

Olga V. Morfina

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Olga V. Morfina

DYNAMICS OF CAUSES OF CHILDREN'S MORTALITY IN BELARUS FOR 50 YEARS

With the purpose of studying dynamics of demographic structure and reproduction of the population of the republic over 11 thousand records in archives of the registry offices of six towns about age and causes of death of the population for the last 50 years (1946 – 1995) have been analysed: in the town of Chericov (including Veprinsky rural soviet) of Mogilyovskaya oblast, the town of Stolin and in the village of Olmany of Brestskaya oblast, in the town of Vologin of Minskaya oblast, in the settlement of Sharkovshchina of Vitebskaya oblast, and in the settlement of Parichy of Gomelskaya oblast. The collected demographic data are parsed with help of statistical methods in view of sex, age and causes of death.

The structure of death reasons of children in the following age groups has been studied: 0 – 12 months, 1 – 4 years, 5 – 9 and 10 – 14 years. Also its dependence on sex belonging of a child and place of his residing has been investigated. The estimation of causes of mortality has been conducted according to the gradation of the nosological forms of diseases generally accepted in medical statistics. For the comparative analysis of material the demographic collections on population censuses and data of current statistics has been used also.

The first place in the scheme of mortality of children from 0 to 14 years for 50-years period (1946 – 95) was taken by the diseases of respiratory organs (30%), the share of which has been gradually reduced from 33% in post-war time to 1,4% in 90-ies. For the indicated period of time the mortality for this reason was almost identical for children of both sexes (54% for the boys and 46% for the girls). The mortality of children of 0 – 4 years and 5 – 14 years (especially in the village of Olmany) to a considerable degree was stipulated by diseases of respiratory organs (settlement of Parichy, village of Olmany, girls from the town of Vologin). Maximum quantity of deaths for this

reason in the first post-war decade was marked in Vologin (60% among the boys and 51% among the girls). In 1976 – 86 the mortality, due to diseases of respiratory organs in separate settlements, was increased for the boys and girls of Cherikov, Stolín, Sharkovshchina (maximally for the girls up to 29%) and for the boys from Olmany (26%). In 1986 – 95 the quantity of children's deaths due to respiration diseases has decreased.

Table 1. Causes of mortality of the children's population of the researched locales

Years	Cherikov		Parichy		Stolin		Olmany		Vologin		Sharkovshchina	
	N	%	N	%	N	%	N	%	N	%	N	%
Infectious, parasitogenic diseases and diseases of digestive organs												
The boys												
1946—1955	26	55,4	11	61,1	25	62,5	4	40	18	54,5	11	45,8
1956—1965	16,6	10,6	3	16,6	11	27,5	3	30	5	15,2	6	25
1966—1975	3	6,4	1	5,6	2	5	2	20	3	9,1	0	0
1976—1985	8	17	2	11,1	2	5	0	0	4	12,1	6	25
1986—1995	5	10,6	1	5,6	0	0	1	10	3	9,1	1	4,2
In all	47	100	18	100	40	100	10	100	33	100	24	100
The girls												
1946—1955	17	63	4	50	27	67,5	7	38,9	17	60,7	10	45,5
1956—1965	5	18,5	0	0	10	25	9	50	6	21,5	4	18,2
1966—1975	0	0	1	12,5	2	5	2	11,1	2	7,1	2	9,1
1976—1985	3	11,1	3	37,5	1	2,5	0	0	3	10,7	3	13,6
1986—1995	3	7,4	0	0	0	0	0	0	0	0	3	13,6
In all	27	100	8	100	40	100	18	100	28	100	22	100
Diseases of respiratory organs												
The boys												
1946—1955	24	44,4	7	31,8	20	31,8	10	37,1	21	60	3	30
1956—1965	13	24,1	12	54,5	13	20,6	6	22,2	7	20	1	10
1966—1975	6	11,1	1	4,6	9	14,3	4	14,8	5	14,2	2	20
1976—1985	7	13	2	9,1	16	25,4	7	25,9	1	2,9	2	20
1986—1995	4	7,4	0	0	5	7,9	0	0	1	2,9	2	20
In all	54	100	22	100	63	100	27	100	35	100	10	100
The girls												
1946—1955	22	48,9	5	41,7	9	25,7	13	43,3	20	51,3	8	38,1
1956—1965	4	8,9	4	33,3	13	37,1	8	26,7	13	33,3	5	23,8
1966—1975	8	17,8	2	16,7	4	11,5	5	16,7	6	15,4	1	4,8
1976—1985	11	24,4	0	0	6	17,1	3	10	0	0	6	28,5
1986—1995	0	0	1	8,3	3	8,6	1	3,3	0	0	1	4,8
In all	45	100	12	100	35	100	30	100	39	100	21	100

Inherent anomalies												
The boys												
1946—1955	2	22,2	1	16,7	6	23,1	0	0	1	9,1	3	30
1956—1965	2	22,2	2	33,2	2	7,7	0	0	0	0	1	10
1966—1975	2	22,2	1	16,7	7	26,9	0	0	1	9,1	2	20
1976—1985	1	11,2	1	16,7	9	34,6	0	0	8	72,7	2	20
1986—1995	2	22,2	1	16,7	2	7,7	0	0	1	9,1	2	20
In all	9	100	6	100	26	100	0	0	11	100	10	100
The girls												
1946—1955	2	50	0	0	7	29,2	1	100	0	0	1	16,7
1956—1965	1	25	0	0	5	20,8	0	0	1	14,3	0	0
1966—1975	1	25	2	66,7	5	20,8	0	0	1	14,3	2	33,3
1976—1985	0	0	1	33,3	5	20,8	0	0	0	0	2	33,3
1986—1995	0	0	0	0	2	8,4	0	0	5	71,4	1	16,7
In all	4	100	3	100	24	100	1	100	7	100	6	100
The states arisen in perinatal period												
The boys												
1946—1955	10	40	2	33,3	16	18,2	3	60	3	10,7	3	13,6
1956—1965	6	24	4	66,7	20	22,7	0	0	3	10,7	7	31,8
1966—1975	3	12	0	0	28	31,8	1	20	8	28,6	3	13,6
1976—1985	4	16	0	0	17	19,3	0	0	6	21,4	2	9,2
1986—1995	2	8	0	0	7	8	1	20	8	28,6	7	31,8
In all	25	100	6	100	88	100	5	100	28	100	22	100
The girls												
1946—1955	6	3	3	60	11	5,9	1	25	3	16,6	1	10
1956—1965	4	1,8	1	20	7	1,3	1	25	5	27,8	2	20
1966—1975	0	2,4	0	0	16	1,4	0	0	5	27,8	3	30
1976—1985	1	2,2	1	20	12	3,3	2	50	2	11,2	1	10
1986—1995	2	2,7	0	0	5	3,3	0	0	3	16,6	3	30
In all	13	100	5	100	51	100	4	100	18	100	10	100
Accidents												
The boys												
1946—1955	5	18,5	0	0	5	20,8	0	0	2	14,3	4	25
1956—1965	6	22,2	4	36,3	2	8,3	0	0	1	7,1	3	18,7
1966—1975	4	14,8	3	27,3	6	25	1	33,3	2	14,3	0	0
1976—1985	7	26	3	27,3	3	12,5	2	66,7	4	28,6	5	31,3
1986—1995	5	18,5	1	9,1	8	33,4	0	0	5	35,7	4	25
In all	27	100	11	100	24	100	3	100	14	100	16	100
The girls												
1946—1955	4	20	0	0	1	25	0	0	3	60	2	20
1956—1965	0	0	0	0	0	0	3	60	0	0	2	20
1966—1975	4	20	0	0	1	25	1	20	1	20	2	20
1976—1985	7	35	0	0	1	25	0	0	0	0	2	20
1986—1995	5	25	1	100	1	25	1	20	1	20	2	20
In all	20	100	1	100	4	100	5	100	5	100	10	100

The states arisen in prerinatal period (31%) were the second cause by frequency in scheme of children's mortality for all 50-years period — the states arisen in perinatal period. These states were the leading causes of death of their children 1-st year of life. For this reason boys died more often than girls did (63% against 47% accordingly). In general children of 0 – 12 years in the towns of Cherikov and Stolin and the boys of Vologin died of the diseases arisen in perinatal period. Maximum quantity of deaths of the boys was marked in 1956 – 65 in the settlement of Parichy (67%) and in 1976 – 86 in the village of Olmany (50%). In general scheme of children's mortality the given class of diseases during the first post-war decade was on the third place, and by the middle of the 90-ies it moved to the first place.

Infectious, parasitogenic diseases and diseases of digestive organs (18%) were on the third place. Among all causes of mortality of children of infectious, parasitogenic diseases and diseases of digestive organs the mortality of boys — 72% — was especially great. Children of all ages are subjected to mortality of these diseases (acute infectious diseases, measles, whooping-cough), specially from 0 up to 12 months in the settlement of Sharkovshchina, from 5 to 14 years (it is possible to add tuberculosis of respiratory organs to the above-mentioned diseases) — children from the towns of Cherikov and Stolin, boys from the settlement of Parichy, girls from the town of Vologin and the settlement of Sharkovshchina. Maximum quantity of deaths during the post-war decade for this reason has been marked in the town of Stolin (63% for the boys and 68% for the girls). Though, as contrasted to the post-war time, mortality of children because of infectious diseases (except for the boys from the village of Olmany) has decreased in all local populations, however there was rise of its share in the middle of the 70-ies in comparison to the 60-ies for the boys and girls from the towns of Cherikov and Vologin, settlements of Parichy and Sharkovshchina. Increase of mortality due to this in post-Chernobyl decade compared to 1976 – 85, was registered also for the boys from the village of Olmany.

It is necessary to mark that in the majority of countries with an average level of income of the population the process of so-called epidemiological transferring is watched: there are sharp shifts in scheme of mortality causes in a range from infectious to chronic non-infectious diseases.

The next causes of children's mortality were traumas, accidents and poisonings (11%). The boys have been lost in 68% of cases, the girls — in 32% due to accidents. The share of these causes has gradually increased from the middle 40-ies up to the middle 90-ies. In 1946-55 in general scheme the mortality of children because of traumas, accidents and poisonings made 5%, in 1986 – 95 — 26%.

The mortality due to inherent anomalies (8,2%) was the fifth cause in scheme of mortality of the se children population. The mortality of the boys for this reason exceeded these ones for the girls (58% against 42%). The mortality of children due to inherent anomalies in researched period of time also had a trend to growing in relation to modern period (from 5% in post-war time up to 12% in the 90-ies). Maximum quantity of deaths because of inherent anomalies for the boys (73%) in 1976-85 and for the girls (71%) in 1986 – 95 was registered in the town of Vologin.

The endocrine diseases, disorder of nourishment and metabolism were the causes of deaths of children from the studied local populations in 4% of cases. The boys for these reasons died in 63% of cases, girls — in 47%. Maximum quantity of deaths due to endocrine diseases, disorder of nourishment and metabolism was marked in 1946 – 55 for the boys (75%) and for the girls (67%) in Stolin. The mortality of children because of the given pathology tended to drop in the direction of modern time (5,7% in 1946 – 55 as against 0,8% in 1986 – 95).

On the seventh place in the scheme of causes of a children's mortality there were diseases of blood circulation system (3,8%). The boys perished due to these reasons in 64% of cases, the girls – in 46% of cases. In the studied populations the share of this pathology within 50 years was stable, and in 1966 – 75 its a little rise (up to 7%) was marked.

Diseases of the nervous system and sense organs (2,6%) follow further. The mortality of children owing to these reasons was almost identical, both for the boys (53%) and for the girls (47%). For 50-years period the given forms of diseases have been within two percents. Some rising was registered in 1976-85 (up to 5%) at the expense of maximum indices during this decade for children of both sexes from the town of Vologin and the village of Olmany.

The death due to malignant neoplasms (1,2%) was the ninth cause in the scheme of children's mortality of the studied populations. The share of this pathology within 50 years was the highest in 1976 – 85 (3,4%). The maximum indices during this decade were detected for the boys of the towns of Cherkov, Stolin and the settlement of Sharkovshchina and for the girls from the town of Vologin and the settlement of Parichy.

Considering sex distinctions in the scheme of children's mortality, it is possible to mark that the share of the died boys is higher for infectious, parasitogenic diseases, diseases of digestive organs, accidents, diseases of the blood circulation system, endocrine diseases, disorder of nourishment and metabolism, states arisen in perinatal period and also inherent anomalies.

While analysing a correlation of three classes of death causes of children for 50-years period (class I — infectious diseases, class II — non-infectious diseases, class III — traumas and accidents) one should mark that children in the age of 0-12 months in the towns of Cherikov and Stolin and boys in the town of Vologin has died because of the states arisen in perinatal period, children in the settlement of Sharkovshchina — because of acute respiratory diseases, measles, whooping-cough, meningitis.

The mortality of children of 0-4 years also was stipulated by the above indicated diseases and to no small degree by diseases of respiratory organs (pneumonia, bronchitis) for children from the settlement of Parichy, the village of Olmany and girls of the town of Vologin.

Thus, the comparison of death causes of the children's population for 50-years period has allowed to single out the main causes of death various in each age group. In the 1-st year of life the sequence of main causes of death was the following: the separate states arisen in perinatal period (33%), diseases of respiratory organs (32%), infectious, parasitogenic and diseases of digestive organs (20%), inherent anomalies of development (12%). Children of 0 – 12 months from the towns of Cherikov and Stolin and boys from the town of Vologin died mainly because of the states arisen in perinatal period, children from the settlement of Sharkovshchina — because of acute respiratory diseases, measles, whooping-cough, meningitis.

At the age of 5 – 14 years death of children from the towns of Cherikov, Stolin, boys from the settlement of Parichy and girls from the town of Vologin and the settlement of Sharkovshchina mainly was stipulated by infectious diseases (mentioned above and also pulmonary tuberculosis) and also by diseases of respiratory organs (particularly for children of the village of Olmany).

The accidents and traumas (specially drownings, combustions and motor transport accidents) are some of the main death causes of children of all age groups.