

THE CONTEMPORARY “CIVILIZED” ENVIRONMENT – A PREREQUISITE FOR THE OCCURRENCE OF SOCIALLY SIGNIFICANT CHRONIC DISEASES IN CHILDREN

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If the child in the Long Day of its childhood – age from 6 to 18 (the period we have studied) is in poor health state, then, at some time in the Beginning, in the Dawn of Life (conception, intrauterine development, infant age), when the organism is still immature, not fully formed and very poorly protected, there have been certain negative health effects. The negative effects in early childhood leave severe, long-term sequences for all life long, as the child organism, compared to the adult one, is much more sensitive and vulnerable at external impacts.

THE AIM of the survey is to investigate the prevalence of chronic socially significant diseases in child and adolescent age (6 – 18 years) and, in particular, to study the role and impact of the complex of the most prevailing risk factors in the current “civilized” environment that provoke their appearance and development.

Material and methods: The survey covered 11297 schoolchildren, aged 6 – 18 from Sofia schools. Of them 2312 children were clinically examined and 8985 were investigated statistically-documentary. The methods used were: anamnesis, clinical, anthropometric, physiometric, biochemical, questionnaire, psychological, statistical-documentary, etc. (2, 4, 6, 7)

Results and discussion: The results from the conducted surveys (Cv. Popivanova *et al.*, 1995, 1999, 2000, 2003, 2005) (2, 3, 4, 5, 6) concerning risk factors and problems that, in the Long Childhood age (6 – 18 years) impair seriously the health status and become a prerequisite for the occurrence and development of chronic socially significant diseases show:

High prevalence rate of chronic socially significant diseases in the age 6 – 18 years - 32.7% of the children have severe chronic diseases, characteristic for the adult age and 26.7% have family history of such diseases. Only 15% of the whole children population are practically healthy children (2).

Allergic diseases are leading by prevalence rate – 50.4% (in the first school grades), 47.2% (in middle grades) and 15.1% (in higher grades). An alarming fact is that in one third of the cases those allergic diseases become a prerequisite for the appearance of other severe chronic diseases in childhood and adolescence. **Mental morbidity**, in the broad sense, is found in 48.7%. **Arterial hypertension and hypertensive reactions** dominate – 16%. **Overweight** is observed in 7.9% - 11% and **obesity** – in 21 – 25%. **Neuroses and neurotic reactions** are found in 6.3%, **chronic gastrointestinal diseases** – in 5.8%. There are **impairments in the maturing and development of the bone-skeletal system** – increased rate of spinal deformations – 25-30%, disturbed osteogenesis processes and creation of prerequisites for osteoporosis development.

The fact that the clinical Onset is yet at life start – age 3-6 years – 66.95% of the cases - is alarming. It is well known that the earlier a chronic disease has started, the worse its prognosis is.

RISK FACTORS AND PROBLEMS, provoking chronic socially significant diseases. The data show that the children nowadays are burdened by numerous, diverse **risk factors – 5, 10, 15 and more.** Those factors affect the organism complexly, simultaneously and almost permanently, thus it is very difficult to mitigate them and even harder – to eliminate them.

FAMILY HISTORY

A very high level of family predisposal is registered – 40 to 80% mostly for the following diseases: obesity, diabetes, arterial hypertension, chronic gastrointestinal diseases. The family history is currently increasing its etiopathogenetic effect because of the unhealthy lifestyle followed by both parents and children.

RISK EFFECTS ON MAJOR VITAL FUNCTIONS

NUTRITION

Disorders in the nutritional model and regime (We shall mention only some risk factors): **“No breakfast”** – risk factor of particular significance in early childhood and early school age ($p < 0.01$).

“Preferences to unhealthy foods” – sweet foods with more sugar, picnic food, sandwiches, restricted consumption of milk and dairy products, of fruits and vegetables. This is a risk factor with outlined statistical significance in all school age periods ($p < 0.01$).

Disorders in the diurnal regime (We shall mention only some risk factors): **Insufficient night sleep** (Less than 7 hours every day) – the possibility for adequate daily recovery of the organism is disturbed ($p < 0.01$); **Late going to sleep in the evening – after 23.00”** – a significant risk factor ($p < 0.05$) as the cyclic diurnal rhythm of the organism is disturbed together with the course of the physiological processes synchronous with natural cycles ($p < 0.01$).

RESPIRATION

Polluted environment

Chronically ill and healthy children currently record significant changes in chest circumference and significant increase of the interval of the difference between the chest circumferences at maximum inspiration and expiration at rest, that is, children nowadays use maximally their lung capacities which puts the respiratory system at increased health risk in the presence of additional physical loadings ($p < 0.001$) (3, 4).

PHYSICAL ACTIVITY (main factor and vital condition)

Hypodynamia

Children nowadays have serious manifestations of hypodynamia – 50.98% of the total population of chronically ill and healthy are very immobilized. Hypodynamia impedes the normal course of the processes of growth, maturing and development. The physical development and physical capacity of those children is at significantly lower level. The

age dynamics of the development of anthropometric indicators is uneven and with a one-year delay. The osteogenesis processes are disturbed, risk for osteoporosis occurrence is created ($p < 0.001$) (3, 4).

UNHEALTHY BEHAVIORAL STEREOTYPES

Hazardous habits (smoking, alcohol consumption, drug abuse). Smoking begins in early age: 11.0 ± 0.26 yrs (girls), 11.0 ± 1.45 yrs (boys) ($p < 0.001$). The relative rate of children exposed everyday to passive smoking in the family environment is 26% and in public environment – 31.3%. The parents, rearing and breeding their children, who set a poor example in a tobacco smoke environment, are numerous: 52.6% of the fathers and 57.5% of the mothers are regular smokers. Children using alcohol after 13 years of age are 60% of the boys and 54% of the girls. More than 3% of all children have tried a “drug” after the age of 12 (5).

PSYCHOSOCIAL “STRESS” ENVIRONMENT

The “**family**” as an important socialization sphere is a serious risk factor because of its impaired functions. The highest place in the etiogenesis of the development of chronic diseases in childhood belongs to:

“**Lack of one or of both parents** – divorce, death, working abroad etc.”, followed by

“**Poor family relations, scandals, harassment**” ($p < 0.01$) (2)

“**Child rearing in preschool age mainly by the grandparents but in a common household and 3 generations living together, involved in the breeding (children, parents, grandparents)**” – this is a family situation carrying significant health risk ($p < 0.001$) (2). The established “conflict” between the generations – different views, interests and approaches to child rearing and breeding - reflects directly on to the child who is yet unprotected and has no choice ($p < 0.001$).

A similar situation is very characteristic for our Bulgarian conditions and needs additional investigations.

“**School**”, with its ineffectively organized system and unhealthy environment for education and training is a significant health risk factor ($p < 0.05$) (2, 5, 6).

Of all above mentioned risk factors, a particularly serious prerequisite for occurrence of chronic socially significant diseases is created by those factors that affect permanently the organism (polluted environment, systematic unhealthy nutrition) and by those through which “stereotypes” and dependences” are established in children’s behavior (immobilized lifestyle, smoking, alcohol consumption, drug addictions).

DISORDERS IN THE ADAPTATION ABILITIES OF CHRONICALLY ILL CHILDREN

At morphological level, the body mass and the strength (mainly of the right arm) decrease ($p < 0.01$). **At psychosocial level**, the social communicability is impaired, the education motivation is reduced, the lessons are hardly learnt, various states of isolation and depression are experienced ($p < 0.01$); **at biochemical level**, the hormonal activity of the sympathicoadrenal system (SAS) – a strongly responsible system in stress conditions – is reduced (2).

CONCLUSION

The great incidence of chronic socially significant diseases in child and adolescent age, the complex effect of numerous, various risk factors (5, 10, 15 and more) on children's organisms, the everyday presence of those factors in the current "civilized" environment, their long-term, almost permanent impact covering all life stages (conception, intrauterine development, birth, following periods), the impairment of fundamental vital functions (respiration, nutrition, physical activity), the parallel effect of risk factors on all generations – children, parents, grandparents, the great difficulties in restricting and mainly in eliminating the negative risk effect, as well as the high hypersensitivity and vulnerability of the child organism at external impacts, create more and more true prerequisites for onset in child age not only of chronic socially significant diseases, but also for the occurrence and development of more serious disorders in metabolic processes, including impact and occurrence of metabolic disorders in the deeper genetic structures and cell functions with further possible development of "congenital malformations" and "rare diseases".

According to the European requirements (1) in our experimental practice are implemented activities and health intervention programme for prevention of chronic socially significant diseases.

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