

## **IMPORTANCE OF THE SOCIAL ENVIRONMENT AT SCHOOL AND SCHOOL SETTINGS TO REDUCE MORBIDITY AMONG CHILDREN**

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**Abstract.** Health care for adolescents is a major and very serious problem for any society. It depends on many factors and is directly related to the contemporary stage of development of the Bulgarian school, because the bigger part of the time children spend there. This requires a healthy physical conditions for work and good psychological climate to enable students not only to educate, but to preserve their health, and those who have health problems – possibly overcome them more easily. This study presents and proves the importance of the school environment in this dimension. Here is made an analysis and commentary on social major diseases among children and the role of schools in reducing them.

**Keywords:** children's morbidity, social environment, school settings, social major diseases

### **Introduction**

Health is the greatest value of the human life. Stressful and dynamic life, in the context of globalization and economic crises, seriously threaten the health and worse the health status of the population of the Earth as a whole, but also the population of some small territorial units, as represented by the different countries in the world. Concerned about economic growth, people today around the world often forget that the most essential for any society must be to care for the health of adolescent students and young people. This problem is under constantly researching, studying and controlling at all levels in contemporary and modern democratic states, but legal and situational changes, needed to solve it, is make slowly difficult and sometimes too late.

Children's health depends on many factors, it's must be guaranteed by the state and is therefore directly related to the present stage of development of the Bulgarian school, because most of the time children spend there.

The health status of children in the world is under the supervision of regional and national centers for the protection of public health. Results are very detailed and

extremely reliable, because they examine standard variables in a reliable and time-tested methodology. Unfortunately, however, these results over the last five years are alarming and point us to the need for major changes in living environment, in the way of learning and stereotypes of living of the children.

### **Materials and methods**

Child's body is much more sensitive to various hazardous effects of the environment in comparison with the body of the elderly and is therefore also more fragile. Often in the process of growth, maturation and development during childhood and adolescence appear functional imbalance and number of morphophysiological traits that are characteristic feature of the specific course of onset and development of chronic diseases. According to studies in children and adolescents is detects early growing number of chronic diseases in adults.

At present, 33% of school-age children have chronic diseases. Most of them start at a very early age and it is needs of serious prevention in schools. Experimental clinical and statistical studies of thousands of students, conducted by NCPHP – Bulgaria, finds that now 32.7% of school-age children (6 to 18 years) are suffering from serious chronic socially significant diseases that significantly impede their ability for adequate life and academic development. Furthermore, more than 26.7% have family history of such chronic diseases, i.e. as general, of more than ½ from this contingent of students are included in the range of chronic diseases. (*NCPHP, Bulgaria, 2011–2012*).

The data show a very disturbing facts – the beginning of chronic pains is placed in the kindergarten – 66.9 % and 35.0 % – in primary school age. Undeniable fact is that so how much earlier person starts chronic pain, the more severe is his prediction for the future.

Leading position here have the allergies, that are registered in 50.4 % of cases of starting age, in 47.2 % of cases in middle school age and in 15.1 % of cases in the upper school age. It should not be forgotten, that the allergies account for about 1/3 of any subsequent chronic non-communicable diseases in children from 6 to 18 years.

The proportion of chronic diseases of the cardiovascular system is increases. For the past 10 years they have increased 2.6 times, the highest proportion among schoolchildren have high blood pressure and hypertension – 16 %.

In the same time it is observed that chronic diseases, associated with metabolism, increase. Overweight (HTM) is reported in 7.9%, and obesity is between 15–21%. HTM and obesity have a negative impact on the multiple processes of growth and sexual maturation of students and they resulting in 10 % to 20 % of cases in hyperlipidemia to abnormal carbohydrate metabolism and other disorders of metabolism (mainly obesity and diabetes).

The proportion of the chronical gastrointestinal diseases (gastritis, peptic ulcer disease, etc.) is 5.8%, which is a direct result of excessive stress and poor nutrition in school, also increases.

The data show more serious disturbances in the maturation and development of bone and skeletal system, expressed by increasing the percentage of vertebral deformities (kyphosis and kifoskoliozi) – from 15.0 % to 25.0 %.

It's increases the cases of incidence of neurosis, neurotic reactions and behavioral disorders – 6.3%. The psychological morbidity is in the broad sense, is with a very high proportion – 48.7 %.

Not least, important are eye diseases among children from a very early age. Although not a small percentage of them are due to congenital or acquired early ophthalmic problems, in the majority of eye diseases in children occur early or middle school-age, induced by the increased workload of the visual system and unsanitary conditions of reading, writing and computer usage.

There is a fact that is really important when it comes to health. Although, this fact seems ridiculous at first glance, it has a big importance. Osteoporosis has always been perceived as a physiological condition of old age, but now it becomes a disease of almost all ages, starting also really early in childhood. And especially crucial factor here is the movement. It takes the first place in the effective and so called „strategical“ prevention of osteoporosis in childhood and adolescence, when bone-skeletal system going to forms and builds and the human organism accumulates maximum bone mass.

Scientific studies show also that modern students are burdened with many different in nature negative risk factors that act comprehensively and almost constant and very difficult can to be removed. These are the unhealthy lifestyle, the irrational nutrition, the permanent current stress, the polluted environment, bad habits (smoking, alcohol use, drug addiction) and others. According to experimental data obtained the majority of the pupils are burdened with 5 to 15 and more negative risk factors, which creates the conditions for the subsequent inclusion of such group of pupils in the chronically ill. The data show also, that the level of physical development of school-age children now, compared with the offspring of their peers 10 years ago, expressed through basic anthropometric parameters (height, body weight, chest, arm circumference, waist to the roundabout and others) is significantly reduced as reduced and the level of physical fitness (strength, speed, endurance, etc.).

These changes put children and adolescents at risk status in terms of health, and we must also bear in mind that today's adolescents live in a hostile environment with reduced oxygen environment, which further hinders their breathing - the most important for the life and health vital function.

For the purposes of this study, and in order to trace the current status and influence of the school environment on the live and health of children in the first half of 2013 was held locally survey among 1,000 children from schools in the region of Smolyan, Bulgaria, selected random, which are in the middle school age. The results of this study were compared with national data NCPHP for the

previous two years and on the principle of the comparative analysis were identified the significant regional specificities developed for one year only in a small region, which represents Smolyan region.

### **Results and discussions:**

– **Congestion of students in today's school is one of the dominant factors of extremely negative vadeystvie on health.** On the question „Do you overwhelmed in school?“ with „yes“ responded 68% of respondents, with „no“ – 20% and „feeling average loaded“ – 12%. Direct negative effect of this congestion is reduced ability of children and reducing real efektive time that they can work consciously and possible best.

The largest is percentage of students who indicated that they work full 5 hours – 27%. 4 hours is the actual performance of 22% of the children, 6 hours – of 11% 3 hours – equally. Declining proportion of children, operable 8 hours – only 12%.

**Table 1.** Answers the question: „How many hours you can work complete?“

<b>Complete work (number of hours)</b>	<b>Percentage of respondents (%)</b>	<b>Complete work (number of hours)</b>	<b>Percentage of respondents (%)</b>
<b>1 hour</b>	4	<b>5 hours</b>	27
<b>2 hours</b>	8	<b>6 hours</b>	11
<b>3 hours</b>	11	<b>7 hours</b>	5
<b>4 hours</b>	22	<b>8 hours</b>	12

About 52% spare between 1 and 2 hours, 30% spare between 3 and 4 hours and 5% spare 6,7 hours or more to prepare.

**Table 2.** Answers the question: „How many hours do you dedicate to preparing for school in the afternoon and evening?“

<b>Preparation for school (number of hours)</b>	<b>Percentage of respondents (%)</b>	<b>Preparation for school (number of hours)</b>	<b>Percentage of respondents (%)</b>
<b>30 min</b>	7	<b>4 hours</b>	10
<b>1 hour</b>	24	<b>5 hours</b>	6
<b>2 hours</b>	28	<b>6 hours</b>	1
<b>3 hours</b>	20	<b>7 hours</b>	4

With an average daily load of 7 hours, it is not difficult to calculate how is real working time to a child in middle educational degree – for more than half of the students it is 9 hours, but for some – a lot more. Moreover, it is a matter of

intense mental work. Loading – physical, mental and emotional, is much higher than in mature workers on 8-hour day and 5-day working week. Do not forget, that children, particularly in the upper school age, maintaining its high rate of mental work during the weekend due to physical inability to cope with all school tasks and assignments within five school days of the week.

– **A direct consequence of congestion is the overhead of the visual analyzer**, which reflects adversely on children's vision in two aspects – appearance of visual defects in an essential part of healthy children and enhance already existing eye-problems in another part of the children. On the question „Do you have glasses?“, answers are: „Yes“ – 64%, „No“ – 36%. Of those who wear glasses (whether because of myopia or hyperopia), the highest percentage is of children who have between 1.25 to 2.00 diopters – 32%, which is an essential and very alarming rate. Following them, are those with deviations between 0.25 to 1.00 diopter – 24%, 16% are between 3.25 to 5.00 diopters from 2.25 to 3.00 diopters – 13% and above 5.00 diopters – 5%. The fact that 29% of children have a diopter between 2 and 5, should also alert the serious damages and dangers in term of children's vision.

The study shows that in the last two years 72% of children with ophthalmic problems have changed their diopter: their diopter's reduction is about 11% of children, while the remaining 89% have increased throughout the study period. With 0.25 to 1 diopter have increased 63% children, 18% have increased by 1.25 to 2 diopters, and 8% have increased with 2.5 diopters.

– **A third major blight on children's health is increasingly compelling them hipodinamiya** that naturally arises from their long and painful stagnation of student desks – in class and at home. Its most effective response would be intensification of sporting activities and increasing the hours of sport at school and out of it. Preferences of children are aimed at free activities in various sports – more intense, possibly at school. The number of respondents, they rank as follows: football is a favorite sport of 19%, basketball – 17%, volleyball – 14%, tennis – 10%, swimming, dancing, jogging, aerobics – 5%, skiing, gymnastics, badminton – by 3%.

– **The biggest problem which is a reason for many diseases is the unhealthy nutrition at school**, which translates into two things – skipping meals (expressed in a late lunch) and consumption of unhealthy foods. A key question, asked to students in this connection, is „What type of food do you eat while you are at school?“ 55% of them prefer mainly pasta (pies, pizzas, croissants), 35% – chocolate products, 30% – sodas, juices with artificial sweeteners, coca-cola etc. 13% – sticks, crisps, snacks. The consumption of fruit is low - only 13% of children prefer them, but they say that at school they are not offered a wide variety of fruits. Particularly impressive is the coffee consumption from an early age - over 15% of students in 8,9 and 10 grades claim that they have a great need of tonic drinks (mainly coffee and cola) during school hours.

In this rhythm and way of nutrition, current students do not consume enough

warm fluids in the cold season, have no time for a warm and liquid food because of the long school day, which ends between 14.30 and 15.40 (earliest) for students in upper grades. Many school canteens, in fact, do not work or finish work early. Disturbed daily rhythm of feeding is expressed through the big number of intermediate feedings, which contains chiefly dry, high carbohydrate food with lots of sugar and low protein content. Results are gastritis, digestive disorders and early onset of obesity even in childhood.

**– Unfavorable factor, adverse effects on children’s health is significant and long stay students at the computer** – both for pleasure and for the preparation of school assignments. 30 % of students in Bulgaria spend an average of 3-4 hours in front of monitors, 23 % – about 2 hours, 18 % – 5 hours, 11 % – even 7 hours, and only 7 % stay only one hour. By one side, it is understandable and normally in modern electronic information environment, internet resources to be used to solve the learning assignments. By other side, however, much of contemporary educators in their quest to be innovative in teaching, abusing their requirements for students to prepare reports, projects and papers, which not only takes a lot of their time, but it is especially harmful. Too often they solve problems for using blogs, websites, particularly in special schools students are often required to complete an examination-tests online or enforce their homework online. There is a loss of balance between the opportunities and demands of modern education and ignores the need of children in school to be unloaded.

66 % of children spend between 1 and 2 hours to perform tasks by computer from all his time, devoted to training, 6 % spend 3 hours, 20 % – at least an hour and only 8 % – do not use the computer for this purpose. The most negative it affects on the child’s vision, increase nervous tension, creates them a behavioral addiction, predisposes to the closeness of nature and unwillingness to communicate with others. Among other things, it favors chronological hipodinamiya.

**– Children in school today are overwhelmed - this is an indisputable fact.** Reduced are the number of hours of basic, underlying objects without the reduced amount of learning material. While, are increased classes of information technology, for elective and optional of Informatics too, this was often useless and students stand in social networks and the Internet – its lost school-time and unnecessary visual overload. There is finding the little pupils are inadequate and poorly formed and computer skills. Unfortunately, a significant part of children with secondary education, ending school not know how to create an elementary computer presentation in Power Point format.

**– There are many signs of fatigue in children and they rank as follows in their responses:** 37 % put on first place sleepiness as a major symptom. It is a sign for chronic lack of sleep in children. 27 % feel burning in eyes and headache that are largely associated with ophthalmic problems. The other symptoms of fatigue are arranged as follows.

**Table 3.** Answers the question: „What are your main symptoms of fatigue?“

<b>Symptoms of fatigue</b>	<b>Quota (%)</b>	<b>Symptoms of fatigue</b>	<b>Quota (%)</b>
<b>Drowsiness</b>	37	<b>Decline in mood</b>	16
<b>Headache, burning eyes</b>	27	<b>Hard to remember</b>	14
<b>Loss of concentration</b>	21	<b>Weakness</b>	13
<b>Loss of interest</b>	218	<b>Nausea</b>	12

On second place is the symptom „loss of concentration, difficulty in focusing attention“ – it is referred as the primary symptom of fatigue by 21% of respondents, followed by „loss of interest in the study material and working hours“ – 18 %, „drop mood“ – 16 %, „difficulty in remembering“ – 14 %, fatigue and nausea.

Enormous stress and strain have only one solution, namely: reducing the maximum number of classes per day to no more than 6 hours, putting less independent tasks and then those that do not require a long time to prepare and mitigation of learning content as a whole.

Source of stress in the school is the system appears to be harassment by some students to others, which is a sign of problems in the construction of their value system. Most of the children said, that school meets their needs of friends (71%), of the communication – (69%), of public acceptance and proving yourself (37%). They are willing to follow the logic of social desirability to acquire knowledge about life.

Teenagers, who bullied in school, are more prone to suicide and acts of family violence in adulthood. Many of these young people – 22.5 %, grows up as dissatisfied with themselves and their lives, people.

All the above results of this local survey, confirm the national trend of incidence, and also correspond closely with the results of the international survey „Health Behaviour in school-aged children“ (Health Behaviour in School-aged Children – HBSC), conducted by scientists from the Institute of Psychology Sciences, Research Center „Health Psychology“ and the Center for Population Studies, Bulgarian Academy of Sciences in cooperation with the European Office of WHO (world healthy organization). It includes more than 200 000 students from 41 countries of 11, 13 and 15 year age. (<http://www.euro.who.int>; EUPHA Newsletter 06, 07, 09 – 2012; EUPHA Newsletter 01, 03, 05 – 2013)

Despite the difficulties and problems of children in the contemporary Bulgarian school, their emotional attitude towards it is very positive and it is to evaluate its relevance to their lives and the inability to imagine life without it. All participants in the survey believe that life without school would be unacceptable, boring, useless, lonely, poor. Majority said, that it would probably be easier, fun and free to live without school, but it certainly would be more worried, poorer, quite early on they began to work and would feel not fully fit for full life. „Life without school is life

without memories“, „No school – life dies“, „Life without school is a waste of time“, wrote some of them. These words of theirs oblige us, responsible for the rising generation of children, to create a more healthy and cheerful school environment, what have possibility to meet their expectations and give them the opportunity to grow up healthy, educated and productive citizens of society.

### **Assessment of the conditions of the school environment:**

#### **Favorable:**

- Good informational environment – provides students books, textbooks, internet-relation;
- Very good infrastructure and facilities – suitable furniture for sitting and writing;
- Good sanitation – enough light, enough heat assure, optimal working area and space;
- Students in special schools were selected according to their interests, giving them the opportunity to grow and develop in a similar social environment.

#### **Disadvantages:**

- Longer school day;
- Not enough conditions to ensure proper nutrition;
- Not all of them are provided with appropriate and sufficient conditions for sports, learning module “Tourism” is located in the weekend, which is not appropriate for the children – they need it will during the school week;
- Overloading, excessive requirements;
- Strain and stress.

### **Conclusion**

Registered serious breaches in health, physical development and physical fitness of modern generation of children and adolescents of school age, necessitating the implementation of timely changes. Only for the period from 1989 to 2012 the incidence among them has grown more than twice. This urgent needs child care in schools to prioritize and to subsidize targeted. Urgent is the implementation of intensive and effective preventive health and medical activities and change the adverse conditions of the school environment in order to restore the status of the school doctor - thus creating the conditions for systematic and complete implementation of the annual anthropometric measurements, screening programs and preventive medical examinations in schools. At the health laboratories in schools should work doctors, not only nurses.

The incidence in children is a significant demographic problem, because of the condition and potential of this age contingent depends not only the status of the remaining age forces, but also to every nation as a whole.

**NOTES**

1. <http://www.euro.who.int> – Official site of World Health Organization
2. <http://www.ncphp.govtment.bg/> – National Center of Public Health and Analyses
3. EUPHA Newsletter 05 - 2013
4. EUPHA Newsletter 03 – 2013
5. EUPHA Newsletter 01 – 2013
6. EUPHA Newsletter 09 – 2012
7. EUPHA Newsletter 07 - 2012
8. EUPHA Newsletter 06 - 2012

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