

Health-improving and educational effect of gamified physical activities Efecto educativo y de mejora de la salud de la actividad física del juego

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Abstract. One of the main reasons for the decline in the level of the nation's health is the low manifestation of physical activity in school-age children. The study is relevant because it explores one of the effective ways to solve this issue – the introduction of physical folk games (PFG) in the educational system of the Republic of Kazakhstan. This will affect the physical development of schoolchildren and increase their involvement during physical education lessons. The purpose of this study was to investigate the effectiveness of physical activities in traditional Kazakh physical games. For this, the types of Kazakh PFGs were studied, their classification was developed, a survey was conducted among schoolchildren to find out their interest in folk games. After that, an educational experiment was set up, during which the positive influence of PFG on the development of the physical skills of children at physical education lessons became evident. It was discovered that the indicators of physical mobility of schoolchildren significantly improved: the number of students with a low level of physical mobility (PM) decreased from 50% to 13%, and the average level of PM in schoolchildren increased from 31% to 62%. Due to the developments of this study, it is possible to continue work on the implementation of PFGs in the educational process, since this process is accessible. Physical folk games do not require complex equipment, expensive buildings, and special conditions. It is also important to study the impact of Kazakh PFGs not only on children with normal development but also on children with special educational needs.

Keywords: folklore, physical development, physical education, school-aged children, traditional games.

Resumen. Una de las principales razones del deterioro del nivel de salud de la nación es la baja manifestación de actividad física por parte de los niños en edad escolar. El artículo es relevante porque explora una de las formas efectivas de resolver este problema - la introducción de juegos folclóricos al aire libre en el sistema educativo de la República de Kazajstán. Esto afectará el desarrollo físico de los escolares y aumentará su participación durante las lecciones de educación física. El propósito de este estudio fue estudiar la efectividad de los juegos tradicionales kazajos al aire libre. Para esto se estudiaron los tipos de juegos populares kazajos al aire libre, se desarrolló su clasificación, se realizó una encuesta entre escolares para conocer su interés en los juegos folclóricos. Después de eso, se organizó un experimento pedagógico, durante el cual se hizo evidente la influencia positiva de juegos folclóricos al aire libre en el desarrollo de las habilidades físicas de los niños durante las lecciones de educación física. Se reveló que los indicadores de movilidad física de los escolares mejoraron significativamente: el número de estudiantes con un bajo nivel de movilidad física (MF) disminuyó del 50% al 13%, y el nivel promedio de MF de los escolares aumentó del 31% al 62%. Gracias al desarrollo de este estudio, es posible continuar trabajando en la implementación de juegos folclóricos al aire libre en el proceso educativo, ya que este proceso es accesible: los juegos folclóricos al aire libre no requieren equipos complejos, edificios costosos y condiciones especiales. También es importante estudiar la influencia de juegos folclóricos kazajos al aire libre no solo en los niños con normas de desarrollo, sino también en los niños con necesidades educativas especiales.

Palabras clave: folclore, desarrollo físico, educación física, los niños en edad escolar, juegos tradicionales.

Introduction

There is an evident issue of schoolchildren's disinterest in physical culture lessons within the framework of the educational process. At present, there is virtually no methodological literature that can help in solving this issue. The main barrier to the development of this subject is the belief of specialists that it is possible to interest children in physical education lessons only with the help of special conditions and equipment that the vast majority of schools in the country do not possess. To solve this issue, the number of physical education lessons can be increased. Research shows that children's physical activity decreases after they start school (Barquero-Ruiz et al., 2020; Figueira et al., 2018). As a result, vitality also decreases, they get tired faster. Movement is necessary for the child to grow up healthy. Physical activity constitutes one of the main proactive measures to prevent diseases associated with the cardiovascular, respiratory, and nervous systems (Guthold

et al., 2020). Physical activity also acts as a means of correction or treatment.

A game can be suggested as an approach to teaching movement skills. With the help of physical games, children learn more about the capabilities of their bodies and the structure of the world around them. Physical activity during games contributes to the cognitive and affective growth of pre-schoolers and helps school-aged children to strengthen the body and finally develop fine and gross motor skills (Harvey et al., 2018). Children learn social rules and ethics more easily through play. Playing activities support manual dexterity and gross motor skills. The more varied the physical activity, the better the body is developed (Gelisli & Yazici, 2015). This is conditioned by the fact that the game affects the development of motor skills, and that it helps, in turn, the interaction of organs and systems of the body, ensuring its all-round development. This is confirmed by the latest research of scientists in this subject area (Navarro-Paton et al., 2018).

Experts consider various methods of increasing the interest of schoolchildren in physical education lessons to raise the level of motor activity of the younger generation (Chu & Zhang, 2018; Casey & MacPhail, 2018; Coutinho et al., 2019a). Regular exercise is an important factor in preventing

chronic disease. In recent years, physical education support activities in schools have been increasingly used as a target for attracting young people to sports. The methods include the introduction of various play techniques and special equipment (Regal et al., 2020). In Kazakhstan, more and more attention is paid to traditional means of physical education – physical folk games (PFG). This can be explained by the fact that in specific geographic and climatic conditions the possibilities of motor activity are limited. Traditional games are games that have historically existed in a country and have evolved depending on the environment and processes (Coutinho et al., 2019b). These games corresponded to the specific cultures of the regions. They form a part of the folklore heritage for every nation. They can be an excellent tool for the physical education of schoolchildren. It is important to choose the most effective activity for the corresponding conditions. If sports such as figure skating or swimming require expensive buildings, which is difficult for many reasons, then physical folk games can be held in almost any conditions with a minimum amount of equipment. According to B.O. Ermenova (2017), N.B. Mamiev (2008), E.K. Tolegenov (2010), Kh.K. Untaev (2010) and other teachers, the use of physical Kazakh folk games requires compliance with the following conditions: unconditional compliance with the rules of the game by all participants, reminders of compliance with these rules with specific examples in the course of the game itself, teaching useful skills during the game, which will help students become more effective both during the game and in the context of developing physical skills. Some researchers believe that the form of teaching the rules of the game should be based on the general provisions of pedagogy.

There are different classifications of Kazakh PFGs. The tendencies of scientific classification first appeared in the works of M. Gunner (1938), who, considering the collected Kazakh PFGs, proposed to classify them according to the following criteria: general nature; the presence of elements of resistance and wrestling; in an open area; winter games; games for relaxation; equestrian games; amusement games. This classification is based on the difference in the rules of the games. M. Gunner (1938) thus divides the Kazakh national and sports games. There are over 20 different classifications of folk games. Having studied all the materials, the authors of the paper developed their classification. The main purpose of the paper is to investigate the influence of various Kazakh PFGs on the level of physical activity of schoolchildren.

Materials and methods

Among the methods chosen for this study, one can differentiate between theoretical (analysis, generalisation) and practical (survey, testing, data aggregation into statistics). To study the influence of Kazakh folk outdoor games on the active activity of schoolchildren, theoretical materials were studied, which describe various versions of folk outdoor games and their classification. Based on these data, the authors' original classification of Kazakh PFGs was derived. Games potentially effective, according to the authors, were selected and a methodology for their introduction into the educational process at physical education lessons was developed. The study is based on data from B.O. Ermenova's

(2019) dissertation on the influence of physical Kazakh folk games on the level of physical activity and physical fitness of students in grades 5-6.

The authors studied the recommendations for the norms of physical activity of schoolchildren at physical education lessons. Various standards of such activity were considered and the main ones were highlighted. The criteria for the classification of PFG based on their impact on motor qualities and their use in the structure of a physical culture lesson were developed. Pedagogical testing was carried out to determine the level of physical fitness of schoolchildren. 200 schoolchildren from 5-6 grades of a comprehensive school took part in the testing, of which: in 5 grade – 102, in 6 grade – 98 students. Physical folk games were included in the educational process of the EG for 5 months. The number of physical education lessons for EG students was also increased from 3 to 5 per week.

Tests for determining various criteria were following:

- 60 meters race from a crouch start (speed criterion);
- shuttle run 3x10 m (agility criterion);
- the forward inclination of the body from a sitting position (criterion of flexibility);
- 1000 meters race (endurance criterion);
- high bar pull-ups from a vertical hanging position for boys and low bar pull-ups for girls from a horizontal hanging position (strength criterion).

There were clear conditions under which the results of each test were either valid or not. Thus, upon determining the criterion of speed, a school playground with a natural unpaved surface was used. An electronic stopwatch was used to record the results. Coloured cone-shaped stands were used to indicate the distance upon testing agility with the shuttle run. The standard for determining the flexibility of students was passed with the use of an atypical device: a ruler 50 cm long was glued on top of a five-centimetre T-shaped bar. The apparatus was placed near the wall so that the ruler was adjacent to it. Upon performing the exercise, a student from an initial sitting position with legs resting on a wooden rail, should, without bending their knees, make the maximum inclination forward – along the ruler. To determine endurance during a shuttle run, the participants were divided into groups of 6 people and started in turn. Different tests were used to determine strength for girls and boys. For girls – pulling up the torso from a horizontal hanging position. The number of correctly performed repetitions of the exercise was taken into consideration. Boys pulled themselves up on a high bar from a vertical hanging position – the number of times was also counted. The exercise was performed on standard crossbars.

At the control stage of the experiment, the results of both groups were analysed: a comparison of physical indicators of physical activity was carried out. As a result, guidelines were developed for the implementation of PFG in the educational process of schools in the Republic of Kazakhstan.

Results

To determine the attractiveness of physical folk games among students of 5-6 grades, a survey was conducted. The

students were asked to arrange, according to the degree of interest for them, various types of physical activity. 56.3% of respondents chose Kazakh PFGs as the most interesting type of physical activity in physical education lessons. It should be noted that first and foremost schoolchildren singled out national games and sports (Figure 1). This suggests that the introduction of PFG into the educational process will be comfortable for the majority of schoolchildren.

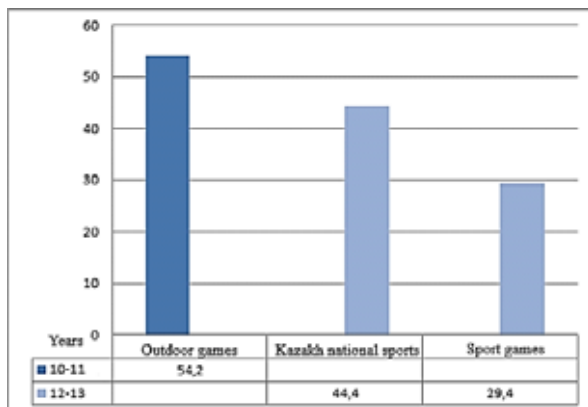


Figure 1. Indicators of children survey by the attractiveness of physical folk games.

There are certain norms of physical education and health-related motor activity of schoolchildren. Experts say that it should amount at least to 6 hours per week. It promotes the development of mental abilities, the sustainability of work performance throughout the day, and improved academic performance and fitness for exercise. The All-Russian Scientific Research Institute of Physical Culture provides the following recommendations: pre-schoolers should engage in physical activity from 21 to 28 hours a week; schoolchildren – from 14 to 21 hours a week; students – 10-14 hours. There is also a norm for extracurricular activities. Thus, when practicing walking, the norm of a student’s motor activity should be from 10 to 14 thousand steps per day or 7-10 km.

The hygienic norm is the amount of physical activity that covers the body’s need for movement and corresponds to the capabilities of all systems of the growing body (Aiello et al., 2020). This is a norm that helps to strengthen and develop the body. There are hygienic standards for daily locomotion for school-age children. A.G. Sukharev (1971) determined such a norm by examining children with a developmental norm, who are in a favourable environment and can observe a rational daily regimen and engage in physical activity. The distribution of loads, in this case, depends on the age and gender of the children. It can be noted that the division of the norm by gender begins only after 15 years. That is, for students in grades 5-6 who will

participate in the pedagogical experiment, the norm of physical activity for boys and girls is the same (Table 1).

Table 1

Hygienic norm of daily physical activity of children			
Age	Number of locomotions (thousand steps)	Distance (km)	Time (hours)
8-10 years (both sexes)	15-20	7.5-10	3.0-3.4
11-14 years (both sexes)	20-25	12-17	3.7-4.8
15-17 years (young males)	25-30	18-23	4.9-5.5
15-17 years (young females)	20-25	15-20	3.6-4.9

Source: according to A.G. Sukharev (1971).

Based on these studies, the authors selected Kazakh folk games that can contribute to the performance of the norm of physical activity in physical education lessons. For the convenience of choosing PFGs, a classification was developed according to the following criteria: didactic; the nature of effect; predominant type of movement; predominant manifestation of motor qualities; the amount of physical load. The first block includes games that can solve problems of a recreational and educational nature. The second block presents the criteria for the nature of the impact of games on students, which can be divided into two groups: local and complex. The third block distinguishes games according to the predominant type of movement, which includes jumping, throwing, actions with an object, resistance to force, running, complex actions. The fourth block provides for the grouping of games with the identification of the predominant manifestation of motor qualities, such as endurance, speed, agility, flexibility, strength. The fifth block allows to classify games, factoring in physical activity, which is distributed into three volumes, these are large, medium, small loads. This division allows to consider the degree of impact of games on the trainees, to foresee the intensity and volume of the expected physical activity in advance. After the development of the criteria for the classification of PFGs, a system was created for the optimal distribution of systematised PFGs in various parts of the physical education lesson, considering the set normative tasks (Table 2).

The table indicates which games can be useful for developing certain physical skills. Based on this, it is possible to distribute them evenly in the learning process to achieve the comprehensive development of the physical abilities of

Table 2

Classification of Kazakh physical games, for practical use

No.	Game name	Players' age	Manifestation of physical qualities					Psychophysiological load		
			Quickness	Agility	Plasticity	Endurance	Strength	High	Average	Low
1	2	3	4	5	6	7	8	9	10	11
1	"Qara bōrik" ("Black hole")	7-14	+	+	+					+
2	"A'ye taiaq" ("Stick")	8-14					+			
3	"Jūzik aly" ("Take a look")	8-14	+	+					+	
4	"Taiaq oiny" ("Game of Thrones")	10-14	+				+		+	
5	"Shaman kelse tartyp al" ("Shaman come and get it")	7-14	+				+			
6	"Tartys" ("Tartys")	12-14		+			+	+	+	
7	"Kindik sandyq" ("Navel box")	12-16	+				+			+
8	"Tyra'y, tyra'y tyrmala" ("Shut up, don't scratch")	7-12					+	+		
9	"Tenge aly" ("Take the coin")	7-16	+	+			+		+	
10	"Tōbetai tastamaq" ("Tobetay to taste")	8-12	+	+						+
11	"Jigit qy'y" ("Jigit winter")	8-14	+	+			+		+	
12	"Oramal tasta'y" ("Towels")	8-12		+			+			+
13	"Aralmen" ("Aralmen")	10-16		+				+		
14	"Tay menik" ("That is mine")	10-16					+			+
15	"Kūshiler men eptiler" ("Kushitler did it")	8-14	+					+		
16	"Belbey oiyny" ("Belbey game")	8-12	+	+				+		
17	"Laqtyr usta" ("Laqtyr mouth")	8-13		+						+
18	"Atshylar jarysy" ("Horse Racing")	12-16					+	+	+	
19	"Toqta" ("Stop")	10-14	+	+						+
20	"Atshylar" ("Horsemen")	10-14	+				+		+	
21	"Tekeler uryy" ("Goat fight")	9-16		+			+	+	+	
22	"Baltamdy tap" ("Find my ax")	8-12	+	+						+
23	"Tört aiaqtap tartysy" ("Four-legged fight")	10-15					+	+	+	
24	"Mūshe alyp qashy" ("Take the eyebrows")	8-12	+				+		+	
25	"Sekirip oina'y" ("Jump and play")	8-16		+			+		+	
26	"Ashqasqyr" ("Ashqasqyr")	8-14	+	+						+
27	"Kisi kōtery" ("Kisi cottage")	11-16		+			+	+	+	
28	"A'ydaraspaq" ("Aydaraspaq")	14-16					+	+	+	
29	"Belbey soqpaq" ("Belbey path")	7-12	+	+						+
30	"Dopty tūsimek" ("Dopty shooting")	7-14	+	+						+

schoolchildren. Correct choice and guidance are also critical to help children develop a sense of community, self-confidence, initiative, perseverance in achieving their goals, self-confidence, and good management of their emotions (Anguera et al., 2018). It is important to note that for this research such folk outdoor games were selected that are suitable for the age category of participants in the educational experiment – 11-12 years old. Upon forming a programme for a semester and a year, the teacher must consider this factor, otherwise, the effectiveness of the PFGs will be low. To test the effectiveness of Kazakh PFGs in the educational process, a long-term plan was developed. First of all, the authors studied the norms of the physical development of schoolchildren in 5-6 grades and analysed the norm of the educational programme for schoolchildren of the Republic of Kazakhstan (Table 3). The authors identified 5 standards, the change in indicators of which will help to assess the effect of PFGs.

Table 3
Types of motor activity of students

Grade	Quickness	Agility	Plasticity	Endurance	Strength	
					Boys	Girls
5	60 m	Shuttle run 3*10 m	Forward inclination from a sitting position	1,000 m	Pull-up on a high bar (number of times)	Pull-up on a low bar (number of times)
6	60 m	Shuttle run 3*10 m	Forward inclination from a sitting position	1,500 m	Pull-up on a high bar (number of times)	Pull-up on a low bar (number of times)

Further, the physical fitness of 200 students in 5-6 grades, among whom the number of boys and girls was equal, was determined following the standards. The children were divided into an experimental group (EG) and a control group (CG). The standards were passed at the beginning of the school year. The quality of the performance was assessed according to strict criteria. All results were tabulated (Table 4). It can be traced that at the beginning of the study, the indicators of the physical fitness of schoolchildren from different groups differ. Thus, the study participants from the control group had higher indicators in terms of speed and dexterity among children with satisfactory and good training. Indicators among pupils with excellent physical fitness at the initial stage of the experiment are practically the same both in the EG and in the CG. Upon considering the difference between the indicators of boys and girls, it becomes evident that according to some criteria, for example, plasticity, the indicators are higher in girls in both groups. However, there is no obvious preponderance, the physical fitness of children of both sexes is approximately the same.

Table 4
Physical fitness of students in accordance with the regulatory requirements of the educational programme

N°	Physical qualities	Assessments	5 grade				6 grade			
			EG		CG		EG		CG	
			Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)
1	Quickness	Excellent	0	0	0	10	15.4	8.3	16.6	15.4
		Good	14.4	39	42.7	26.2	38.5	33.3	50	23.0
		Satisfactory	85.6	61	57.3	54.8	46.1	58.3	41.7	61.5
3	Agility	Excellent	7.7	0	13.3	9.3	7.7	8.3	16.6	7.7
		Good	29	51	36.7	44.2	46.2	50	41.7	61.5
		Satisfactory	63.3	49	52	46.5	46.2	45.5	41.7	30.8
4	Plasticity	Excellent	21	70.3	28.6	54.5	23.0	50	17.8	62.5
		Good	64.6	29.7	64.3	45.6	69.2	50	74.0	37.5
		Satisfactory	14.4	0	7.1	0	7.7	0	8.2	0
5	Endurance	Excellent	13.3	11	7.1	27.3	7.7	25	16.7	7.7
		Good	40	28.8	50	45.5	61.5	50	50	30.8
		Satisfactory	46.7	59.2	42.9	27.3	30.8	25	33.3	61.5
6	Strength	Excellent	0	29	7.2	9.0	16.4	16.7	41.6	7.6
		Good	46.7	40.5	50	27.3	22.2	41.7	33.4	46.2
		Satisfactory	53.3	30.5	42.9	63.6	61.4	41.6	25.0	46.2

Note: EG – experimental group; CG – control group

After passing the standards for the experimental group, a new educational programme in physical education was developed. For 5 months, schoolchildren were engaged in physical education lessons, which included folk physical games. With that, the number of hours of physical education per week increased from 3 to 5. After that, a pedagogical experiment was carried out again with the performance of standards. At the same time, pupils from the experimental group demonstrated higher results against the participants in the control group and with the results they showed before the beginning of the study (Table 5). It is also worth noting that the number of students with excellent physical fitness has increased. The introduction of PFGs in physical education lessons influenced the decrease in the experimental group of children with poor physical fitness.

Physical education lessons for pupils of 5-6 grades with the use of Kazakh folk physical games had a positive impact on the physical training of schoolchildren. Their performance results improved. This leads to improved student health. The indicators of physical mobility of schoolchildren significantly improved: the number of students with a low level of physical mobility decreased from 50% to 13%, the average level of physical fitness of schoolchildren increased from 31% to 62%, the high level of physical fitness of schoolchildren increased from 19 to 26%.

Table 5
The final indicators of the physical qualities of students, %

N°	Physical qualities	Assessments	5 grade				6 grade			
			EG		CG		EG		CG	
			Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)
1	Quickness	Excellent	14.3	9.5	13.3	10.1	13.9	8.3	15.6	14.3
		Good	12.2	49.5	30.1	26.3	40	33.3	52	24.1
		Satisfactory	86.8	40	56.6	54.6	46.1	58.3	40.7	61.5
3	Agility	Excellent	6.9	19	14.2	9.0	7.7	8.3	15.7	6.8
		Good	20.1	41	34.8	45.5	47.1	50	42.6	60.4
		Satisfactory	73	40	51	45.5	45.2	45.5	41.7	31.8
4	Plasticity	Excellent	20.3	72	29.5	54.5	24.0	50	16.7	60.6
		Good	65.7	28	63.3	45.6	70.6	50	75.0	39.4
		Satisfactory	14	0	7.2	0	7.4	0	8.3	0
5	Endurance	Excellent	14.3	9	7.1	27.3	7.2	25	15.6	6.9
		Good	39	31.4	50	45.5	62	50	51	37.6
		Satisfactory	46.7	59.6	42.9	27.3	30.8	25	33.4	61.5
6	Strength	Excellent	0	29	8.1	9.0	16.4	16.6	41.7	7.2
		Good	47.6	38	49	27.3	22.2	41.7	32.3	45.6
		Satisfactory	54.4	33	42.9	63.6	61.4	41.7	26	47.2

Note: EG – experimental group; CG – control group.

Discussion

The special importance of physical folk games is that they are easily accessible to children from a very young age. Physical games can be very diverse (Alharthi et al., 2018).

They reflect national traditions, help develop adaptation and decision-making skills, improve physical activity, and improve communication and creativity. Studies by Indian scientists proved that children's motor skills are significantly increased with the continuous implementation of the traditional Indian game Bantena (Jin et al., 2018). The results are as follows: after a month of introducing the Indian folk physical game into the educational process, the average score indicating the level of physical development changed from 5.63 to 11.08. Teachers found it easier to motivate children to continue developing motor skills with traditional Bantena game and games such as Bebenangan and Edom Edom Tugel. According to scientists, these games can be a great solution for developing gross

motor skills as part of educational activities. The introduction of traditional Javanese games can make the development of motor skills easier and more fun, traditional Javanese games should be an alternative to teaching children to develop gross motor skills (Rahmadani et al., 2017). Similar research indicated that traditional game intervention programmes such as Gala Panjang, Buat Rumah Batu, Tok Harimau, and Tor Duduk are very effective in improving motor performance, i.e. agility, reaction time, speed, and balance (Lozano-Sánchez et al., 2019). Each traditional play intervention also showed differences in the effect of each component of motor fitness. Based on these results, it is recommended that coaches and physical education teachers use these traditional game intervention programmes to enhance their motor performance.

The tradition can also be revived by allowing children to play every night, as was originally practiced by the older generation. (Gipit et al., 2017). In the schools of Yakutia, various sports and health programmes contain a national component. In one of the school curricula studies, the «Avgara» (health) program was presented, including traditional contests and the national holiday of greeting the sun, «Bakaldyn». Based on the studies of the ethnopedagogy of physical education of the Yakut Evenks, within the framework of their historical development due to the socio-economic and extreme climatic conditions of life, hard physical work, they created an individual system of physical education for children based on folk games and traditions (Maximova & Nikolaeva, 2012). However, these studies did not address factors such as the impact of different types of traditional games on different physical skills. In the present study, the authors classify folk games and the influence of each type on the development of the motor activity of schoolchildren. The effect on criteria such as quickness, agility, strength, endurance, and plasticity were studied. Indicators for all these criteria have grown significantly due to the integrated implementation of PFGs in the educational process and the correct selection of games for solving pedagogical problems.

An experiment conducted by scientists from Dublin showed that there are gender differences in the development of the physical skills of children in physical education lessons (Hussey et al., 2001). According to the study, the energy expenditure for regular physical activity was higher in boys, which means that boys take part in more vigorous activities longer and/or more often than girls. Basic activities preferred by boys, such as rugby, throwing, and football, require, on average, higher energy expenditures than some of the more female-oriented activities of children of this age, such as ballet. It is alarming that 24% of girls and 14% of boys perform less than the minimum exercise recommendation (Crowell et al., 2019). This study, however, only focused on regular physical activity (Ramírez-Granizo et al., 2019). This study presents physical activity results for a large sample of Dublin schoolchildren in the 7-9 age group. It should be noted that the previous study did not investigate the effect of various types of physical activity on the development of boys and girls. Also, no proposals were put forward for the equal development of physical skills in boys and girls. The authors of the current study investigated the impact of Kazakh PFGs

on boys and girls and took the difference in the development of physical skills into consideration.

The time children devote to physical activity and physical games can also be an important factor in physical development (de Melo Cerqueira et al., 2020). Many children do not have enough time to develop motor skills because their days are filled with computer games, television, homework, and school. They just do not have time for physical activity. Adequate equipment, funds, and time are critical to developing basic motor skills. Parents and physical education teachers who are unable to provide opportunities to improve children's motor skills often limit their developmental opportunities. According to scientists, children can eventually lose sports skills (Akbari et al., 2009; Dos Santos et al., 2020; Pérez-Enseñat & Moya-Mata, 2020). Many types of equipment are not required to play traditional games, and finding the right equipment for them is always simple and cheap. Therefore, some of the problems mentioned above can be eliminated. This study considers not only the influence of physical folk games on schoolchildren but also a positive result from an increase in the number of physical education lessons. The results of the experimental group showed a positive dynamic of such an educational regime.

Of particular importance is the fact that games containing elements of folklore can help not only in physical but also in intellectual development. Such a hypothesis was put forward by (Leonteva & Levchenkova, 2019). In their work, they note that many games and play tasks involve the use of play tools, certain items of clothing, or sports equipment. The ability to use these tools correctly following the rules of the game is another feature of the organisation of the game activity of preschool children (Flynn et al., 2018). The involvement of children playing traditional folk games is significantly growing. For example, according to a study by scientists, the observance of the rules of the game among children improved from 63% at the beginning of observation to 98% by the end. In this study, only indicators of physical development were considered, however, further research can help to reveal the greater potential of Kazakh folk physical games in the comprehensive development of school-age children.

Conclusions

As a result of the study, a positive influence of Kazakh folk physical games on the physical development of students in 5-6 grades was identified. The level of physical activity of children increased after the introduction of PFGs into physical education lessons. PFGs are convenient because they require minimal inventory to be introduced into the educational process. They can be held in almost any conditions: in a closed room or an open area. It is important that all children know and follow the rules and are involved in the game. Folk physical games are also universal in that both boys and girls can play them. There are enough games where gender separation is not needed.

To effectively introduce Kazakh PFGs into the educational process, it is important to use the classification developed by the authors and distribute the games evenly throughout the academic semester. It is also necessary that teachers

have a clear understanding of the lesson objective and the ways a game can contribute to its completion. They must know exactly the rules and control the process of the game. During physical education lessons, along with the development of physical qualities, it is advisable to take the use of the patriotic, spiritual, and moral potential of Kazakh physical games into consideration. This research can contribute to the development of the physical potential of school-age children and further affect the health of the entire nation. Folk physical games are an effective way to comprehensively develop the qualities of school-age children while instilling in them a love of their native culture and country. In further research, it is necessary to investigate in detail the problem of determining the parameters of loads during the national Kazakh games, which give a pronounced effect in the development of physical qualities.

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