

PAVLOVA Y.

Lviv State University of Physical Culture

Life quality and health of children and youth of Ukraine

Abstract. Purpose: to describe the parameters of schoolchildren's life quality. **Material and Methods:** the studies were conducted during 2012–2014 in Lviv region (Ukraine). 988 schoolchildren at the age of 15–16 years old, 300 – at the age of 13–14 years old, 406 – at the age of 11–12 years old were surveyed with PedsQL questionnaire. **Results:** it was shown the respondents positively characterized the physical and social health, but their mental state was unsatisfactory. The amounts of children who had serious difficulties with basic physical activity and problems with social communication did not exceed 7%. **Conclusions:** the average life quality indicators were in the range 71,9–85,0 points and according scales Physical Health, Emotional Functioning, School Functioning significantly reduced with age.

Keywords: health, physical activity, quality of life, youth.

Introduction. The quality of life makes indissoluble whole with health of a person. Estimation of the quality of life of children and youth is necessary for the identification of groups of risk, the establishment of efficiency of preventive programs of different level, the forecasting of health of the population in the future.

The main difficulties at estimation of the quality of life of children are predetermined by physical and cognitive development which in turn demands the attention at a choice of techniques for the research. If provide an advantage to the determination of wellbeing which offers WOHC, the quality of life of children and youth will be defined by their ability to take part in a certain physical and social activity [2–4].

For today there are about 30 general and 64 special tools for the estimation of quality of life of children and teenagers. “Kernel” of the majority of the general techniques is the basic concepts connected with physical, mental and social health [5; 6; 8].

The general techniques allow to analyze such compound qualities of life: physical health (physical and motive activity, available feelings of pain, vigor, incidence, practice of immunization), psychological health (emotional state, cognitive functioning), social health (relations with coevals and native, spending of free time with parents and so forth), environment (medical care, carelessness of living conditions), vital competence and so forth.

For studying of wellbeing of children and youth actively use the measuring system PedsQL. It provides separate versions of the questionnaire for different age groups, and the questioner consists of basic and special parts. Questionnaires of PedsQL are translated and adapted and are used in the countries of Europe, North and South America and Asia [1; 2; 5; 8; 11].

In Ukraine PedsQL is used for the research to quality of life of children with sharp or chronic diseases. Therefore actual is a studying of wellbeing of almost healthy faces that allows understanding better norms of health, peculiar for this or that region.

The objective of the research was to characterize parameters of quality of life of the Ukrainian children and youth.

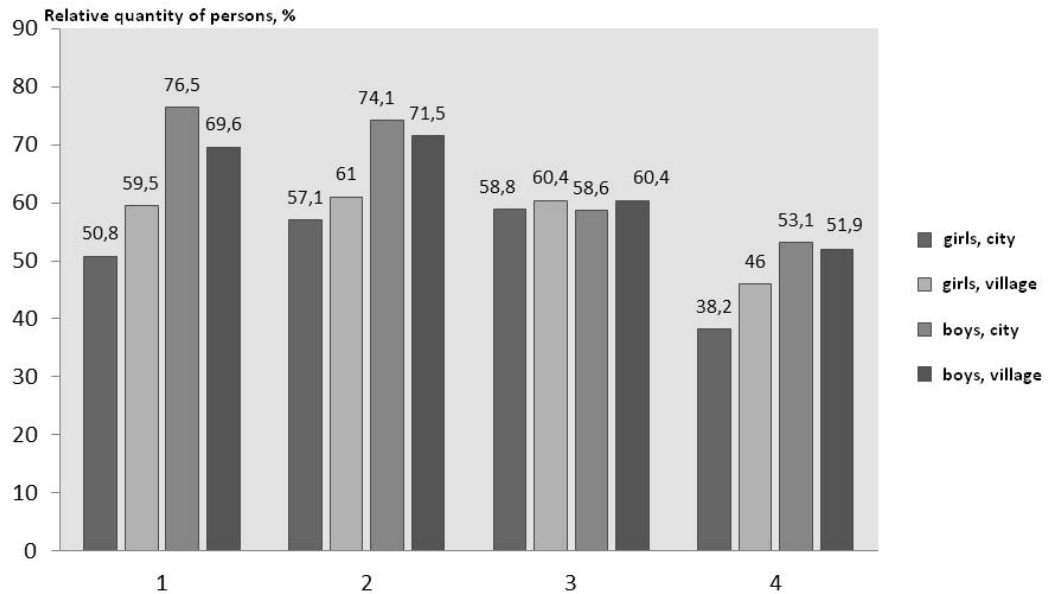
The tasks of the research:

1. To analyze separate indicators of health of pupils (physical activity, psychological state, relations with people around).
2. To calculate a general meaning of quality of life and to analyze an age dynamics of wellbeing.

Material and methods of the research. The sociological research was conducted with the use of questionnaires of PedsQL in 2011–2014 in the Lvov region. 988 pupils of the 10th class (age of 15–16 years old), 300 – 8th classes (13–14 years old), 406 – 6th classes (11–12 years old) took part in PedsQL interrogated according to a technique. Respondents gave answers to separate questions by a 5-ball scale of Laykert. They defined the general indicator of quality of life, and also the value according to scales “Health and activity”, “Emotional state”, “Relations”, “School”.

The program Origin was used for a statistical data processing.

Results of the research and their discussion. Respondents who weren't ill within the last month took part in a poll. The majority of them have no difficulties with the main kinds of basic motor activity. So, 76,9% of the girl tenth-graders which lived in cities, 80,0% – in villages, 85,8% of young men from cities and 78,9% from villages noted that 92,0% of respondents who never needed an assistance to take a bath or a shower, rise more than on one floor by a ladder easily. But considerably the number of respondents is much smaller who perform tasks with ease which demands certain physical efforts (pic. 1).



Pic. 1. Health and activity of pupils of the tenth class:

1 – respondents noted that it isn't difficult to run for them, 2 – to do physical exercises and sports, 3 – to perform daily homework; 4 – respondents feel very vigorous

Note. 238 girls from cities, 328 – from villages, 162 – young men from the city district, 260 – from the rural took part in the poll.

Answers to questions which concerned health and daily activity, differed depending on a sex and a residence of respondents. They noted that it is difficult to run for them, 3,4–4,2% of girls, 1,2–4,3% of boys, noted that it is difficult to run to them (respondents chose answers "often", "almost always"). The lowest indicators are characteristic for youth from rural areas. Answers "Sometimes" or "Almost never" chose 45,0% of girls from cities, 35,7% – from villages, 19,1% and 29,2% of young men – from cities and villages respectively. Among young men the number of respondents who answered "Never", makes 69,6–76,5%, among girls – 50,8–59,5%. And consequently, the number of girls who have no difficulties with run, is for 13,4–17,0% smaller in comparison with boys.

Similar regularities observed concerning the answers of respondents to the statement "It is difficult to do physical exercises and sports for me". Nearly a half of girls who live in the cities (43,9%), have certain difficulties during classes by physical culture and sport, but young men much more often chose the opposite answer. The relative number of respondents who have no problems with classes by physical culture and sport (chose the answer "Never"), makes 71,5–74,1%.

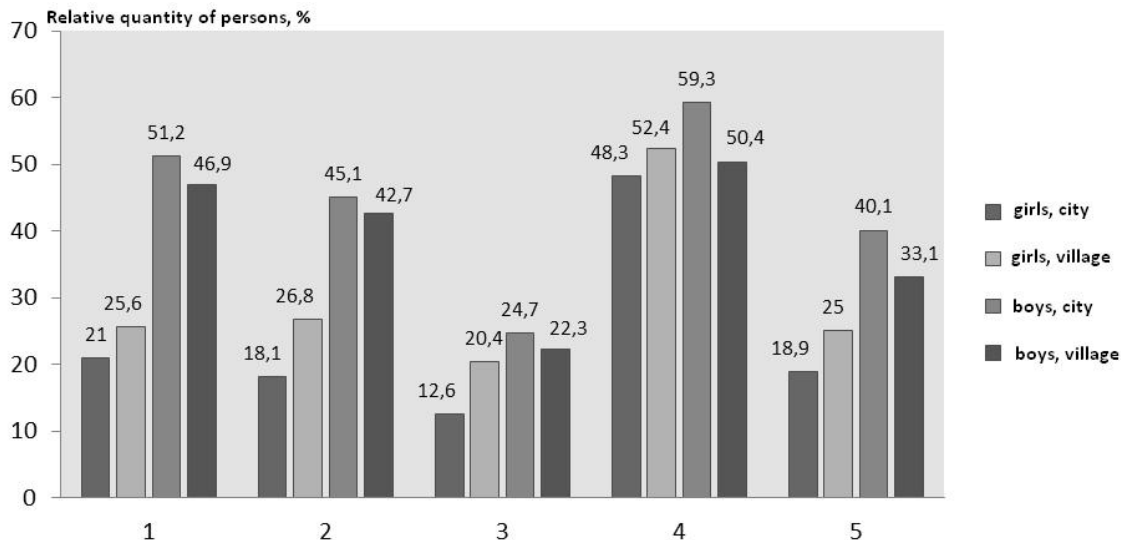
It isn't difficult to lift heavy things of 65,8–70,4% to young men and 41,5–45,8% to girls. However the relative number of persons, who have no difficulties with homework performance, significantly doesn't differ at respondents of a different sex and makes about 60%. Every fifth girl who lives in the city or in the village, often feels physical pain, among boys who live in the cities this indicator makes 16,1%, in the village – 22,6%.

Generally respondents have positive relations with coevals – easily find a common language with other pupils of 80,3% of girls from the cities, 82,3% – from villages, 81,5% and 86,5% of young men who live in city and rural areas respectively. Only 4–7% of respondents noted that coevals often or always sneer from them or don't want to be on friendly terms, and also feel fatigue and concern during communication with schoolmates.

Actual for today for school pupils of any age is the problems with psychological health which is often shown in inability to concentrate, to perform for a long time monotonous tasks, to remember, to store positive

mood and so forth.

Indicators which characterize a mental condition of respondents are worse than physical (pic. 2). 36,6% and 34,1% of girls who live in the village and the city respectively, notice that sometimes, often or nearly always feel fear. The number of boys who choose the same answers is twice lower. Every second girl and every third boy worry for own future, in particular often or nearly always – every seventh schoolgirl and every tenth pupil. Only 18,1% of schoolgirls from the cities and 26,8% from villages answered that never feel suppressed, there is nearly a half of such (45,1% – from the cities, 42,7% – from villages) among boys. Uneasily 5,9–7,4% of pupils, 48,3–59,3% of pupils sleep, never have problems with a dream, 25,9–33,1% of respondents – almost never.



Pic. 2. Psychological state of pupils of the tenth class:

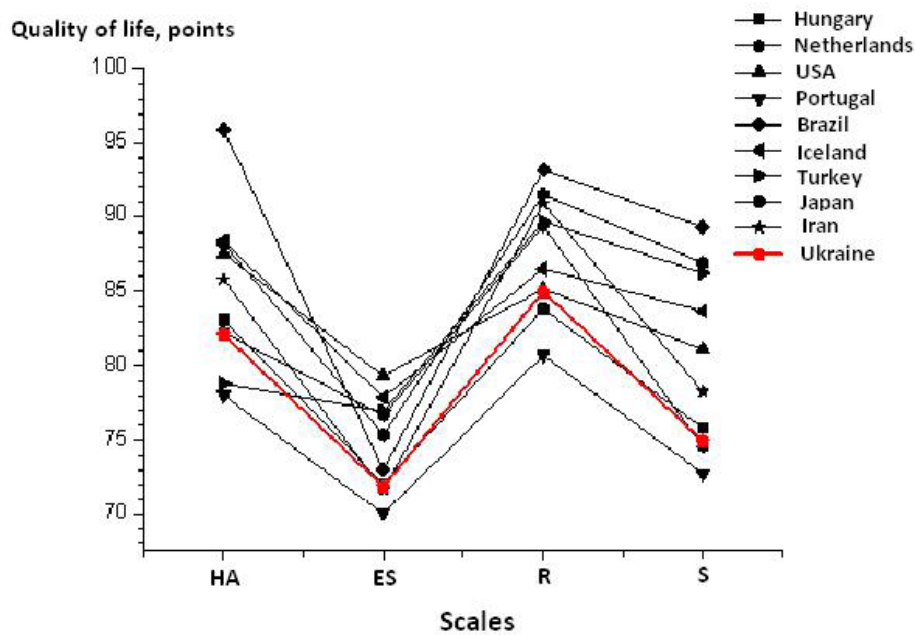
1 – respondents don't complain of feeling of fear, 2 – don't feel suppressed, 3 – angry, 4 – have a quiet dream, 5 – aren't anxious through a future

Note. 238 girls from cities, 328 – from villages, 162 – young men from the city district, 260 – from the rural took part in the poll

It is often or always difficult for respondents to concentrate in a class of 5-11%, thus girls choose these answers twice less than boys. Only every fifth schoolgirl and every third pupil have no problems with performance of tasks at school, every second pupil and schoolgirl always easily concentrate in a class, never forget the things. It is necessary to notice that a significant amount of respondents doesn't attend class at school in connection with feeling sick or to visit hospital or policlinic. 22,3% of schoolgirls from the cities, 36,3% – from villages and 42,0% of young men from the city district, 40,8% – from rural never miss lessons from these reasons. The answer "Almost never" was chosen by 46,6% of city girls, 37,5% of girls, from villages and 35,8% and 38,1% of children from the cities and villages respectively, "Sometimes" – chose every fourth girl and each 6–7 boy. The number of children who often or always skip class at school through feeling sick makes 5,5% for schoolgirls of the cities, 2,1% – of villages, 4,6% – young men of the cities, 5,9% – of villages.

Parameters of the quality of life of the Ukrainian school students compared to wellbeing of respondents from North and South America, Europe and Asia, and also studied data of youth which has different chronic diseases. The quality of life of the Ukrainian pupils according to all scales below, than at children and youth which live in the USA, Brazil, Turkey, Iceland, Japan, Iran and the Netherlands (pic. 3). The average values of wellbeing depending on a scale make 71,9–85,0 points.

The average values according to scales "Health and activity", "Emotional state", "Relations" and "School", don't differ from data for residents of Hungary and above, than in Portugal (tab. 1). According to a scale "Health and activity" Ukrainians have a value on 13,8 points lower, than at citizens of Brazil, 6,3 and 6,1 points – than in Iceland and Japan respectively, 5,4 points – than in the USA, 3,7 points, – than in Iran. Inhabitants of the USA, Iceland, Turkey and Japan, have scale indicators "Emotional state" 3,5-7,4 points above, than at Ukrainians. The level of social activity (a scale of "Relation") at pupils of the 10th class is high; indicators on this scale are the highest and also make 84,9±17,4 points.



Pic. 3. Quality of life of youth (by own results (n=988, age of 15-16 years old) and data of literature [2–5; 7–11]):
 HA – “Health and activity”, ES – “Emotional state”, R – “Relations”, S– “School”

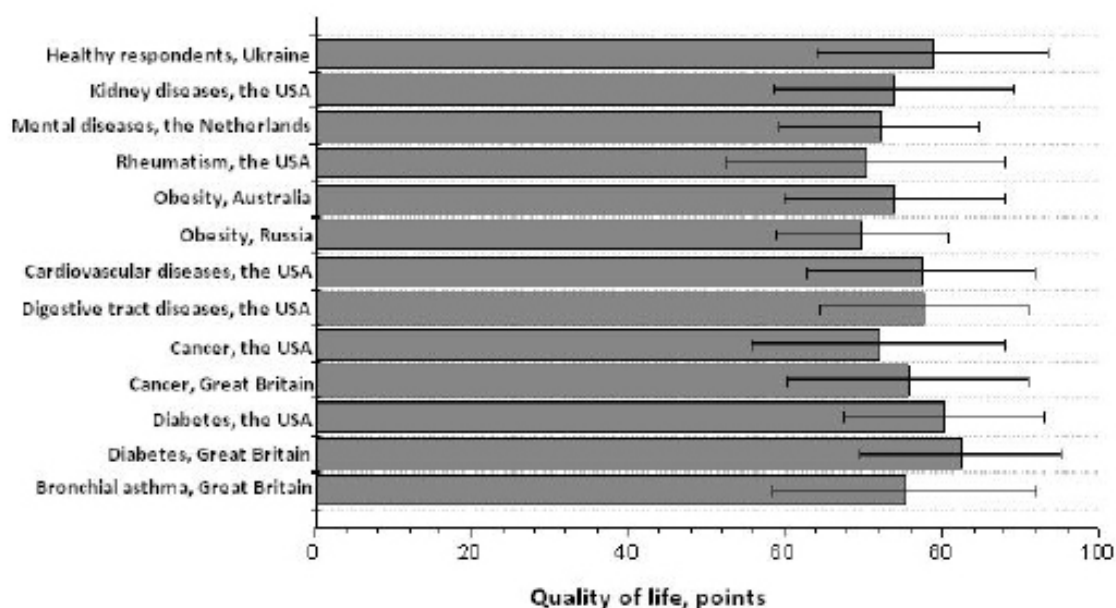
Table 1

Quality of life of children and youth of different countries of the world

Source	Country	Quantity of respondents, age	Scale, points			
			Health and activity	Emotional state	Relations	School
D. A. Klatchoian and others [8]	Brazil	180, 5–18	95,9±5,8	73,0±16,5	93,1±10,5	89,3±11,8
P. Amiri and others [9]	Iran	848, 13–18	85,8±12,8	71,7±18,7	90,9±12,9	78,3±16,2
E. K. Svavarsdottir, B. Orlicsdottir [10]	Iceland	330, 10–12	88,4±9,4	77,9±15,0	86,5±14,8	83,7±12,8
V. Engelen and others [4]	The Netherlands	185, 13–18	82,2±9,2	76,7±15,2	89,4±11,6	74,6±13,2
P. Ferreira and others [3]	Portugal	50, 8–12	78,0±19,6	70,1±18,3	80,7±17,8	72,8±15,2
J. Varni and others [11]	the USA	5 480, 8–18	87,5±13,5	79,3±18,2	85,2±16,8	81,1±16,5
S. S. Basgul and others [2]	Turkey	217, 5–18	78,8±18,3	77,0±14,9	89,7±13,1	86,2±13,2
A. Berkes and others [7]	Hungary	366, 5–18	83,1±14,2	72,1±17,8	83,8±16,1	75,8±16,7
K. Kobayashi, K. Kamibeppu [5]	Japan	489, >8	88,2±10,7	75,4±17,7	91,5±12,0	86,9±10,9
Own data	Ukraine	406, 11–12	89,6±11,6	77,1±16,6	85,8±15,2	79,4±14,5
		300, 13–14	86,5±10,1	71,9±15,5	85,1±11,3	74,0±14,8
		988, 15–16	82,1±15,7	71,9±15,6	85,0±17,4	75,0±16,8

The average value of a scale “Relation” doesn’t differ from the values calculated for the population of the USA, but it is on 8,1 points lower, than at Brazil, 6,5 points – Japan, 5,9 points, – Iran, 4,7 point – Turkey and 4,4 point – the Netherlands. Value on a scale “School” makes 74,9±16,8 points and there are 14,3 points below, than at youth of Portugal, 11,2 points – Turkey, 11,9 points – Japan.

According to recommendations of developers of the questionnaire of PedsQL lower than 50 points interpret indicators as bad quality of life, 51–75 points, – average, it is higher than 76 points – high. However the comparison with a group of persons with sharp or chronic diseases is important at the estimation of wellbeing of healthy respondents. Among respondents of clinical group – children and youth of the USA, Great Britain, Australia, the Netherlands and Russia who suffer on bronchial asthma, disease of an enteric-gastric path, vessels and heart, cancer, terminal stage of a chronic renal failure, obesity, rheumatism, mental diseases (pic. 4). The general indicator of quality of life of the Ukrainian pupils makes $78,9 \pm 14,7$ points which are on 3,8 points lower, in comparison with youth of Great Britain and 1,5 points less, than at young Americans who have diabetes. The value of wellbeing of the Ukrainian pupils is 3-5 points below, than at youth from the developed countries which suffers on asthma, obesity, renal failure, cancer (in case of Great Britain); on 7–9 points – than at respondents in whom the cancer, obesity (Russia), mental disorders or rheumatism is diagnosed. The indicator of quality of life of healthy faces practically didn't differ from these respondents with enteric-gastric or cardiovascular diseases.



Pic. 4. The general indicator of quality of life of the Ukrainian youth (n=988, age – 15–16 years old) and respondents of other countries of the world who have different diseases (by data [1; 6; 11]):

CVD – cardiovascular diseases, DT – digestive tract

Younger respondents (the age of 11-12 years old) have the highest indicators according to scales “Health and activity”, “Emotional state” and “School”, in comparison with the senior school students (tab. 2). The value of a scale of “Relation” authentically didn't differ ($p < 0,01$) and were at the high level at all groups of respondents. On this scale the difference between younger and senior pupils makes only 0,8% for girls and 2,7% for young men.

Table 2

Quality of life of boys and girls of the different age, $\bar{X} \pm m$

Scales	Quality of life, points			
	11–12 years old		15–16 years old	
	Girls, n=206	Boys, n=200	Girls, n=206	Boys, n=200
Health and activity	86,5±12,1	89,3±10,6	82,9±15,1	86,5±15,56
Emotional state	75,9±17,8	81,7±13,9	69,4±16,9	76,1±17,52
Relations	86,2±16,1	87,7±13,8	85,4±16,5	85,0±17,8
School	80,5±15,0	80,3±13,7	74,6±15,6	75,9±18,8
General indicator	82,3±11,7	84,8±9,7	77,8±13,5	80,7±15,0

The difference is 5,5–6,5% by the scales «Emotional state» and «School». The value of quality of life on a scale makes «Emotional state» 75,9±12,1 points for girls of 11-12 years old, for persons at the age of 15-16 years old – 69,4±16,9 points; for boys – 81,7±13,9 points, for young men – 76,1±17,5 points. The average value of quality of life on a scale «School» is in limits of 80,3-80,5 points and statistically doesn't differ ($p < 0,01$), irrespective of a sex and age. The indicator for schoolgirls of the tenth class is only on 6 points lower, pupils – 4 points. Behind the scales «Health and activity», «Emotional state», «Relation» the quality of life of girls is lower than at boys irrespectively from the age of respondents.

Conclusions. The respondents positively characterize actually physical and social health; however their mental state is unsatisfactory. 50–75% of respondents gave the highest assessment to physical health and social activity and to psychological health – 13–60% of respondents. The relative number of children who have serious difficulties with basic physical activity and problems at communication with people around doesn't exceed 7%. They observed differences in physical and psychological health, daily activity of pupils depending on a sex and a residence.

The quality of life of the Ukrainian pupils is lower, than at children and youth from the USA, Brazil, Turkey, Iceland, Japan, Iran and the Netherlands. The average values of wellbeing authentically decrease with the age by the scales “Health and activity”, “Emotional state” and “School”. The general indicator of the quality of life of the Ukrainian pupils makes 78,9±14,7 points which are on 3-7 points lower, than at youth of the developed countries which suffers on asthma, obesity, renal failure, mental disorders or rheumatism.

Prospects of the subsequent researches consist in the research of possibility of the improvement of quality of life of children and youth by the application of improving and recreational technologies.

References:

1. Akhmedova R. M., Sofronova L. V. *Pediatrics* [Pediatrics], 2012, vol. 5, pp. 122–124. (rus)
2. Başgöl Ş. S. Parents' perception of the quality of life of children with intellectual disabilities / Ş. S. Başgöl, Öz. Ş. Üneri, N. Çakın-Memik // *The Turkish Journal of Pediatrics* – 2011. – Vol. 53. – P. 541–546.
3. Ferreira P. L. Reliability and validity of PedsQL for Portuguese children aged 5–7 and 8–12 years / P. L. Ferreira, C. F. Baltazar, L. Cavalheiro [et al.] // *Health and Quality of Life Outcomes*. – 2014. – Vol. 12, № 122. – 8 p.
4. Health related quality of life of Dutch children: psychometric properties of the PedsQL in the Netherlands / V. Engelen, M. M. Haentjens, S. B. Detmar [et al.] // *BMC Pediatrics* – 2009. – Vol. 9, № 68. – 8 p.
5. Kobayashi K. Measuring quality of life in Japanese children: Development of the Japanese version of PedsQL / K. Kobayashi, K. Kamibeppu // *Pediatrics International*. – 2010. – Vol. 52. – P. 80–88.
6. Measurement properties of the UK-English version of the Pediatric Quality of Life Inventory™ 4.0 (PedsQL™) generic core scales / P. Upton, C. Eiser, I. Cheung, H. A. Hutchings [et al.] // *Health and Quality of Life Outcomes*. – 2005. – Vol. 3, № 22. – 7 p.
7. Measuring health-related quality of life in Hungarian children with heart disease: psychometric properties of the Hungarian version of the Pediatric Quality of Life Inventory™ 4.0 Generic Core Scales and the Cardiac Module / A. Berkes, I. Pataki, M. Kiss [et al.] // *Health and Quality of Life Outcomes* – 2010. – Vol. 8, № 14. – 12 p.
8. Quality of life among children from São Paulo, Brazil: the impact of demographic, family and socioeconomic variables / D. A. Klatchoian, C. A. Len, M. T. R. A. Terreri, M. O. E. Hilário // *Cad. Saúde Pública*. – 2010. – Vol. 26, № 3. – P. 631–636.
9. Reliability and validity of the Iranian version of the Pediatric Quality of Life Inventory™ 4.0 Generic Core Scales in adolescents / P. Amiri, E. M. Ardekani, S. Jalali-Farahani [et al.] // *Qual Life Res*. – 2010. – Vol. 19. – P. 1501–1508.
10. Svavarsdottir E. K. Health-related quality of life in Icelandic school children / E. K. Svavarsdottir, B. Orlygsdottir // *Scand J Caring Sci*. – 2006. – Vol. 20. – P. 209–15.
11. Varni J. W. Impaired health-related quality of life in children and adolescents with chronic conditions: a comparative analysis of 10 disease clusters and 33 disease categories/ severities utilizing the PedsQL™ 4.0 Generic Core Scales / J. W. Varni, C. A. Limbers, T. M. Burwinkle // *Health and Quality of Life Outcomes*. – 2007. – Vol. 5, № 43. – 15 p.

Received: 10.03.2015.

Published: 30.04.2015.

Iuliia Pavlova: PhD (Biology); Lviv State University of Physical Culture: Kostyushko Str., 11, 79007, Lviv.

ORCID.ORG/0000-0002-8111-4469

E-mail: pavlova.j.o@gmail.com