

**EVOLUTION OF THE MAIN GROWTH AND DEVELOPMENT
PARAMETERS IN TEENAGERS FROM THE CHISINAU DISTRICT
(REPUBLIC OF MOLDOVA), *VERSUS* THE EVOLUTION OF
TEENAGERS FROM THE DISTRICTS OF BACAU, NEAMT,
SUCEAVA AND TIMIS (ROMANIA)**

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Abstract. The study analyzes the evolution of the main growing and development parameters (stature and weight), along the 10-16 years interval of age, in the teenagers of the Chișinău district (Republic of Moldova), comparatively with the teenagers of the same chronological ages from the Bacău, Neamț, Suceava and Timiș (Romania) districts. In the pre-pubertal stage (10-13 years), both the girls and the boys from the Chisinau city evidence average values of stature and weight higher than the other groups while, in the post-pubertal period, the situation is wholly reversed, the series under study appearing inferior in both it stature and weight, comparatively with the other 4 series (the cities of Bacău, Piatra Neamț, Suceava and Timișoara). In the rural medium, as to stature, the situation is similar with that of the girls from the urban group, while, in the case of boys, a clear-cut superiority is evidenced in the villages of the Chișinău district, over the whole interval under study, *versus* their colleagues from the other series. Referring to bodily weight, over the 10-16 years interval, the teenagers (both boys and girls) from the rural area of Chișinău evidence higher average values than their colleagues from the comparative groups, the differences recorded being significant for all classes of age.

Key words: growth, development, teenagers, stature, weight

Rezumat. Lucrarea vizează evoluția principalilor parametri de creștere și de dezvoltare (statura și greutatea), în intervalul 10-16 ani, la adolescenții din județul Chișinău, procese ce au fost analizate comparativ cu cele ale adolescenților de aceleași vârste din județele Bacău, Neamț, Suceava și Timiș. Atât fetele, cât și băieții ce provin din mediul urban – Chișinău, în etapa prepuberală (10-13 ani) se disting prin valori medii ale staturii și greutății, superioare față de celelalte grupe, în timp ce postpuberal situația se prezintă total invers, seria de studiu este inferioară statural, dar și ponderal, comparativ cu celelalte patru serii de comparație (orașele Bacău, Piatra Neamț, Suceava și Timișoara). În mediul rural, în ceea ce privește statura, situația este asemănătoare cu cea din mediul urban în cazul fetelor, în timp ce la băieți se observă statură mai înalte față de cei din satele din jud. Chișinău în tot intervalul considerat față de colegii din mediul rural din seriile de comparație. În ceea ce privește greutatea corporală, pe parcursul intervalului 10-16 ani adolescenții din mediul rural – Chișinău (băieți și fete) prezintă valori medii superioare colegilor din loturile de comparație, diferențele fiind semnificative la toate clasele de vârstă.

Cuvinte cheie: creștere, dezvoltare, adolescenți, statura, greutatea

INTRODUCTION

The absence of any comparative data on the growth and development of

children and teenagers from different – or the same – regions of the Republic of Moldova, yet collected in

different periods of time, challenged the authors of the present study to a comparative analysis of these processes, with similar ones, suffered by teenagers from Romania of the same chronological age (10-16 years), studied along the same historical period (1998-2004) by specialists working in Romanian scientific institutions. Therefore, the present paper is actually a comparison among the data collected by the authors on the youngsters of the Chisinau district and those obtained by Marieta Vasilov, in 1999, in the urban and rural areas of the Bacău, Neamț and Suceava districts, and the information gathered by Brighita Vlaicu, in 1998, at the level of the Timișoara city (1, 2, 3, 4, 5).

The transversal study published by Marieta Vasilov in 2001, discussing the physical development of children and youngsters from several districts of Moldova, is an estimation of the physical development - viewed as an indicator of population's health condition - in its dynamics. The work analyses aspects on the methodology and results of the anthropometric inquiry, developed in 1999, by a specialized medical staff, in the 0-18 year old populations of some Moldavian districts. Anthropometric

data on size and height - as main somatometric indices of the health condition - are provided and scientifically interpreted (1, 2, 3).

The study published by Brighita Vlaicu in 1998 refers to the level of the physical development (size and weight) on a school population of Timișoara (urban environment) formed of children and teenagers from the primary and secondary education levels (7-18 years) (4, 5). It is the authors' regret that, in this latter case, no anthropometric data at the rural level of the Timiș district were available for their study.

The present work follows the growth and development process in teenagers with ages between 10 and 16 years, from the city of Chișinău, as well as from some rural areas in the vicinity of the capital, comparatively with similar processes recorded on youngsters from some Romanian districts.

The table to follow presents the demographic situation in the above-mentioned districts (both urban and rural levels), utilized for comparative ends, which permitted a more precise estimation of the urbanization degree attained (6, 7, 8):

	urban medium	rural medium
Bacău district	Bacău city = 205.029 citizens	366.207 citizens
Neamț district	Piatra Neamț city = 123.360 citizens	343.869 citizens
Suceava district	Suceava city = 114.462 citizens	717.252 citizens
Timiș district	Timișoara city = 407.606 citizens	270.138 citizens
Chișinău district	Chișinău city = 647.700 citizens	69.000 citizens

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MATERIALS AND METHODS

The material under study, collected between 1999-2005, in several schools from the urban and rural areas of the Chişinău district, amounts to 3039 subjects (1492 boys and 1547 girls), with ages between 10 and 16 years, 1525 coming from the city of Chişinău and 1154 teenagers - from three rural localities of the Republic of Moldova (Truşeni, Durlleşti and Sângera), situated in the immediate vicinity (5-11 km) of the capital.

Statistical processing of the data obtained from anthropometric measurements was separately made for each of the two (urban and rural) batches of subjects, on sexes and on each category of age. For each biometric character in part, the average and standard deviation were established in both relative and absolute values, the results thus obtained being analyzed comparatively with those of the teenagers of the same chronological age (10-16 years), from the districts of Bacău, Neamţ, Suceava and the city of Timișoara.

RESULTS AND DISCUSSION

Stature. Tables 1 and 2 list the age-induced variability of stature's average values in the boys and girls of the two different ecological media of the Chişinău district, *versus* those of the teenagers from the Bacău, Neamţ and Suceava districts, and city of Timișoara, respectively.

If considering the masculine series of the urban series (table 1), the situation appears as follows: up to the age of 14, the boys from the Chişinău city exceed, by their average size values,

the ones of the comparatively studied series, while, after the age of 14, our series will record average values of the inferior stature, comparatively with the other four series involved. At ages of 10, 11 and 13 years, the boys of Chişinău have taller statures than all the other groups (of Piatra Neamţ, Suceava, Bacău and Timișoara), at 12 years the first ones are exceeded only by their colleagues of Piatra Neamţ, and at 14 - only by those of Suceava. Starting with the 15 year class of age, the male youngsters of Chişinău show size values inferior to all the other 4 comparative series. Thus, maximum differences are to be recorded in the first 4 classes of age in favour of the Chisinau boys, *versus* the series of Bacău (6.87 cm at 10 years, 3.76 cm at 11 years, 3.27 cm at 12 years, 5.25 cm at 13 years), and at 14 years *versus* the Piatra Neamţ series (4.25 cm). In the last two classes of age, the maximum differences, this time not in favour of the Chişinău boys, are recorded *versus* the Timișoara series (2.52 cm at 15 years and 3.05 cm at 16 years).

As to the feminine series (table 2), the girls of Chişinău evidence - in the first two classes of age (10 and 11 years) - average stature values higher than those of the girls from all the other 4 cities considered for the comparative analysis (Piatra Neamţ, Suceava, Bacău and Timișoara). At the age 12, the girls of our series are exceeded - as to their stature - only by their colleagues of Piatra Neamţ while, at 13 years - only by those of Timișoara. Starting with the age of 13, the teenagers of Chişinău will have shorter statures than all the other series.

Table 1. Average values (M) and standard deviations (δ) of stature and weight parameters in the male teenagers from the urban and rural areas of the Chişinău district (Republic of Moldova), comparatively with teenagers from the Bacău, Neamţ, Suceava and Timișoara districts (Romania)

district	ecological medium	anthropometric indicators	10 years		11 years		12 years		13 years	
			M	δ	M	δ	M	δ	M	δ
Bacău (M. Vasilov, 2001)	urban medium	stature	136.50	6.81	141.96	5.60	147.40	8.31	153.70	8.41
		weight	31.36	5.54	34.50	6.24	38.96	8.49	43.46	8.94
	rural medium	stature	134.30	6.72	139.32	6.04	143.84	6.54	148.43	7.51
		weight	27.90	3.52	31.67	4.25	33.84	4.79	37.27	5.58
Neamţ (M. Vasilov, 2001)	urban medium	stature	140.95	5.60	142.89	6.31	151.69	6.29	154.37	7.67
		weight	33.11	6.17	36.29	6.29	43.14	7.61	44.45	7.76
	rural medium	stature	135.83	6.93	140.29	7.20	144.97	7.91	151.93	9.72
		weight	29.40	3.96	32.30	4.84	36.03	6.33	41.15	7.18
Suceava (M. Vasilov, 2001)	urban medium	stature	136.82	5.46	143.44	6.90	147.58	7.41	154.89	8.64
		weight	29.44	4.38	34.70	5.81	39.57	6.99	41.44	7.34
	rural medium	stature	135.82	6.80	140.20	7.50	145.10	7.10	150.75	8.29
		weight	29.85	4.57	34.02	5.45	36.13	5.74	40.89	7.09
Timișoara (B. Vlaicu, 1998)	urban medium	stature	139.30	5.10	144.50	5.70	148.80	5.90	156.90	6.20
		weight	31.90	4.10	34.90	4.60	38.50	4.50	43.80	5.10
Chişinău (the present study)	urban medium	stature	143.37	6.20	145.72	6.24	150.67	8.19	158.95	8.39
		weight	36.05	6.43	38.99	6.59	41.47	7.06	46.96	8.15
	rural medium	stature	142.24	6.54	143.76	6.37	149.73	7.98	155.71	8.08
		weight	32.80	6.74	35.67	5.90	39.72	6.73	42.71	7.00

district	ecological medium	anthropometric indicators	14 years		15 years		16 years	
			M	δ	M	δ	M	δ
Bacău (M. Vasilov, 2001)	urban medium	stature	161.00	9.42	169.30	8.32	175.02	8.79
		weight	49.63	10.33	55.38	9.90	60.72	8.51
	rural medium	stature	155.94	8.47	164.08	9.55	168.60	8.67
		weight	43.67	6.39	49.12	7.39	51.19	7.83
Neamţ (M. Vasilov, 2001)	urban medium	stature	160.77	7.51	169.58	7.78	172.94	8.86
		weight	48.62	8.78	55.77	9.35	60.76	8.05
	rural medium	stature	158.01	8.55	162.89	9.70	168.08	9.46
		weight	44.85	7.49	51.61	8.95	56.90	7.32
Suceava (M. Vasilov, 2001)	urban medium	stature	166.34	8.55	168.18	9.06	175.48	6.35
		weight	55.44	11.29	54.81	10.30	62.70	9.37
	rural medium	stature	157.64	8.59	163.20	8.81	166.30	7.03
		weight	45.08	8.52	51.99	10.39	55.56	6.17
Timișoara (B. Vlaicu, 1998)	urban medium	stature	162.80	6.30	170.20	6.80	175.60	7.60
		weight	50.10	6.20	56.20	6.80	62.60	6.90
Chişinău (the present study)	urban medium	stature	165.02	8.66	167.68	8.14	172.55	5.92
		weight	53.50	8.79	55.70	8.51	62.37	6.84
	rural medium	stature	161.70	8.60	167.69	9.66	172.21	8.40
		weight	48.36	7.99	53.97	7.47	61.11	7.85

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Table 2. Average values (M) and standard deviations (δ) of stature and weight parameters in the female teenagers from the urban and rural areas of the Chişinău district (Republic of Moldova), comparatively with teenagers from the Bacău, Neamţ, Suceava and Timișoara districts (Romania)

district	ecological medium	anthropometric indicators	10 years		11 years		12 years		13 years	
			M	δ	M	δ	M	δ	M	δ
Bacău (M. Vasilov, 2001)	urban medium	stature	136.60	6.67	142.90	7.82	148.10	8.62	155.20	8.89
		weight	30.35	5.92	34.66	7.27	39.18	8.50	44.27	7.54
	rural medium	stature	132.80	5.28	141.90	6.91	145.40	7.53	152.05	8.00
		weight	27.42	5.29	33.15	4.76	34.94	4.24	39.88	5.42
Neamţ (M. Vasilov, 2001)	urban medium	stature	139.24	6.63	146.19	8.03	153.66	5.67	155.28	6.99
		weight	32.46	5.64	36.38	6.76	43.25	6.83	45.89	7.70
	rural medium	stature	135.63	6.97	140.41	8.57	145.10	7.43	152.32	8.62
		weight	29.11	5.31	32.33	5.43	35.55	6.10	41.50	7.13
Suceava (M. Vasilov, 2001)	urban medium	stature	135.25	7.59	144.87	7.58	148.86	7.63	156.04	7.75
		weight	27.75	2.60	34.13	5.78	39.36	7.31	42.52	7.73
	rural medium	stature	135.50	6.72	139.81	9.36	146.42	8.01	153.49	10.07
		weight	29.19	4.75	33.07	5.59	37.10	6.32	43.51	7.32
Timișoara (B. Vlaicu, 1998)	urban medium	stature	138.60	6.10	146.80	6.50	149.90	7.30	157.60	7.40
	weight	31.90	6.10	35.20	6.50	40.30	6.30	45.00	6.00	
Chisinau (the present study)	urban medium	stature	141.16	6.90	148.22	6.97	152.56	6.85	157.01	7.02
		weight	34.83	7.03	38.59	6.92	42.08	6.88	48.33	8.07
	rural medium	stature	141.04	5.45	143.74	7.17	152.23	5.77	156.17	6.73
		weight	31.45	5.74	34.65	5.53	40.29	5.46	47.00	8.35

district	ecological medium	anthropometric indicators	14 years		15 years		16 years	
			M	δ	M	δ	M	δ
Bacău (M. Vasilov, 2001)	urban medium	stature	158.30	8.64	162.80	5.88	163.00	5.87
		weight	48.32	7.35	52.51	8.60	53.42	7.10
	rural medium	stature	156.60	7.42	159.70	5.04	160.84	5.13
		weight	45.09	6.47	49.64	6.44	52.10	6.68
Neamţ (M. Vasilov, 2001)	urban medium	stature	160.40	7.19	162.80	6.40	163.73	5.88
		weight	49.90	7.17	51.65	7.91	53.57	6.99
	rural medium	stature	157.94	6.84	160.73	7.05	161.44	5.40
		weight	47.37	7.97	50.03	7.50	52.84	5.78
Suceava (M. Vasilov, 2001)	urban medium	stature	162.54	5.91	163.23	5.58	165.10	5.88
		weight	51.94	7.77	55.65	8.76	55.67	7.19
	rural medium	stature	157.98	10.43	160.18	11.03	161.82	10.71
		weight	47.37	7.25	50.73	6.31	54.67	6.02
Timișoara (B. Vlaicu, 1998)	urban medium	stature	164.10	5.80	167.00	6.00	171.20	6.70
	weight	51.10	6.30	53.60	6.50	56.80	6.20	
Chisinau (the present study)	urban medium	stature	160.00	6.77	160.35	5.81	160.99	5.48
		weight	51.65	6.89	52.39	7.18	53.62	6.83
	rural medium	stature	158.89	5.43	160.10	7.33	160.79	5.90
		weight	49.32	7.10	51.84	6.30	54.88	5.95

Thus, at the age of 14, with the exception of the Bacău one, all the other girl series will exceed the girls of Chişinău by their average stature values. In the last two classes of age (15 and 16 years), the teenagers of Chişinău display lower average statures, comparatively with all the other four series under comparison. Consequently, the girls of Chişinău are characterized - in their pre-pubertal stage (between 10 and 13 years) by average stature values higher than the other groups, while, in a post-pubertal stage, the situation is wholly reversed, our series remaining inferior - as to the stature - to the other four comparative groups. Maximum differences, in favor of the teenagers of Chişinău, are of 5.91 cm at 10 years of age (*versus* Suceava), of 5.32 cm at 11 years, 4.46 cm at 12 years and 1.81 cm at 13 years (*versus* Bacău). As already mentioned, after the age of 13, the teenager girls of the series under study are exceeded in their stature by their colleagues, with only few exceptions. Thus, maximum differences, this time not in favour of the Chişinău girls and in favour of the Timișoara ones, are of 4.10 cm at 14 years, of 6.65 cm at 15 and of 10.21 cm, respectively, at 16 years of age.

On analyzing the age-induced variability of the average size values in the teenagers coming from the 3 rural localities of the Chişinău district, *versus* the teenagers of the same ages from the rural areas of the Suceava, Neamţ and Bacău districts, one may observe that, in the rural medium, the situation is similar - in the case of girls - with the one of the urban medium,

namely that the subjects of the series under study showed larger sizes in the pre-pubertal stage and, on the contrary, smaller sizes in the post-pubertal one, comparatively with their colleagues from the cities of Suceava, Neamţ and Bacău while, in the boys from the rural areas, a clear-cut superiority of the Chişinău ones was to be noticed over the whole interval taken in the study (10-16 years), comparatively with their colleagues from the rural medium of the other three districts, the differences being significant for all classes of age.

The girls from the rural medium of the Chişinău district (table 2) exceed - by their stature - the girls from the villages of the Suceava, Neamţ and Bacău districts, at ages of 10, 11, 12, 13 and 14 years, the maximum differences recorded on classes of age being significant, as follows: 8.24 cm at 10 years (*versus* the values recorded in the district of Bacău), 3.93 cm at 11 years (*versus* the district of Suceava), 7.13 cm at 12 years (*versus* the district of Neamţ), 4.12 cm at 13 years and 2.29 cm at 14 years (*versus* the district of Bacău). At the age of 15 years, the teenagers of the rural medium of Chişinău are overcome by the ones of Neamţ and Suceava districts in their average stature values, yet the differences are of the sub-unit type. In the last class of age, the girls from the series under study remain inferior - as to their stature - to their colleagues of the other districts, with the only observation that, in this last case, the differences are much lower, the maximum differences - of 1.03 cm -

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being in favor of the teenager girls of Suceava.

As already mentioned, the male group of teenagers from the rural areas of Chişinău (table 1) shows higher average stature values than their colleague of the Suceava, Neamţ and Bacău districts, for all 7 classes of age (10-16 years). Maximum differences, recorded for each class of age in part, and significantly higher than in the case of girls, are of 7.94 cm at the age of 10, 4.44 cm at 11 years, 7.28 cm at the 12 years, 5.76 cm at the 13 years (*versus* Bacău district), 4.80 cm at the 14 years (*versus* Neamţ district) and 5.91 cm at the 16 years (*versus* Suceava district).

Weight. Tables 1 and 2 present the age-induced variability of the average values of weight in the teenagers of both rural and urban areas of the Chişinău district *versus* the ones of the youngsters of the same chronological ages from the Neamţ, Suceava, Bacău districts and the city of Timișoara.

In the boys of the urban medium (Chişinău) taken its study, the variability of bodily weight with age (table 1) is as follows: at ages of 10, 11 and 13 years, the average weight of the boys of Chişinău is higher than that of the other four urban series (Piatra Neamţ, Suceava, Bacău and Timișoara). At the age of 12, the boys of the series under study are exceeded only by their colleagues of Piatra Neamţ, at 14 - by those of Suceava, while at 15 and 16 years (the last two classes of age), the average weight values of the boys from Chişinău are lower than of those recorded in the boys of Timișoara and Suceava. The

maximum differences, in favor of the Chişinău boys, calculated separately for each class of age are of 6.61 kg at 10 years and of 5.52 kg at 13 (*versus* the Suceava series), of 4.49 kg at 11 years (*versus* the series of Bacău), 2.97 kg at 12 years (*versus* the Timișoara city) and of 4.88 kg at the 14 years (*versus* the Piatra Neamţ series). In the last two classes of age, the average weight of the Chişinău boys is quite close to that of their colleagues from Romania, seen as slightly exceeded - at the age of 15 - only by the Timișoara boys (0.50 kg), and, at 16 years, by those of Suceava and Timișoara (0.33 kg and, respectively 0.23 kg).

In the case of girls (table 2), the situation is as follows: the girls of Chişinău exceed - by their average weight values - the teenagers of the other 4 cities at ages of 10, 11 and 13 years while, at 12 years, they are exceeded only by their colleagues of Piatra Neamţ, at 14 years - by those of Suceava and, at 15 and 16 years, by those of Timișoara and Suceava. Similarly with the observations referring to stature, the superiority of the girls from Chişinău *versus* the other four series is obvious up to the age of 13 years (included), which is actually the time at which their average pubertal age had been established. After this age, the average weight values of the girls from Chişinău are slightly lower (or, in some cases, quite similar), comparatively with other 4 series. The maximum differences, recorded on classes of age, in favour of the girls from Chişinău are: 7.08 kg at 10 years,

4.46 kg at 11 years and 5.81 kg at 13 years (*versus* the series of Suceava); 2.90 kg at 12 years and 3.33 kg at 14 years (*versus* the series of Bacău). At ages of 15 and 16 years, the girls of Chişinău generally evidence lower average weight values, comparatively with the other feminine series, the maximum differences occurring at the age of 15 (3.26 kg in favour of the girls of Suceava) and 3.18 kg, respectively, at the age of 16 (in favour of the Timișoara girls).

Tables 1 and 2 list the variability of bodily weight, over the 10-16 years interval, in teenagers from the rural area of the Chişinău district, *versus* the groups of the same chronological ages from the villages of the Suceava, Neamţ and Bacău districts.

In the case of girls (table 2), the teenagers from the series under study evidence, over the whole time interval under study, higher average weight values than the girls from the rural areas of the other 3 districts considered for comparative purposes, the differences being significant for all classes of age. The highest differences are recorded *versus* the series of the Bacău district. Indeed, with the exception of the age of 11 years, when the maximum difference (2.32 kg) appears *versus* the series of the Neamţ district, for all the other classes of age, the maximum differences (varying between 2.20 kg and 7.12 kg), appear *versus* the series of the Bacău district.

As to the boys coming from the villages in the vicinity of Chişinău (table 1), the average values of bodily weight offer an identical image to that of the girls, that is, in all the seven

classes of age, the boys from the rural medium of Chişinău have higher average weight values than their colleagues from Moldova - Romania, the differences recorded being, once again, considerable. Thus, the maximum weight differences, for each class of age, in favour of the teenagers taken into study are - comparatively with the series of the Bacău district - as follows: 4.90 kg at 10 years; 4.00 kg at 11 years; 5.88 kg at 12 years; 5.44 kg at 13 years; 4.69 kg at 14 years; 4.85 kg at 15 years and 9.92 kg at 16 years.

CONCLUSIONS

A comparison with the data collected by the authors in the district of Chişinău - Republic of Moldova with those provided by Marieta Vasilov in 1999, in the urban and rural areas of the Bacău, Neamţ and Suceava districts, and with those of Brighita Vlaicu, gathered in 1998 in the Timișoara city, led to the following conclusions:

- In their pre-pubertal period (10-13 years), both the girls and the boys of Chişinău evidence higher average size values than the other groups while, in a post-pubertal stage, the situation is completely reversed, the series under study being inferior - as to bodily size - to the other 4 groups (the cities of Bacău, Piatra Neamţ, Suceava and Timișoara).
- In the rural medium, the situation is the same with that of the girls from the urban medium - as to stature - while, in the case of boys, a clear-cut superiority is noticed for the boys from the villages of the

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Chişinău district, along the time interval considered (10-16 years), *versus* their colleagues from the rural area of the other 3 districts (Bacău, Neamţ and Suceava).

- In the case of bodily weight, similarly with the case of stature, the superiority of the boys and girls from Chişinău *versus* the other 4 urban series under comparison (Bacău, Piatra Neamţ, Suceava and Timişoara) is well-evidenced up to the age of 13 (in the pre-pubertal period). After this age, the average values of bodily weight are - in the boys and girls of Chişinău - slightly lower (or, in some cases, quite close) than in the other 4 series.
- Along the 10-16 years interval of age, the teenagers - both boys and girls - from the rural vicinity of the Chişinău city evidence average values of their bodily weight superior to those of their colleagues from the comparative batches, the differences recorded being significant for all classes of age.

REFERENCES

1. Vasilov Marieta: *Studiul longitudinal al dezvoltării fizice a copiilor și tinerilor – secvența transversală 1992. Rezultate în cele 8 județe ale Moldovei*. Bul. inf. IPSMP, București, 1994, II, 4.
2. Vasilov Marieta, Damaschin F: *Sănătatea copiilor – indicator de sănătate al comunității*. Ed. Comandor, 1999.
3. Vasilov Marieta: *Dezvoltarea fizică a copiilor și tinerilor (0-18 ani) din județele Moldovei*. Ed. Fundației Altius Academi, 2001.
4. Vlaicu Brighita, Vasilov Marieta: *Adolescența. Particularități antropometrice în Banat și Moldova*. Ed. Eurobit, 1998.
5. Vlaicu Brighita, Darany Gabriela, Gluhovschi Emilia, Putnoky Salomeia, Motoc Marilena, Petrescu Cristina: *Aspecte antropometrice de creștere la școlari mari*. Jurnal de medicină preventivă, Institutul de Sănătate Publică Iași, 2000, 8, 2.
6. <http://www.statistica.md/>
7. <http://www.recensamantulpopulatiei.md>
8. <http://www.clubafaceri.ro/info-articole/articol/1294>.