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HEALTH CONDITION OF CHILDREN IN INDUSTRIAL AREAS

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An ecological safety as a constituent part of the national safety of the Republic of Kazakhstan is the obligatory condition of the stable development and coming forward the base of keeping natural systems and supposition of corresponding quality of the environment.

The environment is one of the factors influencing on children's health. By numerous researches were exposed reliable link between pollution of the atmospheric air with morbidity and physical development of children.

Health condition children the settlement, its protection and strengthening are the central problem on the all stages of reorganization of society, so far as in the base of perspective de3velopmnet of nation is laying the health of the rising generation. The special significance this problem gains in accordance with changes of social and economical and ecological condition.

The human is the greatest stage of development of living on the earth organisms. I.T.Frolov said: "Human is a biosocial essence, genetically linked with other forms of the life, but distinguished from them owing to ability produce labor instruments possess the articulate speech and conscience, creative activeness and moral self-consciousness".

By data of S.Y.Kagonov (1992-1996) at exposure of bronchopulmonary pathology let to exposure the following among children: often gets ill children with keen respirator infections in a Northern industrial district more than in Southern one. This reliable difference conditioned by distinctions in the level of pollution of the atmospheric air and it does not depend on tobacco-smoking of parents and keeping animals at home, because the last indices did not have reliable distinction($p>0.05$).

The health of child population is formulated under the influence of complex complexion of social-hygienic, biologic and ecologic factors, so the problem of saving health of child settlement can not be considered without account of changing conditions of an environment and must be based on a complex method of approach [1].

In connection of that in present time equal and the same for all children the general education do not guaranty a quite intensive development of their abilities in one or other branch of knowledge, there occur numerous new forms of educating (gymnastics, lyceums, colleges and private schools).

It’s known that the overwork in educational process is dangerous for children’s health, especially in those periods, when child’s organism is the most sensitive to influences of environment factors: when they just enter to school and in youngest age at school. Reorganization of the education, which is accompanied by an intensification of all forms of educating and teaching, influences on the rise of pupil’s illnesses [2].

The surrounding of a man is a complex and capacious concept, including in itself all of that, what is around him and gives him opportunity to live. Here belong also nature with its climate, temperature, floras and world made by his hands and people themselves. This surrounding is constant and variable at the same time, and he should live in this surrounding. In the result of active changing activities of humanity, there had appeared new ecological surrounding with a high concentration of anthropogenic factors. Such of them as pollution of the atmospheric air, high degree of noise, electric and magnetic radiations, concentration of enterprises on a limited territory. In conditions of a big city the influence of natural complex on a human is weakened. But the

influence of anthropogenic factors strengthened sharply. Gas and dust wastes of industrial enterprises, their wastes in surrounding reservoirs of sewages pollute the environment with various chemical elements.

The concept «Health» ingenuously does not carry in itself quantitative measures letting to judge about quality of a health. To evaluate the quality of health of population or to compare between themselves on this quotient various communities of people, one should measure it .For this purpose different quotients are used, such as morbidity, temporary disablement and invalidity, expected length of live, standardized mortality, mortality caused by various illnesses, and infant mortality, lost years of potential life.

The health degree of people formulated in the result of interaction of exogenous (natural, ecological and social) and endogenous(sex, age, heredity, race, nerve system type) factors. It let us to judge about viability of being researched community of people: capacity of work, physical development, average length of life, morbidity of community members, and their ability for giving birth to a new generation. The health degree is the quotient of being adapted of concrete community of people to definite social, natural and ecological conditions of life.

In polluted areas is observed lowering of healthy children's quantity and the rise of quantity of under school age children, who exposed to sharp illnesses. This testifies about the worth condition of children's health, living in polluted area of a city. It is traced the tendency to a higher showings of sharp morbidity of a children in a polluted area. At exploration of children's body length was set that 94% of children had average quotients of body length that is more than is the polluted area. As the research of body weight has showed 89.6% of children had average quotients, that is more than in the polluted area: from 60.4% to 80.2% [3].

We studied the real condition of industrial areas and made an analysis of health of children who live there (Table 1, 2).

Table 1 - Individual showings of the physical development of pupils

№	Schoolboys		Schoolgirls	
	Height (cm)	Weight (kg)	Height (cm)	Weight (kg)
1	141	29+0.4	146	34+1.3
2	152	55+0.6	161	53+0.4
3	170	58+0.3	149	38+0.7
4	149	32+0.4	147	30+0.2
5	154	44+1.0	145	35+0.1
6	140	43+0.9	154	38+0.4
7	144	31+0.5	169	83.5+2.0
8	153	43+0.7	158	50+1.3
Average showings	151.5	43.9	153.62	45.2
Normative showings	150.9-158.4	40.5-57.3	150.4-157.4	49.16-56.5

Table 2 - Health condition of children living in industrial area

Types of illnesses	Quantity of boys		Quantity of girls	
	People	%	People	%
1. Respiratory organs	8	22.8	6	17.14

2. Alimentary organs	3	8.6	4	11.4
3. Allergic dermatitis	4	11.4	2	5.7
4. Iron-deficit anemia	5	14.3	7	20.0
5. Cardiovascular illnesses	3	8.6	6	17.14
6. Obesity	-	-	1	2.8
7. Lag development	2	5.7	3	8.5
8. Osseous system	10	28.6	6	17.14
9. Total	35	100%	35	100%

At research of harmoniousness of children's physical development was exposed that average quotients of children's physical development reliably do not differ from regional standards.

Average quotients of harmoniousness of physical development had only 19.8% of girls [4].

Children living in regions with various degree of pollution of the atmospheric air have the worst anthropometrical quotients than the children of control group that can be explained by manifestation of protecting and compensatory reactions of organism, directed to its optimal adaptation to the environment.

The presence of chromium and nickel in the soil of industrial cities of the region in the most degree was conditioned by anthropogenic reasons and the presence of cobalt and beryllium-by natural ones [5].

The analysis of in-territorial peculiarities of allergenic load formulation in Orenburg showed that the highest degree was in an industrial administrative region, where is concentrated the greatest industrial potential at the expense of high concentrations of chromium, nickel and vanadium. On the second range place is Central region in the expense of concentrations in the atmospheric air the chromium and nickel.

The analysis of season peculiarities of allergenic formulation showed that the highest quotient was registered in winter months, in 2.24 times raised the degree, characteristic for summer, what is conditioned by the influence of chromium, nickel, vanadium, nitric and sulfur dioxides. In spring and autumn registered the highest influence of formaldehyde, suspended substances [6].

The structure of chronic pathology has large varieties depending on the age and sex of children. Numerous age and sex groups of pupils carrying the range places in the structure of morbidity belong to illnesses of digestion organs, system, nerve system, upper respiratory organs, and also to mantal disorders and disturbances of behavior. For last 5 years have been exposed the rise of illnesses and functional break of nerve system and physical sphere for 100%,digestion organs-for 60%,cardiovascular system-for 55%,supporting-motor organs-for 40% and eyesight organs-for 37%.It is marked out the tendency of rising of widely-distributedness of illnesses of urinogenital system, down respiratory organs, skin and under-skin cellular tissues. At the same time with this is rising the quantity of children with deficiency of body weight, disorders of endocrine system and allegropathology.

In conclusion, we can say that industrial pollution is one of the major causes of environmental concern. Increasing urbanization is leading to merging of residential localities with industrial locations, thus exposing the individuals to the hazards of industrial environment. Systematic assessment of the effect of industrial pollution on the health and survival of residents certainly goes a long way in monitoring the pollutants and bringing out mitigative measures by the authorities [7].

The results reveal that growth parameters such as weight and body mass index show significant reduction in children living in industrial area, compared to those in non-industrial area. Pooled data on heights, however, did not exhibit significant variation between the two groups.

Health data reveals a higher prevalence of respiratory, eye and skin problems in the children inhabiting industrial areas, as compared to those living in non-industrial areas. This is a clear indication of the mutagenic potential of industrial pollution, which may be responsible for causing long-term health effects in these children. Long-term health studies are suggested for proper management of environment and health in these areas by the governmental authorities and the society at large.

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