countries. In the last five years, the premature deceases in the male population doubled in comparison with the EU member countries. ⁶ In general, the more intelligent and educated people we are, the more hope to influence our lives by education we have. What can we do to improve this state? Some steps currently applied in the most regions of the Slovak Republic as follows:

- prevention of an ischemic heart disease and other cardiovascular diseases by complying strictly with the instructions,
- activities performed in order to decrease the risk of cardiovascular diseases related to a primary prevention,

- implementation of continuous epidemiological studies dedicated to prevalence of the most risky factors of the cardiovascular diseases and cardiovascular mortality,
- cancer screening (breast tumors, cancer of uterine cervix, colon, rectum, lungs and dermal cancer),
- standardisation of diagnostic and curative processes and their periodical revision,
- improving the conditions for the recovery of patients with a cancer,
- improving the quality of a terminal care for oncological patients,
- education of people on the importance of regular and preventive oncological tests,
- coordination of a preventive mental healthcare,
- monitoring of an incidence and prevalence of some special mental diseases,
- monitoring of the depression and depression-related diseases,
- monitoring and analysis of allergies and determination of the preventive activities,
- education of people on eating habits related to the allergy,
- monitoring of an incidence and prevalence of the osteoporosis,
- education on a primary prevention of osteoporosis in the childhood,
- creating educational programs for people in order to increase the awareness related to the risk factors contributing to the formation of a diabetes.

A very negative phenomenon is also a low level of sport activities of the Slovak people. The duration of a physical activity rapidly decreases with the age. The young prefer recreational sport. The elderly categories prefer walking. However, there has been a very high percentage of respondents in all age categories who are not interested in an active relax not even one hour a week. This increases the percentage of overweighted people belonging to the first category of obesity (9%) [4].

The environmental health as an educational problem

Our survey is based on five requirements related to environment (note: in our opinion, they shall be perceived as the parts of the basic human rights!):

1. fresh (uncontaminated) air,
2. availability of healthy and clean water,
3. clean and nutritious food,
4. safe habitation,
5. fixed global ecosystem.

A question related to those basic conditions emerges: What is a current situation in the Slovak Republic? According to latest statistic data the term *environmental health* implies the following areas:

- a man's birth, human life and the causes of death, the environment he has been living in during his life,
- individual nutrition mode (its comparison with a rational nutrition model),
- mutual interaction – *health and environment*,

- to meet the basic requirements for healthy environment,
- a social status of people,
- an impact of the environmental factors on man's health (including e.g. working activity, risks resulting from the character of a working activity),
- a work position as an indicator of an environmental risk,
- a global risk ratio resulting from the particular lifestyle,
- an influence of the society on the human orientation towards the environmental health,
- a contribution of positive motivation leading to increasing of prevention,
- demographic development as an objective-subjective factor,
- abundance financial resources as well as the poverty as limiting factors of Slovak population which create the problematic situations when ensuring the optimal state of environmental health in the society.

Certain factors mentioned above were subject to our research in the particular school conditions. We also noticed the regional diversities that influence a formation of attitudes towards one's lifestyle [3].

Conclusions drawn from the research

As the other studies showed it was essential to start with the innovation of curricula for the school subjects particularly those related to natural sciences (environmental education, chemistry and biology). On the basis of a detailed analysis of the subjects mentioned above and differentiation of pupils and students to individual age categories the new aims were defined for the implementation of environmental health in the school system. The curriculum for the first level of elementary schools was based on a curriculum approved in 1997 including the revised requirements for the environmental education, which was incorporated to curricula for all natural subjects. For the second level of elementary schools, the following principles related to the innovation were defined:

- education on environment,
- education by means of environment,
- education of pupils and students in order an environment.

At secondary grammar schools, secondary technical schools and secondary vocational schools, this topic was applied to the curriculum in 1997 and within the program "Health supporting towns" it focused on the local and regional problems related to environmental health and health of the young. An environmental minimum as an important background has been applied in the educational plans of elementary schools and secondary schools since 1996. These facts have enabled us to work out a comparative analysis of the impacts of revised educational contents in selected schools during eight years. In the framework of the "Sanitation of population in the region" the

students were supposed to point out negative factors from environment and man's lifestyle that endanger them and suggest preventive projects in order to be healthy. They worked in groups of 5–6 members. They were supported by a university student that worked this topic out in his thesis (diploma work). Students were mainly interested in those tasks where they could get information about causes of obesity, stress and about sticking tasks of chemical substances in environment. They started thinking about how to eliminate various negative phenomena, e.g. to persuade their parents to have the water analyzed from their springs and wells, not to discharge a domestic waste into the streams, not to create illegal waste dumps, to organize a separated collection of waste, to regulate the eating habits etc. However, there was also a group of skeptics among them who thought there was no way. About 50% of the students would like to learn by means of this method in the future.³ The results we have obtained are didactically very interesting. They point out a positive change in the student's attitudes towards their own environmental health.

In order to have a complex view within the topic of environmental health, it is also interesting to find out the state of implementation of this topic in the education at the Slovak universities. Medical and veterinary schools are the most active in the field of environmental health. The schools that have environmental education in their specialisation are less active. This is one of the reserves where it is possible to improve the awareness on how people can influence their environmental health.

There are two aspects that need to be evaluated within the formation of environmental health. The first aspect is a human himself, his attitudes to his own environmental health and his intellectual ability to promote responsible approaches. The second one is an ability of the society and its structures to create the essential conditions for people so as they could be sure of the basic living conditions that were mentioned in the first paragraph of this work. Agenda 21 brought forward several new requirements that have not been fulfilled yet. Every point mentioned here need to be analyzed in the particular conditions. In general, we can say that there is not enough attention paid to this field in the world. In the Slovak Republic the situation is fixed in the first three items yet but there is not satisfactory e.g. in the nutrition of children and population in general. The field of the food safety reports a very similar situation. Especially an uncontrolled and unchecked food import represents a potential risk to health of a wide community. In 2003, we recorded an increase in the imported over-limited food samples tested for foreign substances by 3.5%. However, an effective and systematic controlling mechanism that could guarantee a safety food distribution is still lacking [6].

Conclusion

It is also obvious from our research that an educational system in the Slovak Republic has to have a tendency to improve our environmental health. Our school

system still lacks qualified teachers who are able to implement the creation and maintenance of optimal environmental health into the program of natural subjects. We suppose it is also possible to incorporate the environmental topics into the education of other subjects, e.g. slovak language, foreign languages, history etc. in order to obtain information about the importance, sensitivity, time planning and necessity of environmental health for the students' future life. The results obtained at particular elementary schools revealed that it was necessary to decrease a ratio of abstract facts in all subjects particularly in chemistry. The results also revealed that it was better to place an emphasis on the innovative methods [7]. A so called "topic work" seems to be very convenient in order to create better conditions for a learning process in 8th and 9th classes of elementary schools.

It is also essential to change the negative attitudes of students against chemistry. This can be achieved by means of a systematic change in the chemistry curriculum. We have to keep to the basic principles but at the same time, the students should obtain information which could help to form their attitudes towards their own environmental health.

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ROLA EDUKACJI DOTYCZĄCEJ ŚRODOWISKOWEJ OCHRONY ZDROWIA WŚRÓD OBYWATELI REPUBLIKI SŁOWACKIEJ

Streszczenie

W pracy omówiono czynniki i interakcje mające wpływ na tworzenie środowiska ochrony zdrowia wśród obywateli Słowacji. Na podstawie wyników badań przeprowadzonych wśród uczniów szkół podstawowych autorzy próbują określić czynniki mające wpływ na upowszechnianie problematyki

zdrowego odżywiania się i promocję zdrowego stylu życia w ramach edukacji przyrodniczej w systemie szkolnictwa Republiki Słowackiej.

Key words: edukacja, środowiskowa ochrona zdrowia, środowisko ☒