

THE IMPORTANCE OF PHYSICAL EXERCISE IN PRESCHOOL AGE

VOICA (VASILE) Georgiana -Ștefania¹, TEODOR Dragos², TEODORESCU Silvia Violeta³

Abstract

Low physical activity associated with obesity constitutes one of the most current health problems among children worldwide. A large number of studies show that regular physical activity brings benefits to children's health. In the 22nd century, children spend too much time in the virtual world (internet, social networks, video games) and too little time on the sports field or in other physical activities, which negatively influences their morphological and functional development.

Objectives. The paper aims to emphasize the importance of exercise in preschool age, the benefits it induces to the body, as well as the relationship between exercise and health.

Method. Review of literature addressing the relationship between exercise and health at preschool level, considering the relationship between child development stages and exercise.

Conclusions. The estimate of the World Health Report (2000) is that physical inactivity causes 1.9 million deaths worldwide annually. Taking into account the impact that sedentary lifestyle has on health as well as the contribution of regular physical activity for the harmonious physical development of the preschool child, we must act accordingly by embracing a preventive behaviour based on physical activity and balanced caloric nutrition, which will help us prevent the occurrence of chronic diseases and substantially reduce health care costs.

Key Words: physical exercise; health, preschool, harmonious development, obesity.

Introduction

The human cost of being sedentary lifestyle is unacceptable as the children are the future of any nation. Physical inactivity is a major public health challenge and is considered by health experts to be a global epidemic. The estimate of the World Health Report (2000) shows that physical inactivity causes 1.9 million deaths annually worldwide. Depending on the objectives we pursue, we believe that regular physical activity ensures a harmonious physical development or the formation and consolidation of better motor skills and qualities. Physical activity related to the objectives pursued, can have a very diverse structure and form, achievable through physical exercise. It can be adapted to any age with the aim of harmonious growth and development, of optimizing the motor qualities in the case of children practicing a performance sport.

Children, more than adults, show the urge to satisfy the need for movement. This can be solved both by daily activities at home or at play, but more by exercises specially designed, in order to influence their harmonious development, improve muscle tone and overall resistance of the growing organism.

Definition of terms

Physical exercise according to Alexe (1974) is "systematically repeated motor act, which constitutes the main means of achieving the tasks of Physical Education and sports".

Cârstea (1997) believes that physical exercise represents the didactic tool that helps us organize a form of structured and repetitive physical activity, carried out in order to maintain or improve the physical capacity and health of the body or for practicing a sport.

Bota (1999) in the chapter "Content and form of physical exercise" presents the classification of exercises according to several *criteria*, of which we have chosen as an example those that are most important at the level of young schoolchildren and that can include others:

- required biological systems;
the nature of the goals.

The relationship between regular physical activity and health is widely argued by numerous studies.

Health is defined by the WHO (1946) as that fully favourable condition from a physical, mental and social point of view and not merely the absence of disease or infirmity.

Sedentary behaviour is "any behaviour characterized by an energy expenditure ≤ 1.5 metabolic equivalents (MET) while the body is in a sitting, reclining or vertical position (Tremblay et al., 2017).

The term "*physical activity*" should not be confused with "exercise", a subcategory of physical activity, which is planned, structured, repetitive and aims to improve or maintain one or more components of physical condition.

Physical activity promotion policies aim to ensure that:

¹National University of Physical Education and Sports Bucharest, Romania, manager@abcfitness.ro

²Ovidius University of Constanta, Faculty of Physical Education and Sports, Constanta, Romania

³National University of Physical Education and Sports Bucharest, Romania

- in cooperation with the relevant sectors, physical activity is promoted through everyday life activities;
- walking, cycling and other forms of active transport are accessible and safe for everybody;
- schools have safe spaces and facilities for students to spend their free time actively;
- quality physical education helps children develop behaviour patterns that keep them physically active throughout their lives;
- sports and recreation facilities offer everyone the opportunity to play sports.

The global action plan regarding physical activity 2018-2030: more active people for a healthier world meets the updated guidance requests and the framework of effective and feasible policy actions to increase physical activity at all levels. It also responds to calls for global leadership and stronger regional and national coordination and the need for a response by the whole society to achieve a paradigm shift, both supporting and appreciating all people who are active on a regular basis, depending on the capacity and throughout life (Global action plan on physical activity 2018-2030: more active people for a healthier world <https://www.who.int/publications/i/item/9789241514187>).

Referring to physical activity for a harmonious physical development in pre-schoolers and young schoolchildren, we consider that exercises to influence the systems: neuromuscular, cardio-respiratory and endocrine-metabolic, can have a simpler or more complex structure, dynamic / static parts, can be performed at a slower or more alert pace and implicitly with more intense or moderate effort.

According to the objectives pursued, physical exercises according to Bota (1999), the quoted work, and supplemented by us, applicable in our case as well, are classified and aim:

- to develop the motor qualities: speed, strength, endurance, coordination;
- for harmonious physical development: analytical, for each segment and synthetic, for several segments and muscle groups
- learning and improving basic motor skills (walking, running, jumping, throwing-catching our note) and utilitarian-applicative (climbing, crawling, balance)

Applied in an organized and systematic way, physical exercise is introduced into the daily schedule of preschool children. It meets in moments that are also found in the documents for early childhood education. These are nominated as the gymnastics moment, the refreshing (or morning) gymnastics, the Physical Education activity which necessarily includes exercises to prepare for effort and warm-up, recreational

activities and whenever the teaching staff deems it necessary.

Regardless of the activity, physical exercises must be correlated with the level and peculiarities of children, be attractive and funny, surprising, so that children enjoy performing them. In carrying them out, it is desired to comply with all the recommendations that gymnastics provides, in terms of correct posture, alternating the segments that perform the movement, alternating the motor qualities within them and performing in the rhythm and tempo, intensity and duration appropriate to the age. The exercises are introduced into the content of the games, so as to increase the attractiveness and involvement of children and also to act on the desire to collaborate and socialize with others.

Relationship health - exercise-obesity

Considered the disease of the century, childhood obesity is a predictor factor which will also be encountered when the child becomes an adult. Studies have shown that more than 50% of obese children will also be in adulthood in this category.

Report HBSC (Health Behaviour in School-aged Children), which refers to health-related behaviours in schoolchildren, at international level, shows that in Romania the levels of physical activity among adolescents are decreasing compared to 2014, while sedentary behaviours are steadily increasing. The HBSC study is conducted every 4 to 4 years by the World Health Organization. In Romania, the study was conducted by Babeş-Bolyai University, Cluj-Napoca, in collaboration with the WHO office in Romania.

The study was conducted on a nationally representative sample comprising a total of 4,567 students, aged 11, 13 and 15 years.

The results of the study conducted in Romania regarding physical activity:

* The percentage of children age 11-, 13- and 15-years reporting participation in physical activities according to WHO recommendations is disturbingly low (17.8% of boys and 10.4% of girls).

The paper Physical Activity Guidelines for Americans (2008) presents solid evidence on the benefits that regular physical activity brings to children's health:

- the improvement of cardiorespiratory and muscle capacity, bone health, cardiovascular and metabolic health biomarkers, body composition, reduced risk of depression.

In order to prevent obesity, physical education in the educational institution, but especially parents, play a particularly important role. Sitting in front of TVs or computers, movies and games, for more than 2 hours/ day means an inactive behaviour that leads in time to the

deterioration of their health. Improving the quality of life is a concern of health institutions in Europe and implicitly of those in Romania, a strategy of good practices in our country being the National Health Strategy 2014-2020 "Health for Prosperity". The main indicator of health status is infant mortality, which is steadily decreasing from 22% /1997 to 5.9% /2018, but is still above 3.5% /2018, which is the EU average.

In order to prevent this phenomenon, education and health programs are needed among children that promote health through movement. At these ages with profound physical, physiological and psycho-emotional transformations with all the specific vulnerabilities, the state of health can be considered an indicator of the health of the communities and a "barometer" for the health of the coming ages" (INS, 2019, National Report on Health of Children and Young People in Romania / 2019, page 9, https://www.google.com/search?q=Tabel+greutate+inaltime+si+varsta&sxsrf=ALeKk01b7Him3cgm5718ItdtO2CyEldIpw:1603085281128&tbm=isch&source=iu&ictx=1&fir=JU-pRDc1EiOoHM%252CfLEaGBSGGGhrRM%252C_&vet=1&usg=AI4_-kRDACdJfU26bcISNnDOodgQIbbiPg&sa=X&ved=2ahUKEwiFmueF9r_sAhVItIsKHdhBASgq9qf6bagcea&biw=1366&bih=657#imgrc=XmvtOSjkrEI29M).

All sources of information, parenting books, specialists, websites, films draw attention to the ever-increasing number of overweight or even obese children at ever younger ages. The fact that obesity appears as the second cause of illness demonstrates that exercise is not sufficiently introduced into children's daily schedule.

Unbalanced diet predisposing factor for obesity

We consider that unhealthy diet, chaotically managed and physical inactivity are the

The frequency of this disease in the world is increasing and WHO informs that about 10% of the world's children are overweight or obese. Of the 250 million obese people, 22 million are children under 5. The emergence of obesity has several causes including the intake of foods with increased energy content and sedentary lifestyle.

Unbalanced nutrition, high in sugar and fat, sodas, concentrated sweets, fast food, some family eating habits are added to the educational, cultural, psychological and socio-economic factors responsible for increasing the frequency of obesity

The contribution of genetic, metabolic, behavioural factors and the family environment adds to these. We consider as favourable factors the quantity and quality of food, family habits regarding nutrition and attitude towards physical activity, a high degree of sedentary behaviour of

main causes for this phenomenon that has become so worrying in Romania as well. Also, rickets sequelae, spinal and limb deformities acquired over the years, adaptation disorders and iodine or iron deficiencies, come to reinforce those stated the above. Children stay less and less outdoors, do not play outside with others almost at all, and the motor activities in their schedule are too few. In table 1. we present indicative data on the age – weight relationship by gender at young ages (INS, 2019, National Report on Health of Children and Young People in Romania / 2019, page 9, https://www.google.com/search?q=Tabel+greutate+inaltime+si+varsta&sxsrf=ALeKk01b7Him3cgm5718ItdtO2CyEldIpw:1603085281128&tbm=isch&source=iu&ictx=1&fir=JU-pRDc1EiOoHM%252CfLEaGBSGGGhrRM%252C_&vet=1&usg=AI4_-kRDACdJfU26bcISNnDOodgQIbbiPg&sa=X&ved=2ahUKEwiFmueF9r_sAhVItIsKHdhBASgq9qf6bagcea&biw=1366&bih=657#imgrc=XmvtOSjkrEI29M).

Table 1 Weight –age relationship for boys and girls

Boys	Age	Girls
25.4 - 45.5 kg	10 years	24.9 - 47.4 kg
22.4 - 39.9 kg	9 years	21.8 - 40.8 kg
20.4 - 34.9 kg	8 years	19.9 - 35.8 kg
18.3 - 30.8 kg	7 years	17.9 - 30.8 kg
16.5 - 26.7 kg	6 years	16.3 - 26.8 kg
14.9 - 23.8 kg	5 years	14.7 - 23.6 kg
13.1 - 19.9 kg	4 years	12.9 - 20 kg
11.8-17.5 kg	3 years	11.5 - 17 kg
10.3 - 14.9 kg	2 years	10.2 - 14.5 kg
7.7 - 11.9 kg	1 year	7 - 11.4 kg
7.1 - 11 kg	9 months	6.4 - 10.5 kg
6.3 - 9.8 kg	6 months	5.7 - 9.3 kg
5 - 5 kg	3 months	4.5 - 7.5 kg
2.4 - 4.3 kg	0 months	2.4 - 4.2 kg

the parents and level of permissiveness related to the time spent in front of the devices (laptop, PlayStation, phone) or in front of the TV, lack of education regarding children's nutrition and diet.

In addition to the many negative influences on a psychological level that it causes (primarily lack of respect and self-confidence), the obese is at risk of developing serious diseases such as cardiovascular ones, high blood pressure, type 2 diabetes, sleep apnoea syndrome, depressions and even some forms of cancer.

In the child's growth and development stages, the behaviour regarding nutrition is also formed, the parents being the main responsible for this. In the diagnosis of nutritional status, anthropometric measurements and comparative analysis between age, weight, measurement results and WHO indicative data are successfully used.



The state of nutrition of children under 5 years of age, 6-7 aroused special interest and even the UNICEF branch in Romania together with the Institute for Mother and Child Protection "Alfred Rusescu" (Bucharest) collaborated in the implementation of a large-scale project (starting in 2004) aimed at the studying the state of nutrition of the child and pregnant woman, categories of population considered vulnerable groups. Among the studies conducted and whose data were released we mention: "Nutritional status of the pregnant woman", "Nutritional status of children aged up to 5 years" and "Nutritional status and iodine status in schoolchildren aged 6-7 years", shows the importance of nutrition status.

In a study conducted in 8 European countries, the predisposition for overweight and obesity in children aged 10 to 12 years was significantly lower in Switzerland, this being attributed to reduced time spent in front of the TV and high levels of physical activity (Herzig et al., 2012). French National Institute of Health and Medical Research (2011-2015) through the report entitled "Retrouver sa liberté de mouvement" shows that the components "on the move" and "nutrition" are essential for achieving an energy balance at all ages.

Recommendations on physical activity for health

WHO (2010) recommends that children and adolescents with ages between 5 and 17 years cumulate at least 60 minutes of moderate and high intensity aerobic physical activity daily and perform exercises to develop muscles and strengthen the bone system. Among the recommended physical activities are: walking, jogging, cycling, playing sports, school physical education or physical activities in the context of the family or community.

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The National Institute of Health and Care Excellence NICE (2009) recommends that physical exercises for muscle strength, flexibility and for strengthening the bone system should be performed at least 2 times a week, divided into periods of at least 10 minutes. Physical activities that exceed 60 Minutes provide additional health benefits (<http://www.sports.gouv.fr>, 2015).

Conclusions

The estimate of the World Health Report (2000) is that physical inactivity causes 1.9 million deaths worldwide annually. Taking into account the impact that sedentary lifestyle has on health as well as the contribution of regular physical activity for the harmonious physical development of the preschool child, we must act accordingly by embracing a preventive behaviour based on physical activity and balanced caloric nutrition, which will help us prevent the occurrence of chronic diseases and substantially reduce health care costs.

There are numerous studies, systematic reviews, and meta-analyses showing that sedentary lifestyle in adults has been positively associated with Type 2 diabetes, cardiovascular disease, metabolic syndrome, and mortality (de Rezende et al., 2014, Proper 2011; Thorp et al., 2011; Verloigne et al., 2016) but in the case of children and adolescents the evidence is not very conclusive (Tremblay, 2011; Biswas, 2015).

Although the benefits that physical activity brings to health are known, sedentary behaviour among children and adolescents due to the excessive use of smartphones, video games, social networks or audio-visual media is increasing.

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