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LEADING ARTICLE

Highlights for improving school health through physical education and sports activities

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Structures involved in the provision of health care to the population

Several structures have assumed through their mission the provision of health care to the population, both by specific methods and means in the case of the Ministry of Health, and by the means of physical education and sport in the case of each of these. As a result, these structures participate in the public health care provision policies:

- Ministry of Health – through public health activities
- Ministry of Education – through school and university physical education and sports activities
- National Authority for Sport and Youth – through sports activities for all

1. School physical education and sports activities seen from the point of view of health

The *health – public health – physical education* axis, with the respective missions of each component, their interferences and common objectives, should be seen as a vertebral spine along which all national health policies, including physical education and sport, should be developed and implemented (Fig. 1).

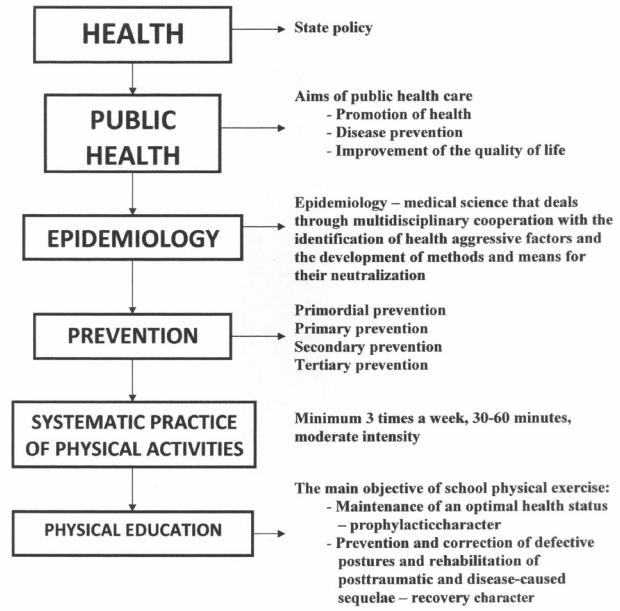

Fig. 1 – The health-physical education and sport axis.

a) **Health**

General medicine includes two compartments:

- prevention (medicine of healthy subjects, MHS);
- rehabilitation (medicine of ill subjects, MIS).

MHS is not opposed to MIS, they both involve the same activity at different levels of the same objective. The redefinition of the GP as a family physician involves knowledge and total commitment to the promotion of MHS at individual, familial and community level. MHS is the most economical and at the same time the most laborious activity of the family doctor, being the only efficient activity in the time perspective (1).

Health as a general term has been defined by WHO as a state of complete physical, mental and social well-being, which is not reduced to the absence of disease or disability (***, 1998).

The definition reveals three main dimensions of health: *biological* (physical), *psychological* and *social*.

The determining factors of health and their weight in the provision of health care are as follows (2):

- lifestyle – 51%
- biological factor – 20%
- environment – 19%
- health care system – 10%

The lifestyle includes several components by which people carry out the major aspects of their lives such as: work, recreation, eating, problem solving, coping with daily stress etc.

The way in which individuals allocate and use their free time – recreational style – also affects many dimensions of health and good humor. People may engage in multiple forms of recreational activities, including those oriented towards physical exercise, which mentally stimulate them and allow them to socialize with others. However, some recreational styles can be harmful, even dangerous: for example, the strong orientation of physical activities towards competitiveness and aggression may cause a deterioration of social relations or lead to stress.

The lifestyle is a life strategy that an individual chooses, which orients all his/her particular manifestations, has a positive or negative influence on the people's health and is imputable to a person (Bocu, 2007). These habits and practices are first taught in the family; the first 7 years of education provided by the family mean much more than

is usually admitted, laying the foundations of a lifestyle with long term consequences on the health status. Starting with the age of 6-7 years, the child goes to school; but the Romanian school does not yet have a pragmatic character, it does not train pupils for life, it does not teach them "how" to live, so that children mostly accomplish their lifestyle within the family. Statistics show that more than 60% of the world's population do not perform the recommended 30 daily minutes of moderate physical exercise. Under these circumstances, the risk for a cardiovascular disease is 1.5-fold higher than in the rest of the population (***, 2002). Regular daily physical exercise is a basic component of the prevention of chronic diseases, along with a healthy diet and the absence of smoking. Many scientific experiments and data have shown that regular physical exercise physically, socially and mentally benefits both male and female individuals of all ages, including disabled persons.

b) **Public health**

Public health combines multidisciplinary and inter-sectorial approaches. The aims of public health care are *promoting health*, *preventing disease* and *improving the quality of life* (*prolonging good quality life*) (Lupu et al. 2004). These are implemented through organized efforts and the efficient use of the material and intellectual resources of society and by individual initiatives (Conference "What is public health ?", Debreczen, 1992) (3).

To be declared *healthy* or *clinically healthy* following an annual medical check-up in the case of school children is a desideratum. The percentage of those declared healthy should be as high as possible or should increase following the methods and means applied through state policies.

c) **Epidemiology**

Epidemiology is the medical science that deals through multidisciplinary cooperation with the identification of health aggressive factors and the development of methods and means for their neutralization. We consider that the disciplines collaborating for disease prevention by specific methods and means include physical education and sport, as well as systematic extracurricular physical exercise. Aimed at detecting the changeable causes of disease, epidemiology plays a central role in prevention (Bocşan, 1999). Epidemiology also means the prevalence or the incidence of a disease in the population, which is not necessarily infectious; for example: epidemiology of obesity; kyphoscoliosis – epidemiological data (4); epidemiology of sudden death (Brion, 2010).

d) **Prevention**

One of the three attributes of general medicine practice is primary health care, with the application into practice of prevention steps. There are four levels of prevention, which correspond to the various phases of evolution or absence of the disease: primordial, primary, secondary and tertiary prevention (Bocu and Tache, 2004).

Prevention represents all medical-sanitary measures that are taken to prevent the appearance and spread of diseases. As a branch of medicine, it deals with the study and the application of prophylactic measures (5). Prevention can no longer be reduced to its classical methods. The medicine of healthy subjects aims to actively protect health by using systematic physical exercise, trips and life outdoors, natural factors for the strengthening of the body (air, sun, mountain, sea). Physical exercise plays a particular role in coping with and reducing daily stress, it helps maintain the ideal weight, etc. MHS promotes a rational scientific diet, fighting dietary excess that may lead to obesity and other nutrition diseases.

Physical education and sports activities are part of all four levels, but the first two, the primordial and primary levels, have the most important mission. Primordial and primary prevention requires the adoption of adequate national health policies and programs, aimed at a national anti-smoking campaign, launching a healthy diet program, preventing arterial hypertension and promoting regular (systematic) physical exercise (Bocşan, 1999; Lupu and Zanc, 1999; Bocu, 2007)

e) **Systematic practice of physical exercise**

The systematic practice of physical exercise means a minimum frequency of 3 times a week, for 30-60 minutes, with a moderate intensity. The frequency of physical education classes in the school curriculum is 1-2 hours/ week. It results that the difference of 3-4 hours must be provided by extracurricular activities of school and university sports associations.

The following aspects are found:

- An insufficient number of curricular physical education classes for the attainment of health objectives.
- A need for individual extracurricular physical activities to cover the difference of physical exercise requirements.
- The necessity to create a framework in order to attract a large number of participants to extracurricular physical exercise activities – creation of school (university) sports associations.
- A need to make sports teaching facilities available, ensuring 4-5 sqm/pupil; 6 sqm/student according to territorial planning and building norms.

f) **Physical education**

Physical education and sports activities are part of activities included in the school curriculum as a result of its mission to promote health and health education. This is why the general aims of physical education are those of public health, with different specific means of application. The practical physical education classes lay the foundations for the acquisition of correct life skills as well as a lifestyle favorable to health. The lifestyle refers to the attitudes, habits and behaviors of a person in daily life. Physical education and sports activities are only a part of the systematic physical exercise activities required for the attainment of the aim to provide health. Because the notions related to the style and way of life involving physical exercise activities have a predominantly practical but also a theoretical character, these theoretical notions should be taught in school as additional interdisciplinary lessons, within a larger social and civic competence training framework.

2. **Medical exemptions**

A second highlight is that of medical exemptions from physical education and sports classes. An important

orientation and working instrument for school health is represented by the *annual health check-up*. The analysis of these check-ups shows that the most frequent types of diseases found in schools are in percent order as follows:

- obesity and thyroid dysfunctions (nutrition diseases)
- refractive defects (eye diseases)
- arrhythmias and heart valve diseases (cardiovascular diseases)
- spinal distortions and posture defects (physical deficiencies)

All diseases included in the WHO nomenclature system are codified in order to facilitate their monitoring and to simplify statistical calculations. The analysis of annual check-ups performed by school doctors shows that the health status of young people is related to the presence or absence of sports teaching facilities for the practice of physical and sports activities in the respective school units.

We present the two main causes of the numerous medical exemption certificates found among pupils and students:

a) The inadequate school curriculum requires a real differentiated application, with the verification of physical fitness in the school and university population every 6 months and the assignment to the adequate physical exercise category and activities.

b) The evaluation system should be interactive, i.e. accepted by participants in sports activities through additional options compared to the existing one. All physical education and sports activities, whether curricular or extracurricular, should be monitored by a computerized system, in order for pupils/students to develop portfolios of activities, with a view to the final evaluation. The current evaluation system is unilaterally imposed by the teaching staff and is accepted by students only to a small extent. Also, the content of the curriculum should be carried out in a team or at least in tandem by the teaching staff, so that modern teaching, monitoring and evaluation methods can be introduced.

As part of our personal researches, we provide the *SpManager 2009* evaluation system as an interactive method developed in order to stimulate pupils/students to participate in physical education and sports classes/practical work, as well as extracurricular activities, with pleasure and without stress. The method consists of software aimed at monitoring physical education and sports activities performed by pupils/students during the academic year, in order to develop the annual *portfolio of activities*, required for the final evaluation (Bocu et al., 2008). The optimal solution of application is the performance of activities in collaboration, so that the modern technical teaching, monitoring and evaluation modalities are under control.

3. Role of physical education and sport in the acquisition of key competences in the education system

The National Early Education Curriculum is focused on the physical, cognitive, emotional and social development of children, on the early correction of potential development deficiencies. The National Primary and Middle School Curriculum is centered on 8 key domains that determine the pupil's training orientation. High school education is focused on the development and the diversification of key competences and the acquisition of specific competences depending on specialization or qualification (***, 2010).

In order to understand the contribution of physical education and sport to the acquisition of key competences, we provide a list of these competences, followed by a brief fundamentation of the National Curriculum based on these competences. References to physical education and sports activities will be included.

Key competences

1. competences to communicate in Romanian and the mother tongue, for national minorities;
2. competences to communicate in foreign languages;
3. basic competences in mathematics, science and technology;
4. digital competences to use information technology as a teaching and knowledge instrument;
5. social and civic competences;
6. entrepreneurship competences;
7. cultural awareness and expression competences;
8. learning to learn competences.

Fundamentation of the National Curriculum

- Each discipline in the National Curriculum will contribute through the school programme and the evaluation system (including physical education) to the acquisition and development of competences in the 8 domains of key competences.
- The National Curriculum is fundamented on the 8 domains of key competences that determine the pupil's (student's) training orientation from the point of view of lifelong learning.
- The competence to learn involves the capacity of a person in training to build new knowledge on their previously acquired knowledge and life experience, in order to use and apply knowledge and skills in a variety of contexts: at home, at the work place, in professional education and training.
- Building on these competences, a person should be able to access, acquire and process new knowledge and skills.

We consider that physical education and sports activities can successfully contribute to the acquisition of *learning to learn competences* and *social competences*. In what follows, we present the essence of these key competences, seen from the point of view of physical activities.

Social and civic competences

- Accumulation of knowledge, methods and means for the acquisition of physical exercise skills and abilities, useful for an optimal mental and physical health state.
- Accumulation of knowledge regarding the way in which the acquisition of these skills and abilities is influenced by a lifestyle favorable to health.
- Accumulation of the necessary knowledge regarding the way in which individuals can become able to cope with stress and frustrating situations.

Learning to learn

- Accumulation of theoretical knowledge regarding the objectives of public health care, the general and specific objectives of physical education and sport (hence the need

for theoretical classes referring to all prevention aspects, including those related to physical education in school – senior classes and university).

- Accumulation of practical knowledge for the acquisition of motor skills and abilities (hence the need for more physical education hours in the school and university curriculum, required until the end of the period of growth and development of the organism).

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