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Level of involvement of children and adolescents in various forms of motor activity in Ukraine and member countries Active Healthy Kids Global Alliance

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Purpose: *compare the estimates of individual indicators of motor activity in Ukraine and other countries according to the standards of the Active Healthy Kids Global Alliance (AHKGA).*

Material & Methods: *analysis and generalization of scientific literature; methods of the theoretical level of research (analysis and synthesis), a sociological survey, evaluation of data using the Active Healthy Kids Global Alliance methodology. The study was conducted in groups of students aged 12–14 (n=1893, of whom 899 were men and 994 girls) and 15–17 years (n=925, of them 449 men and 476 girls). The assessments of the indicators of the motor activity of children of different ages, presented in the AHKGA database and special reports from different countries.*

Results: *results of a survey of pupils of secondary schools in Ukraine, the analysis of reports on the motor activity of children in the AHKG member countries made it possible to compare the estimates of such indicators of locomotor activity as organized sport and physical activity, unorganized active play, and active transportation.*

Conclusions: *according to AHKGA standards, organized sports activities and motor activity of Ukrainian children are rated for "D", unorganized gaming activity – for "C" and active movement – for "B".*

Keywords: *children, pupils, motor activity, AHKGA, active movement, sports, gaming activities.*

Introduction

Positive effect of motor activity on the state of human health is a universally recognized fact. Insufficient level of motor activity can cause the development of a number of diseases and adversely affect the overall functional state of the body [16].

Importance of motor activity in the formation of a healthy nation is also fixed in nationwide official documents. In particular, in the National strategy for improving motor activity in Ukraine until 2025, "Motor activity – a healthy lifestyle – a healthy nation" states that the motor activity should be introduced for the primary prevention of chronic non-infectious diseases and physical rehabilitation [6].

To date, the motor activity of children of different ages is considered as a set of organized and unorganized forms, carried out during the day [8; 10]. Special concern for specialists is caused by the volume of motor activity of children and teenagers in their spare time. Reduction in the volume of motor activity is often due to the fact that children of different ages choose inactive ways of spending free time [9]. This phenomenon contributes to the overall economic development and welfare of citizens of different countries [16].

The influence of motor activity on the formation of the organism of children of different ages in our time is an object of study of many scientific studies around the world [11; 12].

Among the Ukrainian scientists, the problem of the motor activity of children of different ages is also a popular subject of research. The scientific works of this subject cover the age periods, beginning with preschool age. In this context, we recall the research of N. Moskalenko "Modeling the rational motor conditions of children 3–4 years in pre-school institutions of various types" (2016) [4].

Group of authors, A. Kindzer, I. Bodnar and N. Sorokolit found that only 25,5% of schoolchildren actively spend their leisure time, after school attend sports sections or dance clubs [2]. The connection of physical activity and mental performance of students in the main school was studied by G. Danilenko [1]. Motivation for the motor activity of primary schoolchildren – A. I. Ostapenko and I. V. Kosaty [5]. Features of the motor activity of junior schoolchildren in the course of the school day were also studied by V. A. Sutula, A. Kh. Daineko, and A. V. Vishnya. The authors, in particular, found that the educational material for fifth-ninth-grade students is not actually accompanied by a meaningful continuation of the formation of a culture of motor activity among schoolchildren [7].

Studying various aspects of motor activity, the authors quite often study the specificity of its influence on the systems of the organism of people of different age groups. In particular, T. Yu. Krutsevich and N. E. Pangelova in the study "Rational motor activity as a factor in increasing the mental capacity for work of schoolchildren" found that different regimes of physical activity in the physical training class allow to influence the effectiveness of mental activity of schoolchildren during the school day [3].

In 2004, in Kenya, the Republic of South Africa, Kenya and the state of Louisiana (USA), data were summarized on the studies of the involvement of children and young people in various forms of motor activity. These data formed the basis of the corresponding reports called the "Report Cards on Physical Activity". Such reports contained information on a complete assessment of the current state of motor activity among children and youth in a given country [13]. "Map of the motor activity report" interpreted the relevant scientific conclusions for

practical application in the state policy to increase the level of systematic involvement of children and youth in various forms of motor activity [15].

In 2014, the Active Healthy Kids Global Alliance (AHKGA, Global Alliance for Active, Healthy Children) was created. The organization brought together academics, health professionals and all those interested in working together to develop physical activity among children and young people around the world. The number of countries that are joining the corresponding cooperation is increasing annually. To date, scientists from 38 countries from all over the world have presented their reports to the Alliance. All reports are based on standardized schemes that provide estimates of certain indicators of motor activity [14].

To date, most studies of the motor activity of people of different ages, carried out by Ukrainian scientists, do not have unified algorithms. This concerns both approaches to determining the volume of motor activity, and the forms and types of motor activity themselves, which are the object of scientific research. This makes it difficult to carry out a comparative analysis with similar data that are presented by international organizations or scientists from other countries.

Relationship of research with scientific programs, plans, themes. The research was carried out in accordance with the research topic of the Department of Theory and Methods of Physical Culture of Lviv State University of Physical Culture for 2017–2020. "Theoretical and methodical aspects of the optimization of the motor activity of various population groups" (minutes No. 4 of 17.11.2016).

Purpose of the study was to compare the assessments of individual indicators of motor activity in Ukraine and the countries members of the Active Healthy Kids Global Alliance.

Objectives of the study:

1. Using the methodology of AHKGA, to determine the indicators of such indicators of general educational motor activity of children in Ukraine, such as: organized sport and physical activity, active play and active transportation.

2. To determine the impact of the indicators of the countries' economic development on the selected indicators of motor activity and make a comparative analysis of these indicators.

Material and Methods of the research

To solve the set tasks, a sociological poll was conducted among pupils of general education schools in Ukraine. In the sociological survey, two groups of students took part. The first group was students aged 12–14 years, the second – students aged 15–17 years. The research was carried out on the basis of general educational institutions Lviv, Ternopil, Ivano-Frankivsk and Khmelnitskyi.

The total number of interviewed students aged 12–14 years was 1,893 people, which is 4% of the total population. Nnumber of interviewed children was 899 people, the number of girls interviewed – 994 people. The accuracy of the study was ±3%.

The total number of interviewed students aged 15–17 was 925 people, which is 6% of the total population. Number of interviewed children was 449 people, the number of girls interviewed – 476 people. The error in the study was ±3%.

Research methods: analysis and generalization of scientific literature; methods of the theoretical level of research (analysis and synthesis), a sociological survey.

Results of the research and their discussion

This study compares our own empirical data with similar data from other countries. It should be noted that most of the reports on the motor activity of children and young people in different countries are presented in the form of relevant scientific publications, and are systematized on a special electronic resource The global matrix 2.0 on physical activity for children and youth [14].

The data presented in the motor activity reports are evaluated according to a standard scale, which is common for all AHKGA member countries. The scale provides for equal ratings from "A" (high level) to "F" (lowest level). In some cases, the relevant indicators may be undefined, then in the report they are indicated by the abbreviation "INC" (there is no data on this indicator) [14]. Evaluation criteria are presented in Table 1.

Table 1

Criteria for assessing the state of motor activity in children and youth

Assessment	Landmark
A	81–100%
B	61–80%
C	41–60%
D	21–40%
F	0–20%
INC	no data on this indicator

When comparing data from different countries in our study, we took into account information on gross domestic product (GDP) per capita [17], as well as life expectancy in different countries, presented in the report of the World Health Organization (WHO) [18].

Level of attraction to unorganized gaming (active play). Because of the lack of a unified algorithm for collecting information, and also because of the complexity of the correct interpretation of the data, reports from 21 out of 38 countries sent to the AHKGA did not contain information on the unorganized gaming activities of children [14].

In the overall rating of AHKGA, two African countries received high ratings of the "unorganized gambling" segment – Ghana and Kenya [14].

Among pupils of secondary schools of Ukraine at the age of 12–14 years, 51,1% are attracted to various sports games in their spare time. At the same time, the rates between young men and women differed by 5%, amounting to 53,8% and 48,7%, respectively. In the age group 15–17 years, the rate of student involvement in gaming activities in their spare time was 50,1%. Among the pupils of the senior school age, the gender characteristics were much more expressive. If among girls this indicator was 37,8%, then among the young men it was 63% (Figure 1).

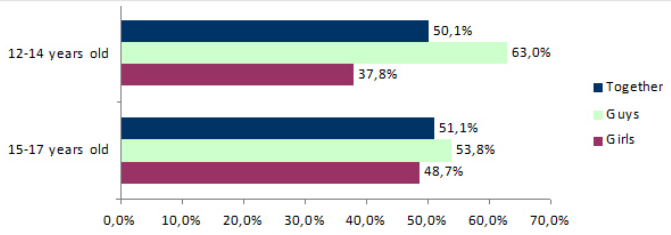

Fig. 1. Level of involvement in the unorganized gaming activity of pupils of general education schools in Ukraine (n=1893, n=925)

Such indicators allowed to evaluate the indicator "active play" in Ukraine on "C". In the list of countries in which "unorganized gambling activities" according to AHKGA standards are also rated at "C", there are a total of six countries. In these countries, the level of involvement of children in this segment of motor activity is in the range of 41–60% (Table 2).

Table 2

Countries in which the level of involvement of children and youth in unorganized gaming activities in accordance with the standards of AHKGA is rated at "C"

Countries	Estimation	Level of attraction	GDP per capita ($)	Life Expectancy
Belgium	C+	–	40 456	81,1
Spain	C+	–	26 327	82,8
Finland	C	52%	42 159	81,1
Ukraine	C	50,1–51,1%	2 109	71,3
Nigeria	C		2 758	61,8
Wales	C		–	–

Organized sport and physical activity. According to the scale of assessment proposed by AHKGA, in Ukraine, the level of involvement of children aged 12–17 in organized sports activities in their free time is rated at "D". The corresponding figures in the age groups 12–14 years and 15–17 years are 33% and 32,3%. At the same time, the rate of children in both age groups was significantly higher than that of girls (Figure 2).

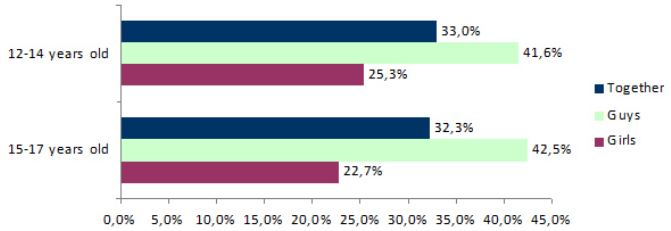

Fig. 2. Level of attracting students of general education schools in Ukraine to organized sports and motor activity (n=1893, n=925)

Analysis of additional indicators, such as GDP per capita, showed that the overall high assessment of involvement in organized sports and motor activity is not related to the economic development indicators, because in the list of countries in which the level of this indicator is rated at "D" as a country with a low level of GDP per capita, and in relation to rich countries (Table 3).

Table 3

Countries in which the level of involvement of children and young people in organized sport activities during off-school hours by AHKGA standards is rated at "D"

Countries	Estimation	Level of attraction	GDP per capita ($)	Life Expectancy
Mexico	D	40%	9 592	76,7
England	D	34%	44 118	81,2
Ukraine	D	32–33%	2 109	71,3
Poland	D	30,6%	12 662	77,5
Qatar	D	25–30%	78 829	78,2
Chile	D	25%	13 331	80,5

In the group of countries in which the index of attracting children and young people to organized sports activities during extra-curricular time is the highest, the main place is occupied by Denmark (Table 4).

Table 4

Countries with the highest rates of involvement of children and youth in organized sports activities during extra-curricular time

Countries	Estimation	Level of attraction	GDP per capita ($)	Life Expectancy
Denmark	A	83%	51 424	80,6
Sweden	B+	75%	48 966	82,4
Netherlands	B	71%	44 333	81,9
Spain	B	61–78%	26 327	82,8
Canada	B	76%	43 935	82,2
Zimbabwe	B	67%	1 037	60,7
Portugal	B	–	18 984	81,1
Australia	B	64%	51 642	82,8
Slovenia	B–	47–60%	20 712	80,8
New Zealand	C+	56%	36 963	81,6

Level of attraction to active transportation (active transportation). An analysis of this indicator of motor activity showed that the level of involvement of Ukrainian children in active forms of displacement when crossing the distance from home to school and back according to AHKGA standards corresponds to the "B" rating. Note that in active forms of movement (or transportation) is understood mainly walking and cycling. This includes also running, riding on rollers, skate, scooter and the like. Most Ukrainian schoolchildren get to school by foot. Among students aged 12–14 years, this figure is 73,6%. Another 3,6% of students of this age use a bicycle. A generalized indicator for children of this age group is 77,2%.

Among students aged 15–17 years old, walking through the distance from home to school uses 75,9% of children, the bicycle – 4,1%. The generalized indicator is 80%. Significant differences on the basis of gender were not revealed (Table 5).

As can be seen from the table, in general 74,6% of students aged 12–17 years reach the educational institution on foot, another 3.8% do it with a bicycle. A generalized indicator of

Table 5

Level of involvement of pupils of Ukrainian general education schools in active forms of displacement when overcoming the distance from home to an educational institution

Type of motor activity	12–14 years old (n=1893,%)		15–17 years old (n=925,%)		12–17 years old (n=2818, %)		Together (n=2818, %)
	Guys	Girls	Guys	Girls	Guys	Girls	
Walking	73,9	73,6	73,7	77,9	73,8	75,3	74,6
Bicycle riding	3,4	3,9	4,2	4	3,7	3,9	3,8
Together	77,3	77,5	77,9	81,9	77,5	79,2	78,4

children, using active forms of displacement when overcoming the distance from home to school is 78,4%, which is a relatively high indicator compared with similar data from other countries.

There were no significant differences with regard to the age characteristics of the students. The corresponding indicators remain practically unchanged both in the middle and in the senior school age.

There have also been no significant changes in the indicators, taking into account the gender specificity of the students. Note that only among girls aged 15–17 there is an increase in the rate of those who go to school on foot. This indicator increased by 4,3% compared to the age group of 12–14 years.

Among the European countries that reported on the motor activity of children and youth to the AHKGA, the "active movement" segment was rated "B" also in Denmark and Finland [14]. Statistical data for all countries with the same rating are presented in Table 6.
According to the AHKGA, the best indicators of attracting children of different ages to the "active movement" segment are recorded in the Netherlands and Zimbabwe [11].

In a group of countries where this segment of motor activity according to AHKGA standards received low ratings, 11 countries entered. It is interesting that most of these countries are economically developed and have high GDP per capita values (Table 7).

Table 6

Countries in which the level of involvement of children and young people in active forms of displacement according to AHKGA standards is rated at "B"

Countries	Estimation	Level of attraction	GDP per capita ($)	Life Expectancy
Ukraine	B	78,4%	2 109	71,3
Finland	B	70%	42 159	81,1
Denmark	B	68,5%	51 424	80,6
Hong Kong	B	–	42 097	–
Japan	B	68-93%	32 481	83,7
Kenya	B	60–76%	1 432	63,4
Nigeria	B	61–80%	2 758	61,8
Thailand	B–	51,2%	5 426	74,9

Table 7

Countries with low levels of involvement of children and young people in active forms of displacement according to AHKGA standards

Countries	Estimation	Level of attraction	GDP per capita ($)	Life Expectancy
Australia	C–	43–53%	51 642	82,8
Chile	C–	48,6%	13 331	80,5
England	C–	47%	44 118	81,2
China	C–	41,1%	8 280	76,1
Belgium	C–	40%	40 456	81,1
Canada	D	25%	43 935	82,2
Colombia	D	–	5 687	74,8
Ireland	D	23%	48 940	81,4
Malaysia	D	22,2%	10 073	75
SAR	D–/F–	20%	35 392	77,1
USA	F	11–15%	55 904	79,3

Conclusions

According to the AHKGA methodology, the indicators of the motor activity of children in Ukraine were selected for the study and received the following assessments: "active play" – "C" (50,1–51,1% of children aged 12–17); "Organized sport and physical activity" – "D" (32–33% of children 12–17 years old); "Active transportation" – "B" (78.4% of children 12–17 years old).

The highest scores for the indicator "unorganized gaming" were received in Ghana and Kenya ("B" score). The highest rates of involvement of children in organized sports and motor activity are recorded in Denmark and Sweden. The corresponding assessments of this indicator in the countries mentioned are "A" and "B+". The highest rates of involvement of children in active displacement are recorded in the Netherlands and Zimbabwe. "Active displacement" in these countries is rated at "A".

Childcare after hours depends on how to do it. Only in the case of "active movement" is the lowest estimates recorded mainly in economically developed countries.

Prospects for further research are the determination of other indicators of the motor activity of children of different ages in Ukraine, which will in the future form a visible report on the motor activity of children and youth in Ukraine and submit it to the AHKGA.

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