

нагрузки. Заболеваемость населения по эпидемиологическим показателям складывается из характеристики первично-установленной заболеваемости и общего распространения заболевания среди населения региона.

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#### **SCREENING TESTS OF THE STATE OF BARRIER FUNCTIONS OF THE BODY IN CHILDREN WHEN EXPOSED TO ADVERSE ENVIRONMENTAL FACTORS (QUESTIONNAIRE)**

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In the national strategic documents of the Republic of Kazakhstan, the leading direction of health development is preventive. In this regard, we consider it necessary to study the causes of the violation of the formation of the prenosological status in the children's population, to establish and substantiate a system of preventive measures for children [1,2,3]. A survey of parents of examined children living at various distances from large industrial enterprises was conducted in order to identify the subjective opinions of parents about the functional status of the child's health. In total, 206 parents were surveyed, case studies were conducted in those areas where

children were selected. A questionnaire was applied (guidelines) containing questions of a socio-hygienic and biomedical nature, which, as a rule, is used in the framework of similar works, thus, we eliminate incompleteness and clarify the information presented [4-7].

Analysis of the survey results showed that of the entire contingent of examined children with deviations in their health status, deviations in one system make up 10%. At the same time, the state of health of children, as average, was assessed by more than half of parents, poor - by 5%, and only a third of parents evaluated the health of their children as well. Studies have shown that based on gender, studied contingent was distributed in the following ratio: men 16.4%, women 83.6%. At the same time, it attracts the fact that the number of women surveyed is on average 1.9 times higher. According to their social position, all the surveyed population of cities (Karaganda, Temirtau, Balkhash, Zhezkazgan, Abay, Bukhar-Zhyrau district - Petrovka village) was distributed as follows: 29% blue collars, 36.7% white collars, 34.3% unemployed. At the same time, in the rural area the percentage of unemployed was very high:  $65 \pm 4.4$ , with CI  $73 \pm 55.9\%$ , the percentage of blue collar and white collar workers in this region ranged from  $19.33 \pm 3.6$  (CI  $20 \pm 18.7$ ) to  $16 \pm 3.36$  (CI  $16.6 \pm 15.4$ ). In the cities of Temirtau, Balkhash, Zhezkazgan, Abay predominant percentage of blue collar workers was observed. Analysis of the socio-demographic structure of the population showed that in the studied areas all groups of the population are represented in statistically reliable values.

Describing the health status of the examined children, we, by comparing the data obtained, attempted to analyze the trend in the frequency of headaches occurrence, taking into account socio-demographic indicators. When answering the question "Do you think your child gets sick often?", Part of the respondents, 22 out of 119, answered "no", which amounted to  $(18.49 \pm 3.6\%, \text{ CI} - 25.6 \pm 11.4\%)$ , 69 answered "yes, rarely" ( $58 \pm 4.52\%, \text{ CI} - 67 \pm 48.9\%$ ). 19 and 3 out of 119 respondents answered "yes, often and yes, constantly" ( $16 \pm 3.4\% \text{ CI} - 23 \pm 9.25\%$ ;  $2.5 \pm 1.4\% \text{ CI} - 5.4 \pm 0.4\%$ ) respectively. Among all the studied groups, parents indicate such symptoms as: malaise, headache, it is desirable in this respect to reveal not only their quantitative, but also qualitative aspect of manifestation, i.e. frequency of ailments. It seems that the main criteria for assessing the qualitative manifestation of an illness symptom are alternatives "often" and "constantly", which, in comparison with the alternative "never", will allow determining the true background of public health. When answering the question "Do you often resort to self-medication?", 90 out of 119 respondents answered "no, never", which amounted to  $(67.23 \pm 4.3\%, \text{ CI} - 68 \pm 66.4\%)$ , 21 answered "Yes, on occasion" ( $17.6 \pm 3.49\%, \text{ CI} - 18.3 \pm 17\%$ ). 4 and 2 respondents out of 119 answered "often and constantly" ( $3.4 \pm 1.7\% \text{ CI} - 3.7 \pm 3.075\%$ ;  $1.7 \pm 1.2\% \text{ CI} - 1.9 \pm 1.47\%$ ), respectively. Thus, out of the total number of the surveyed population, the fact of self-medication was noted in 41.4% of cases. To the question: "During the period of viral respiratory infections (VRI), does your child often have painful sensations?" 52 respondents out of 119 answered "headaches", which amounted to  $(43.7 \pm 4.6\%, \text{ CI} - 5,2 \pm 34.6\%)$ , 18 - "labored breathing" ( $14.3 \pm 3.21\%, \text{ CI} - 20.7 \pm 7.87\%$ ). 8 respondents out of 119 answered "feeling of sweating" ( $4.2 \pm 1.8\% \text{ CI}$

-7.9±0.52%), 20 respondents out of 119 answered “rhinitis” (3.4±1.7% CI – 6,67±0.06%), "frequent nasal discharge" (10.1±2.8% CI - 16±4.6%), "cough" - 18 respondents (24±3.9% CI - 31±16%).

During the period of activation of VRI, the child often sleeps poorly and rarely breathes through the nose. Inflammatory processes occur in an aggressive form and very often interfere with good sleep. When answering the question: “What do you think is the cause of a night sleep problems?” A part of the respondents, 9 people out of 119, answered “illness”, which amounted to (7.563±2.4%, CI - 8.01±7.12%), 15 answered “Homework” (12.6±3.04%, CI - 13.2±12.1%). 23 respondents out of 119 answered “workload at school” (19±3.6% CI - 20±18.7%), 10 respondents answered “insomnia” (8.4±2.5% CI - 8.88±7,94%). 17 respondents answered “noise” (14.3±3.2% CI - 15±14%), 4 respondents answered “other reasons” (34.5±4.36% CI - 35.3±33.7%). This feature, like no other, emphasizes the penetrating effect of noise in the home and at night. By comparing the frequency of sleep problems depending on the cities of the study, the population at the main territory is in adverse acoustic conditions. Here is noted the highest percentage of the sleep problems both in frequency “often” (44.5%) and in frequency “constantly”, therefore, in 49.4% of cases, the population of the highway indicates frequent sleep problems (23.0%).

When conducting a questionnaire survey, attention should be paid to the data indicated in the form of “constantly” (32.2%) and “often” (41.0%). The calculation of the relative risk (RR) of a subjective medical history (parental survey) during the survey (table 1).

Table 1 - Risk assessment of children's health in the Karaganda region according to the survey of parents

Question	Karaganda(n=129)	Temirtau(n=100)	Balkhash(n=100)	Zhezkazgan (n=100)	Abay (n=100)
Do you think your child gets sick often	Answer options(RR) / ( $\chi^2$ )				
	Often and constantly				
	2,432	2,38	2,87	3,245	3,40
What do you think is the cause of the night sleep problems	Illness				
	3,58	1,05	0,35	1,61	1,49
	36,16	0,002	6,26	2,21	1,31
During the period of VRI, does your child often have painful sensations	Answer options				
	Headaches and labored breathing				
	2,33	2,38	2,63	2,81	3,02
	13,1	12,58	17,05	20,76	23,94
	Rhinitis and nasal discharge				
	0,77	0,31	0,37	0,5	1,41
	0,97	7,86	6,36	3,97	1,02
	Cough				
0,97	0,81	0,31	1,57	0,63	

	0,075	0,65	7,86	2,22	2,04
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To the question: “How often do you think your child gets sick?” Karaganda parents answered “Often and constantly”, 58 out of 129 people, the relative risk was  $2.43 > 1$  (for the control region) with  $\chi^2 - 18,66$ . In Temirtau, 42 respondents out of 100 answered “Often and constantly”, the relative risk was 2.38,  $\chi^2 - 15,61$ , i.e. the frequency of diseases among children in Temirtau with such a risk is 42%. In Balkhash, 19 out of 100 parents answered “often and constantly”, the relative risk - 2.87 with  $\chi^2 - 27.23$ . Their risk of living can increase the incidence rate of illness in 19% of the child population. In Zhezkazgan, the RR amounted to 3.24,  $\chi^2 - 38.22$ , when asked about the incidence of diseases, 29 out of 100 people answered “often and constantly”. The risk of living in Zhezkazgan with such high rates can also cause chronic diseases. 14 out of 89 people answered “often and permanently” in the city of Abay. The RR amounted to 3.40,  $\chi^2 - 41.01$ , just as in other cities, the risk of living here can cause chronic diseases.

To the question: “What do you think is the cause of the night sleep problems?” the parents gave the answer “Illness” in Karaganda - 6 out of 129; Temirtau - 15 out of 100; in Zhezkazgan - 23 and in Balkhash - 8 out of 100; in Abay - 19 of 89; RR - 3.58,  $\chi^2 - 36.16$  in Karaganda and Temirtau - 1.05,  $\chi^2 - 0.02$ , Zhezkazgan - 1.61,  $\chi^2 - 2.21$ , Abay - 1.49, with  $\chi^2 - 1.31$ . The risk of living in Balkhash is at high level and may be a cause of environmentally related diseases with  $\chi^2 - 6.26$ .

Analysis of the questionnaire survey showed that the subjective reaction of parents often does not correspond to the frequency of visits to outpatient clinics. Therefore, the underestimation of self-medication of the child by the parents can significantly affect the level of reliable reaction. It should be noted that the contingent of parents from blue collar families, who more often than others do not pay attention to the state of health of children, can in some way distort the true picture. All these data are of interest for the knowledge of social and hygienic processes occurring in the family relationship “parents - child”. And the fact that 10.92% of parents answered that they “find it difficult to answer,” “other reasons” or do not provide a clear answer, shows that they are not sufficiently aware and, therefore, underestimate the importance of the survey and the functional state of the child and his development in a healthy state. Working parents estimate the importance of questioning in 98.3% of cases quite correctly. Among social groups there is no consensus. For a variety of reasons, blue collar workers are more likely to show “neutrality”. Women, who spend most of their time at home, are more concerned about the health of the child and are more attentive than fathers. Moms differentiate questions well, note the nuances and their features. The analysis of the questionnaire survey about the child's state of health according to the subjective opinion of parents is a significant method for confirming the environmental tensions with determining the cause, in this case determining the factors of urbanized cities for a certain period of time. Data on the state of health of children in the territory of observation, obtained through a survey of parents, indicates a low level of health, reduced adaptation opportunities for most children, and an unfavorable prognosis for the formation of the health of the population as a whole.

Bringing our own statistics and taking into account our own results, we create an automated database of environmental-related diseases with the formation of a biogeochemical territory of accounting for environmental problems in accordance with international standards, which will contribute to system analysis, and hence a more efficient process of monitoring socio-hygienic and medical-biological directions.

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