Popularization of physical activity in rural schools of Kazakhstan's Aktobe region

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Abstract

The transition to distance learning for students, remote work of adults, spending a long time at home, restrictions on communication with classmates, including sports, and a ban on traveling to the city, became the reasons for considering the possibilities of promoting physical activity in rural schools of Aktobe region. Against the background of these reasons, positive aspects should also be highlighted. This study aimed to consider the pedagogical possibilities of promoting physical activity in rural schools in the Aktobe region of Kazakhstan. Data were collected through observation from an experiment carried out with 30 schoolchildren and 3 physical education teachers. Data was also collected from previous studies. The research carried out in this area made it possible to determine the purpose of the publication – to consider the scientific and pedagogical possibilities of popularizing physical activity in small rural schools of the Aktobe region, RK.

Keywords: Integration; livelihoods; pandemic; physical activity; popularization.
1. Introduction

In our time, physical culture and sports are an integral part of the life of modern society. It has a great influence on its main areas of life, as it penetrates all levels of society (Rasulovna, 2021). Sport affects relationships at the national level and the position of a person in society. It also influences fashion trends, forms ethical values, and people’s lifestyles. In addition to the prevention of bad habits, physical culture satisfies the spectacular demands of mankind.

In the 21st century, there is not a single person who does not go in for physical culture and sports, does not participate in any competitions, relay races, or flash mobs (Oksana, & Svitlana, 2018). The proof of all these points is that the interest in major international competitions, such as the Olympic Games, the World, and European Championships, the World Universidad is growing steadily. Every second inhabitant of the planet watches these competitions because these are the most exciting and unpredictable spectacles. Watching the outstanding athletes of the world, people get a storm of emotions that are incomparable to anything. Such major events attract people to physical culture and sports. Engaging in physical culture and sports solves several problems that have become very acute for modern society in the 21st century. This is inactivity, bad habits, and deviant behavior.

Since March 2020, the attention of the entire world community has been drawn to the Coronavirus pandemic and its modification strains (“British”, “South African”, “Brazilian”, “Japanese”, and others). This served as a good reason to consider replacing the possibilities of habitual life skills with social-distance and informational skills. The relevance of the chosen research topic is also substantiated by ongoing long-term social lockdowns. According to statistics, the pandemic period has threatened physiological safety. At the same time, the experience of fear by an individual and a group had an ambiguous effect on psychological security. Particularly noteworthy in this perspective is the rural society, where the secondary school is a social, political, ideological, and cultural center. Aktobe region is the second-largest region in Kazakhstan, in which about 47% are rural schools with their student and pedagogical community. According to statistics from the Bureau of National Statistics Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2019), as of 2019 Kazakhstan, there are a total of 7398 (3337783 students) schools, of which 5285 are rural (1468711 students) (Bureau, 2019).

According to the National Academy of Altynsarin as of the 2018-2019 academic year in the Republic of Kazakhstan, there are 2886 rural schools (Nacional’naja Akademija im.Y.Altynsarina, 2018). This makes up 39.4% of all schools in the country (in 2017 there were 2958 or 39.6%), including 584 elementary schools, 811 basic schools, and 1491 secondary schools. In 2018, 198,603 students studied in rural schools, which is 6.3% of all students of the Republic of Kazakhstan (in 2017 - 205,950 or 7%). These include in elementary school - 7575, in basic school - 33256, in secondary school - 157772 students. In total, there are 30,250 class-complectes, of which 23,732 are uncombined classes, including 1,221 in primary school, 4,921 in basic school, and 17,590 in secondary school. There are 6518 combined class-complectes, of which 1091 are in elementary school, 2814 in basic school, and 2613 in secondary.

The transition to distance learning for students, remote work of adults, spending a lot of time at home, restrictions on communication with classmates, including sports, a ban on traveling to the city - became the reasons for considering opportunities to promote physical activity in rural schools in the Aktobe region in the light of recent events. Against the background of these reasons, it is necessary to highlight the positive aspects. The designated position of society in the country and the world has become a potential driving force for cooperation and innovation, which under normal conditions might not be so intense.

1.1. Purpose of study

The presented data made it possible to formulate the topic of pedagogical research: «Popularization of physical activity in rural schools of Aktobe region of the Republic of Kazakhstan». 
Purpose - to consider the pedagogical possibilities of promoting physical activity in rural schools in the Aktobe region.

2. Materials and Method

2.1. Participants

The quantitative results of the study include the coverage of this technique by students in the amount of 26 people, as well as rural schools during the period of teaching and teaching practice in the amount of 30 schoolchildren and 3 physical education teachers.

2.2. Data collection tools

Qualitative results include intermediate certification of students in a special course “Methods of teaching physical education in rural schools” and successful completion of teaching practice. The practical significance of our study is the systematic integrated work with students of the specialty 5B010800- "Physical culture and sports" of the Aktobe Regional University named after K. Zhubanov (Table 3). A mini-survey was also conducted with students of 1-2 courses of the specialty 5B010800- "Physical culture and sports" ARU named after K. Zhubanova.

2.3. Result criteria

- relevance and significance of the project topic in the framework of the educational policy of the Aktobe region;
- degree of participation in it of students, teaching staff;
- pedagogical value of the research;
- the optimality of the conditions for the implementation of the study (availability and compliance of material, educational, intellectual, information resources...);
- fulfillment of goals, objectives, hypotheses;
- completeness and complexity of the system of work on the development of physical activity among students of the specialty 5B010800 - "Physical culture and sports";
- the significance of the research results for the system of higher professional education, including for the teaching staff of the university;
- the significance of the results of the study for the population of the Aktobe region.

3. Results

Physical activity is a key aspect of a healthy lifestyle. Also, physical activity is a human activity aimed at the formation of physical conditions necessary and sufficient to achieve and maintain a high level of health, physical development, and physical fitness. The main thing in achieving physical activity is the systematic use of physical exercises, which are based on the achievement and increase of interest in physical activity. Research in the field of physical activity is based solely on the means and methods, and the organization of classes with the help of motor components. Physical activity as a concept differs from the concept of physical exercise. Physical exercise is a subcategory of physical activity. They are responsible for structured and repetitive activities aimed at increasing and maintaining physical fitness. In addition to physical exercise, physical activity also includes other types of active body movements performed during play, work, active movement, housework, as well as recreation, and entertainment.

According to the definition of the World Health Organization, physical activity is any movement of the body produced by skeletal muscles that requires the expenditure of energy. The term "physical activity"
refers to any kind of movement, including during recreation, travel to and from places, or while working. Both moderate and vigorous physical activity contributes to better health (WHO, 2016).

Popular physical activities include walking, cycling, inline skating, sports, outdoor activities, and games that are suitable for all skill levels and are fun for everyone. According to the intensity of energy expenditure, physical activity is classified into three levels: low, moderate, and intense. Such definitions are based on the calculation of the energy expended (in kilocalories) per 1 kg of body weight per minute. More often, the concept of metabolic equivalent (MET) is used to assess the intensity of Physical Activity. It is defined as the amount of energy that is expended at rest in a sitting position. For an adult human weighing 70 kg, this value is approximately 1.2 kcal/min and corresponds to a consumption of 3.5 ml/kg of oxygen per minute. Energy expenditure of less than 1 MET means no physical activity (such as lying down to watch TV or just lying-in bed).

Modern recommendations are based on the health benefits of physical activity being related to total energy expenditure per week. With moderate physical activity, energy expenditure is between 500 and 1,000 MET-minutes per week. So, at the cost of 500 MET-minutes per week, the risk of premature death is significantly reduced. And spending more than 500 MET-minutes a week significantly reduces the risk of developing breast cancer (HEPA, 2018; WHO, 2018).

There is a concept of the minimum level of physical activity that must be maintained in order to achieve the fitness of the cardiovascular system. The total training time to achieve the specified level of physical activity can be summed up during the day, but the duration of one session must be at least 10 minutes. This is due to the fact that there is a certain threshold dose, minimal in time and intensity, necessary to obtain an effect in terms of the fitness of the cardiovascular system.

The duration of physical activity to reach the recommended level depends on its intensity. So, to achieve a moderate level of physical activity, the duration of classes in total should be 30 minutes a day. This corresponds to burning 3.5 -7 kcal/min. On average, this results in an energy expenditure of approximately 150 kcal. To achieve an intense level of physical activity when more than 7 kcal/min is burned, the duration of the session for burning, respectively, 150 kcal, is 22 minutes.

If these calculations are translated into the language of visual physical activity, then we can say that for burning 150 kcal the following is necessary:

- 45 minutes cleaning windows or floors;
- 45 minutes playing volleyball;
- 30 minutes by bike (ride 8 km);
- 30 minutes dancing (fast dancing);
- 30 minutes walking (walk 3 km);
- 20 minutes swimming;
- 20 minutes playing basketball;
- 15 minutes running (1.5-2 km);
- 15 minutes to climb the stairs (Cheryasova, 2018).

The higher the intensity of the load, the less time is required to spend this amount of energy. (Figure 1).
It is well known that schools play an important role in promoting physical activity among youth. The vast majority of children and adolescents spend most of the day at school. This means that in order to achieve the recommended standard (60 minutes of physical activity daily), they must be fully provided with appropriate opportunities. It is during the school years that young people form the skills, knowledge, and habits on which their future lifestyle will depend. Physical activity not only has a beneficial effect on the child’s health and stimulates his physical, mental, and emotional development. It also improves social skills and academic performance (QPE, 2018).

There are several models for increasing the level of physical activity among schoolchildren. The most widespread practice is physical education lessons, which are included in the compulsory school curriculum in all EU Member States. At the same time, the number of hours of physical education per week, both compulsory and optional, and the quality of teaching this subject vary significantly in different countries. An important condition for the high quality and regularity of physical education and the promotion of safe physical activity among schoolchildren is the proper training of physical education teachers. They must master not only traditional sports but also the skills of general strengthening physical training of youth. A wider range of accessible physical activities needs to be offered as traditional competitive sports are not for everyone. First of all, they are often not suitable for those who especially need physical activity (QPE, 2018).

In addition, school physical education classes, which certainly contribute to increasing the level of physical activity among young people, are usually held no more than a few times a week. Therefore, in order to meet the recommended standards of physical activity for children and adolescents, it is necessary to provide additional opportunities for sports before and after lessons, as well as during the school day. These opportunities may include sports breaks during lessons and breaks and extracurricular programs. Another effective way to increase your level of physical activity is walking and cycling. Table 4 describes some of the main ways to support physical activity before, during, and after school (Potemkina, 2012).

Table 1

<table>
<thead>
<tr>
<th>PE lessons</th>
<th>Active travel to school</th>
<th>Sports breaks during school lessons</th>
<th>Sports breaks between lessons</th>
<th>Extra-curricular physical fitness programs</th>
</tr>
</thead>
</table>

Figure 1

*Time spent on types of physical activity*

![Figure 1. Time spent on types of physical activity](image.png)
In our research project, we consider as a sociological factor the forms and types of promotion of physical activity in rural schools in the Aktobe region. An analysis of the development of rural schools in the Republic of Kazakhstan confirms that each region has its own problems and tasks in this direction. So, for example, the main problems of the functioning of rural schools in the Aktobe region are the low availability of high-quality teaching staff, poor material, and technical base, geographical remoteness, bumpy roads, suitability of buildings, lack of sports halls, subject rooms, and unused Internet resource. There are also difficulties in the work of rural schools due to the lack of special textbooks and teaching aids designed for inclusive classes. The organization of lessons in the case when there are children with special educational needs in the school requires creative searches, the high professional skills of each teacher, especially from young professionals.

In order to develop rural schools in Kazakhstan, a system of institutions has been created - pivotal schools (resource centers), providing access to quality education, and the formation of the necessary key competencies in further life, as well as equal starting opportunities for graduates of schools for vocational training. The pivotal school (resource center) - an organization of secondary education, on which basis the educational resources of nearby ungraded schools are consolidated for short-term sessional classes, intermediate and final certification of students. They are held to provide access to quality education for students of rural schools (Almurzaeva, Shunkeyeva, Zhaytapova, 2017).

In Kazakhstan, there are currently 62 resource centers. The educational process in the resource center is organized in sessions for students in grades 8-11 of magnetic schools, taking into account the capabilities of the region. The organization of school lessons during the session period is carried out 1 week in the academic quarter (penultimate), during the inter-sessional period, interactive online lessons and remote consultations are held on the most complex topics of the curriculum, on the organization of project and research activities of students.

On the territory of the Aktobe region, 26287 (51% of the number of rural students; 23% of the total contingent) students’ study in rural schools, classes- complectes in these schools - 2322. The number of students in rural schools is 51497 (55.9% of the total number), city – 50914 (44.1% of the total number), and general contingent - 115424 students. 6,389 teachers work in rural schools in the region, of them have: higher education - 77.9%, secondary vocational - 19.7% (Bureau, 2021).

The role of rural schools is largely determined by the demographic, economic, and political conditions of the region. The resource center is a complex of such schools that form a single educational system that allows you to compensate for the missing resources in individual rural schools. The most important task

| Orderly classes taught by specially trained teachers, in order to develop the physical, social, mental, and emotional skills of students. |
| All ways to get to school on your own, not by transport. For example, walking, cycling, rollerblading, or skateboarding. |
| Short, organized sports activities that take place during school lessons for warm-up purposes. |
| Providing young people with sports opportunities and facilities to warm up during breaks between lessons. These may include, for example, walking paths around the perimeter of the school stadium, sports fields, and accessible sports equipment. |
| Providing young people with opportunities to play sports and related infrastructure (in schools, sports clubs, or community-based) to encourage physical activity after school lessons. This may include doing "homework" in PE. |
of this modernization is the development by teachers at rural schools in the country of new methodological approaches to providing high-quality modern education, teaching children in the classroom. In this regard, one of the main issues in the organization of the learning process in small rural schools and district resource centers is the issue of popularization the physical activity of schoolchildren, teachers, and parents. As we know, three groups of factors influence the physical development of a person: biological, climatic-geographical, and social. In this aspect, we must consider the social opportunities of the village and expand the list of physical activities of schoolchildren in a rural society. To do this, consider the types of activities that rural families and schoolchildren perform (Table 2) (Gurban, 2020a).

### Table 2

<table>
<thead>
<tr>
<th>Extracurricular</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning the area around your house</td>
<td>PE lessons</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>Physical education breaks in the lesson</td>
</tr>
<tr>
<td>Work in the front garden</td>
<td>Physical culture breaks at recess</td>
</tr>
<tr>
<td>Helping parents with the harvest</td>
<td>Extra-curricular physical fitness programs</td>
</tr>
<tr>
<td>Helping parents take care of their pets</td>
<td>Active travel to and from school</td>
</tr>
<tr>
<td>Game Zone</td>
<td>Sports Field</td>
</tr>
</tbody>
</table>

Thus, a physical education teacher in an ungraded rural school should conduct a competent health-saving policy for the student and his environment, study and be able to cover all types of physical activity in a particular region, based on the data received, plan school activities. Highlighting out-of-school activity against the background of school activity, it should be noted that it is rural schoolchildren who, in comparison with urban ones, are significantly physically strong and hardy.

The social significance of promoting physical activity in small rural schools in the Aktobe region shows great potential in her research. The List of Globally Recommended Activity Levels by WHO should be included in this category (WHO, 2016):

- social norms.
- Religious values.
- State of security at the national and/or local level.
- Availability of safe places for physical activities.
- Geographic conditions, seasons, and climate.
- Gender issues.
- Participation of all interested sectors and parties.
- The role of municipalities and local authorities.
- Access to and attendance at schools and workplaces, especially for girls and women.
- Existing transport infrastructure, sports, and recreational facilities, and urban planning.
- Participation programs in all areas of physical activity (leisure, transport, and work).
The practical significance of our study is the systematic integrated work with students of the specialty 5B010800- "Physical culture and sports" of the Aktobe Regional University named after K. Zhubanov (Table 3). At the heart of its implementation, the system of university education includes three approaches: axiological, system-activity, and developing.

- The axiological approach is defining, and aimed at the formation of social, cultural, and personal values for students, teachers, and parents.

- The system-activity approach is decisive for the main educational program in physical culture. It also allows you to understand what education and socialization are in structural and methodological terms. This is a meta-activity that pedagogically integrates into various activities of the educational process.

- The developing approach gives a fundamental understanding of the system-activity technology of the spiritual and moral development of the student.

Table 3
The system of actions carried out with students in the framework of pedagogical research

<table>
<thead>
<tr>
<th>Section</th>
<th>Content</th>
</tr>
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</table>
| Organizational diagnostic | - planning work on physical activity;  
- conducting a mini-survey in order to determine and understand the overall picture of the practical application of types of physical activity in ARU named after K. Zhubanova. |
| Formative          | - introduction of special topics and special courses in the educational process;  
- educational practice of students in a rural school and accounting for the types of physical activity in it;  
- activation of forms and types of physical activity at the university in the teaching staff and among students;  
- promotion of moderate physical activity as a mandatory daily exercise for all, its variants. |
| Generalizing, propagating | - the results of students' educational achievements;  
- promotion of physical activity as a promising educational product of the university;  
- dissemination of pedagogical experience in the forms and types of physical activity among students of the ARU. K. Zhubanov in scientific publications. |

A mini-survey was conducted with students of 1-2 courses of the specialty 5B010800- "Physical culture and sports" ARU named after K. Zhubanov. The results of this diagnostic showed that 71% of students are covered by intensive physical activity, which influenced the choice of a future profession, 23% - moderate PA, 6% - low PA. The data obtained indicate the relevance of introducing topics on the promotion of physical activity in the teaching of physical culture. Given the greater percentage of students from rural regions, the issue of consideration in the conditions of a rural and ungraded school becomes important.

The conditions of the pandemic made it possible to expand the boundaries of educational and pedagogical practices, covering rural schools. A new introduction in this direction was the issue of including the possibility of forms of physical activity in the conditions of rural schools and a resource center with adjacent magnetic rural schools. In student reports on practice, a special section was highlighted on the presentation of reporting data on the promotion of physical activity in secondary schools. Thus, students introduced types of physical activity into the educational process in the form of exercises, physical minutes, physical culture breaks, School and Family Health Promotion Days, and compiled information
bullets to promote types and forms of physical activity to develop functional literacy of the rural population.

**Figure 2**
*A fragment of a student’s teaching practice in a rural school*

![Figure 2](image1)

**Figure 3**
*A fragment of a student’s teaching practice in a rural school*

![Figure 3](image2)

At the university, this issue is included in the educational process as an independent subject of the discipline MPFVMSh 3306 “Methods of teaching physical education in rural schools” for the 2020-2021 academic year, in the next 2021-2022 academic year, it is planned as an independent special course, the implementation of which is also possible in other specialties (Gurban, 2020; EU physical activity guidelines, 2018).

At the moment, we suggest that the teaching staff also explore the possibilities of physical activity for the prevention of hypodynamia, a passive lifestyle, and general strengthening purposes (Table 4).
Thus, the practical significance of the ongoing research is multifaceted, goes beyond the educational process, and covers the physical capabilities of students and the teaching staff of the university. The main advantage is that physical activity as a didactic form of educational work is convenient in a rural school. It does not require special logistical equipment, which is what rural schools suffer from.

4. Discussion

The work to improve the physical culture and sports education of the younger generation in our country has been a strategic priority for many years. This is due to both historical factors of the country’s positioning as a world sports power, and modern trends in its socio-economic development and strengthening of the role of human potential (Avanesov, 2009; Gurban, 2020a).

The transition to innovative models of training specialists in the field of physical culture and sports – is one of the most important development tasks not only for the Aktobe Regional University named after K. Zhubanova, but also all higher education organizations that train specialists in this field. Of particular importance in it is a comprehensive form of work to promote physical activity in rural schools (Rasulovna, 2021). This form was chosen due to the ideological, social, and geographical features of the Aktobe region, as well as the reputation of the university that trains future specialists in Kyzylorda, Aktau, Atyrau, West Kazakhstan, Kustanai regions.

5. Conclusion

Compliance of the set goal and objectives with the expected result reflects the content of the presented study. So, we considered the pedagogical possibilities of promoting physical activity in rural schools in the Aktobe region, which was the goal of the pedagogical experiment.

In the process of working on the experiment, we developed the following conclusions:

1. The theoretical aspect of the study was the definition of the concept of "physical activity" as any movement of the body produced by skeletal muscles, which requires energy expenditure. The term "physical activity" refers to any kind of movement, including during recreation, travel to and from places, or while working. Both moderate and vigorous physical activities contribute to better health. According to the WHO, there is low, moderate, and intense activity.

2. The methodological justification is school physical activity, which consists of physical education lessons, active movement to school, sports breaks during school lessons, sports breaks between lessons, and extra-curricular programs to strengthen physical fitness. To carry out these types, methods, and techniques of training are necessary.
3. The social significance lies in the study and coverage of the social, material, and technical capabilities of the village in promoting the physical activity of rural schoolchildren in rural schools and resource centers.

4. The practical significance of pedagogical research is multifaceted, goes beyond the educational process, and covers the physical capabilities of students and the teaching staff of the university. As a result of the analysis, physical activity as a didactic form of educational work is convenient in a rural school. It does not require special logistical equipment, which is what rural schools suffer from.

6. Recommendations

Our main recommendation is that within the framework of the university environment it is possible to organize conditions for the development of the physical activity. To do this, the university administration, together with the dean for physical culture and teachers, must determine their forms of activity and introduce them into the educational process. When planning academic disciplines, including a number of topics that reveal the essence of physical activity. Also, be physically active yourself. Conduct a series of training seminars for teachers at rural schools.

We have revealed the main aspects of the methodological expediency of promoting physical activity in a rural school and the education system in general. This problem is currently being widely promoted by WHO in connection with the current covid situation in the world. Also, the increasing role of information technology in all spheres of human life, which reduces its physical activity.

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