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Physical culture as a means of physical activity and strengthening the health of young students

Iryna Sundukova[1*], Oleksii Stasenko[1], Yaroslava Lohvinova[2], Yuliia Kovalova[2], Olena Radionova[1]

[1] Department of Theory and Methods of Physical Education, Volodymyr Vynnychenko Central Ukrainian State University, Kropyvnytskyi, Ukraine.

[2] Department of Physical Education and Recreational and Health Work, Volodymyr Vynnychenko Central Ukrainian State University, Kropyvnytskyi, Ukraine.

* Correspondence: Iryna Sundukova; irynasundukova@ukr.net

ABSTRACT

Modern educational systems are aimed at the comprehensive development of young people, and physical education is an integral means of such development. The article aimed to consider the integration of physical culture in these systems, and its individual impact on youth health in terms of medical, educational, and sports industries, as one of the key factors in popularisation, to achieve the most objective overview. The key method in the study of this issue was descriptive, as one that allows full presenting the reviews of various studies on this topic from the perspective of modern scientific views. Methods of synthesis, analysis, abstraction, and analogies – allowed to approach the study of this topic comprehensively and consider one of the most important means of physical health through the prism of the use of theoretical methods of scientific knowledge. Thus, as a result of this work, this study was isolated, structured, formed, and combined into a single descriptive system. Physical culture is described as a means of strengthening the health of students in view of their inclusion in various interrelated areas of socio-economic life. The materials of this article can be useful as additional material for students, teachers, and researchers, to some extent physicians or speechwriters interested in areas: education, health, and physical education as a separate discipline or individual means to improve the quality of life, and also a wide range of interested readers.

KEYWORDS

Education; Sport; Medicine; Educational System; Organism

1. INTRODUCTION

The topic of the influence of physical culture as a means of forming the personality of a young person and maintaining the activity of the body throughout life in general – remains constantly relevant and explored throughout the history of human existence. Only the accents in the views and approaches to the use and development of this tool have changed in view of the changing historical circumstances at each new stage of its development.

Starting with the description of the subject of research and a summary of the process of its historical development and transformation, continuing – with the impact of this tool on health promotion within the local description, and the development of a new generation from a global perspective. The object of the review is the research materials on educational systems, medical recommendations, and the involvement of the business component in different countries and their application and results in the strengthening and development of the student. For example, the Canadian Health and Physical Education Curriculum for Grades 1-8 immediately noted its involvement in a global, societal goal: "21st Century Elementary Schools in Ontario Seek to Maintain High-Quality Learning by Giving Students All Opportunities to Learn which best meets their individual strengths and needs. The program recognises that students' needs are diverse and helps all students develop the knowledge, skills, and perspectives they need to become informed, productive, caring, responsible, healthy, and active citizens in their communities and the world" (Ontario Ministry of Education, 2019).

The wide-ranging involvement and strategy in the field of physical education at the level of the US federal government set out in the 2008 Physical Activity Guidelines for Americans (PAGs), is the first publication of national guidelines for physical activity (USA Department of Health and Human Services, 2021). The 2020 Physical Activity Goals for Healthy People reflect a strong state of science that supports the health benefits of regular physical activity among youth and adults as outlined in the PAG. Regular physical activity includes participation in moderate to high-intensity exercise and muscle-strengthening activities (USA Department of Health and Human Services, 2021).

The global pandemic period has forced us to adapt to new conditions, including approaches to the teaching and use of physical activity, as one of the elements supporting the physical and, most importantly, emotional health of young people. Unfortunately, in the United States, two epidemics preceded Covid-19: the obesity epidemic and the mental health crisis. These two epidemics have been exacerbated by a global health pandemic, especially for children. Obese children are more likely

to have poorer social and emotional health, and physical activity is a well-known behavior to combat obesity and promote mental health (MacDonald, 2021). In this regard, public health measures are strongly recommended to promote active lifestyles and physical activity among children (Ruopeng, 2020). Analysing the experience of leading countries, such as the United States, Canada, Western Europe, or the EU as a whole, is extremely important and timely, as these countries are most effective in overcoming the challenges that later face the rest of the world. According to one of the comprehensive, latest studies on this topic: (recorded) a small but significant impact of physical activity on the mental health of children and adolescents aged 6-18 years. When the analyses were performed separately for children and adolescents, the results were significant for adolescents but not for children (Rodriguez-Aullon et al., 2019).

This study aims to consider the integration of physical culture in these systems, and its individual impact on youth health in terms of medical, educational, and sports industries, as one of the key factors in popularisation, to achieve the most objective overview.

2. METHODS

In the process of current research, theoretical methods of scientific knowledge were used. Key among them were: descriptive, synthesis, analysis, abstraction, and analogies. In addition, materials researched using empirical methods were used, such as expert assessment and observations, used in some of the presented materials of this work. Using the descriptive method that was most common at the time of writing, the collected material was formed into a consistent descriptive structure, which highlights the object of study in terms of its transformation throughout human history. The evolution of views on the social application of physical activity with each succeeding generation is presented in fragments and as briefly as possible, without losing the connection. A sequence of some views from the ancient past to the present with all its challenges, at the expense of the development of physical training from the usual way of survival to entering the element of culture and religion. The subject of the review is presented, through a key topic - the study of physical culture as a means of influencing the health of young people, also considering the global perspective on the interconnectedness of this tool with other spheres of socio-economic life for a comprehensive review and objective conclusions.

Using synthesis as a theoretical method, many elements of research in different directions are combined to obtain a linear description of the research question, given the huge amount of available material for study, within the subject of physical culture and taking into account the need to streamline it. Auxiliary in this task was also the method of analogies. Because, the period and changing circumstances, including four scientific and technological revolutions that have radically

changed – both the appearance of the planet as a whole and the way of life of mankind, have led to a radical rethinking and changing approaches to the role of exercise, which in terms of human evolution happened very recently. Therefore, the method of analogies combines some fragments of views, descriptions, and diverse experiences of diverse communities studied in this paper with their approaches to the share of physical trials as an element of community development.

The method of analysis allowed for studying these materials from a diverse perspective. Giving objectivity to the study of physical culture as a means to develop not only physical but also mental, psychological, and emotional health, including the impact on intellectual health, which is a driving condition for the development of modern civil society in general, without further progress impossible as such in principle. At this stage, the work continued using the method of abstraction, which allowed to continue a holistic, structural, orderly, description of the object of consideration, without losing both the local line of study of the impact of physical education on children and the global perspective, which allowed to highlight this impact far beyond the educational institutions of a particular community, city or country.

The work was carried out in several stages:

1. The material was collected, analyzed, selected, and systematized.
2. The researched question is covered and presented in a clear and consistent scheme with the disclosure of the properties of physical culture, the impact on improving the health of young people, and their common place in the modern world.
3. The work is completed, the main details are highlighted, practical and theoretical conclusions are generalized and proposals for the possibility of further research on this topic are presented.

3. RESULTS

3.1 Physical culture as a phenomenon

To begin with the description of the object of study, it is necessary to outline the terminology that will be used to avoid or reduce errors in understanding the main postulates of the article and to clarify the concept itself. Thus, the WHO (World Health Organization) explains the concept of physical activity as follows – “WHO defines physical activity as any movement of the body produced by skeletal muscle that requires energy (World Health Organization, 2020). Physical activity means any movement, including leisure, to transport to and from a place or as part of a person's work. Both moderate and intense physical activity improves health. Regular physical activity

has been shown to help prevent and fight non-communicable diseases such as heart disease, stroke, diabetes, and some cancers. It also helps prevent hypertension, maintains a healthy weight, and can improve mental health, quality of life, and well-being" (World Health Organization, 2020).

However, the conceptual analysis argues that educators, researchers, and policymakers need a new and broader definition of physical activity, which proposed to encompass people who move, act, and act in cultural and specific spaces and contexts influenced by a unique set of interests, emotions, ideas, instructions, and relationships. To contextualise the status quo for definitions of physical activity, the origin, and growth of the most widely accepted definition published by Caspersen, Powell & Christenson (1985). They define physical activity as any movement of the body produced by skeletal muscles that result in energy expenditure (Caspersen et al., 1985). This definition creates a very specific way of understanding physical activity. Focusing on skeletal muscle and energy expenditure shapes physical activity as a specific mechanistic act. This definition is widely used and accepted in the research community. This definition is based on many concepts in health policy around the world. (Example) Australian Government Department of Health, 2011 World Health Organisation, 2018 Chief Medical Officers of the United Kingdom, 2019, as well as academic textbooks: Biddle & Mutrie (2007); Hardman & Stensel (2009); and journals: Howley (2001), Haseler, Crooke & Haseler (2019). There are (only) small variations of this definition. In 2018, the World Health Organisation's Global Strategy on Physical Activity applied a slight change to Caspersen's definition (World Health Organisation, 2020). Instead of activities that lead to energy expenditure, the WHO calls for the movement of the body, which needs energy expenditure (Piggin, 2020).

Outlining the very concept of motor activity, it is worth noting another very important factor in physical education – digital technology, which is playing an increasingly important role in shaping the personality, not to mention, the field of physical education. Digital technologies (Digi Tech) are widely available in our modern society. The widespread use of computers, tablets, smartphones, and media among today's youth shows that Digi Tech is socially and culturally relevant. It is commonly used in various educational institutions and physical education is no exception, and can be a potentially rich learning resource and be used to complement traditional forms of learning and ideally to create opportunities to improve pedagogical strategies in physical education. However, despite its potential, many teachers do not seem to use Digi Tech in physical education. Among other things, activity monitors include consumer activity trackers such as Fitbit devices and traditional pedometers. Many activity monitors are worn on the wrist or thigh and are used to track and monitor physical activity and other health-related outcomes such as energy expenditure and sleep (Froberg,

2021). A fuller disclosure of the topic is possible through an understanding of the purpose, purpose, and goals of physical culture in general because it is clear that you should constantly maintain physical shape in good condition, but the term “purpose of physical education” means a wide range of definitions. It should be narrowed down for a better understanding of this work. Thus, schools are those institutions that have recently taken on the role of teaching children how to acquire the skills and knowledge they need to become independent individuals. The learning process should also include activities aimed at revealing children's innate ability to openness, research thinking, and mental modeling ahead of time. However, scholars point to the fact that school curricula do not have a strategy to support such mental activity.

Diamond & Lee (2011) concluded that there are a number of different activities that can help generate ideas, including music and body movement. Rhythmic body movements to music or dance have an evolutionary basis. Dance affects human emotions and cognitive flexibility, including the generation of ideas. The importance of rhythm for human development, both social and linguistic, should not be underestimated. Co-moving and responding to rhythmic sounds can improve aspects of learning and stimulate cognitive flexibility (Osterberg, 2021). However, physical development involves improving the general condition of the whole organism, and physiological changes and improvements caused by exercise can be explained by structural and functional adaptations leading to better oxygen transport system (adaptations) such as increased blood volume, myocardial contractility, ventricular susceptibility and angiogenesis (Raghuveer et al., 2020). However, all these results are, or rather, the result of physical activity, integrally related to individual load adjustment. From this standpoint, it is believed that purposeful adjustment of training so that it coincides with the measurement of human response to stressors associated with training and non-training (eg, sleep or illness) can both maximise productivity and restrain the onset of maladaptive symptoms such as injury or overtraining. In practice, this individual response is often assessed by measuring performance in one or more tests that are considered to assess the physical quality (eg, strength, power, and aerobic capacity) being trained. The general concept that training should be adjusted according to an individual's performance measurements is called autoregulation (Greig et al., 2020). The objectivity of data on a particular level of load and, accordingly, its effectiveness is checked, including through statistical monitoring of athletes. Monitoring of athletes using strength and fitness, and other data on sports results is growing in practice and research. Although the use of this data to create more sound training programs and create potential models for predicting performance can be promising, some statistical considerations should be considered by those who hope to use this data.

(If) athlete monitoring focuses on individual athletes, this means that (these) methods (in some cases) may be inappropriate.

Group statistical methods draw conclusions based on the average distribution of data. If decisions are made on the basis of these data, mistakes will likely be made for those athletes who do not focus on the average (result). For example, understanding that the average sample value increased from one period to the next is important when considering an overall team or program, but it is less important for individual athletes at either end of the data distribution (Bailey, 2019). The educational process and its implementation and understanding are impossible without a serious program, assessment, workload, and training of students within the general educational formative goal. However, to have a comprehensive view and understanding of these processes, it is necessary to focus on the training of teachers themselves. Quality pedagogical education is an important mechanism for the formation of effective teacher development. However, general education research has consistently suggested that an in-depth understanding of PST (pre-service teacher) learning processes because of teaching, has long posed epistemological and methodological challenges to scholars and practitioners (Valerio et al., 2021).

Research notes that there is a lack of evidence to support the effectiveness of teacher professional development (TPD) processes, conditioned upon the lack of a single TPD method or strategy to ensure the quality of pedagogical training (Valerio et al., 2021). In the specific field of PE physical education, the need to ensure the effective contribution of physical education in the development of students in the XXI century in the most essential interpersonal, communication, and cognitive skills (critical thinking, decision-making, creativity, problem-solving, cognitive development, and resilience) – caused a worldwide update of physical education curricula. However, the related widespread introduction of student-centered SCM (student-centered models) models has shown specific problems in teacher training (Valerio et al., 2021). Thus, the mission of PETE (physical education teacher education) is to support the renewal of PST teacher training, including conceptual perspectives and professional practice that allows future teachers to transform learning experiences and effectively update physical education teaching practices in schools (Valerio et al., 2021). In general, mentions and descriptions of examples of physical activity that are now available to the public through historians and archaeologists begin long before the beginning of the new era. The history of physical education dates back to ancient Greece, where competition and intensity were second nature. At this time, physical education was important because it was a necessity in the training of both Greek soldiers and athletes. The ancient Greeks loved sports and taught their children to do it at school. The main activities were: wrestling, running, jumping, discus and spear throwing,

ball games, gymnastics, horseback riding, and military skills. Sports competitions were regularly held as part of religious holidays. In Athens (508-322 BC), boys began physical education during or immediately after primary education. At first, they studied with a private teacher, and later the boys began to train in high school. Six basic philosophical principles (closely intertwined) with physical education (which existed at that time): idealism – the mind, which develops through the acquisition of knowledge, is of the highest importance. Realism – the physical world is real. Pragmatism – experience is the key to life. Naturalism is a materialist philosophy. Existentialism is the main concern of individualism. Humanism and eclecticism. No country in history has treated physical education with as much respect as ancient Greece. As early as 3000 BC there was evidence that physical education classes were popular in their culture. This is evidenced by archaeological research (Fleming, 2020).

3.2 Physical culture as a means of forming and strengthening the health of students

Today, physical education is closely identified with health in school curricula, with a physical education teacher playing a central role in its deployment and implementation. The concept of health in these curricula ranges from a fitness-oriented concept with a closer link between physical activity and health to a broader and even critical view of the increased value of what health is. Whatever the approach, the concept of health is the subject of extensive discussion in the literature and has a number of considerations that go beyond this work. In this sense, the concept of health adopted in this paper implies a broader principle of health, which is not necessarily consistent with the biomedical or critical point of view. In addition, it will be considered that school physical education is a legitimate tool to promote health and is an auxiliary component to increase physical activity. Thus, if the goal of physical culture is to promote health in the broadest sense, the pedagogical approach will expand the installation and affective dimensions, as it aims to introduce a culture of a sedentary lifestyle and attraction to physical activity throughout life. The concept and structure of the curriculum require an approach compatible with this end. On the other hand, the curriculum is not safe from the influence of the teacher, and vice versa, because the academic culture of this professional is long. The consequence of this is that the concepts, attitudes, and values of a physical education teacher regarding the role of physical education are inseparable from his activities (Nasario et al., 2020). Given the above arguments for the definition, role, and understanding of health and the influence of teachers as one of the key, if not determining factors in its development, it is necessary to outline the situation of physical activity, directly in the student environment. Given the

documented decline in physical activity in early adolescence, promoting physical activity among young people is a priority for health. (Especially) given that low levels of physical activity are associated with an increased risk of chronic diseases in later life and an increased incidence of conditions such as overweight and obesity.

It must be due to physical culture that young people (mostly) experience a variety of physical activities and this experience can determine their future involvement in physical activity during leisure time. One of the main goals of physical education is to provide young people with the necessary motor skills, knowledge, and competencies to choose and participate in physical activity related to health in their free time. However, there are relatively few studies that show how physical education teachers or physical education programs can effectively guide young people to participate in regular physical activity in their free time outside of school (Polet et al., 2019). Given these factors and priorities for physical activity, leading global guidelines for physical activity (which) state that (even) young children should engage in activities that strengthen musculoskeletal tissues and improve motor skills. The recommendations of the World Health Organisation (WHO) suggests that children should be exposed to activities that improve movement control at least three times a week (Pullen et al., 2020). In the UK, meanwhile, the National Health Service recommends that children aged 5-18 strive to develop muscle strength and movement skills.

Failure to develop motor skills can lead to decreased physical activity, as there are positive links between motor skills and physical activity in children and adolescents. In the quest to combat the physical inactivity of young people, physical literacy has become a central principle. However, the use of physical literacy in many areas has led to some inconsistencies in its meaning. Physical education aims to create permanent participation (of young people) in physical activity and is a powerful tool for the development of physical activity in young people. However, physical education is a failure, (only) every 5th child achieves recommendations for daily physical activity, and a minority of adults continue to study, due to the experience gained in the curriculum. Despite the shortcomings of physical education, it should be considered the main means of creating effective change. The introduction of (experimental) resistance training in the school curriculum has demonstrated the value of improving the motor skills and athletic performance of middle school children. (Therefore) activities based on strength and conditioning can provide an alternative path to the traditional structure of physical education, which can be useful to students who prefer movement-oriented lessons (Pullen et al., 2020).

Referring to the spread of physical literacy in the West, physical literacy, first formulated by Margaret Whitehead in 1993, has gained wider recognition and interest from educational

organisations and researchers, especially in the UK, Australia, and Canada (Farren et al., 2021). Although the physical literacy movement in the United States lags behind other (some) countries. In their (US) systematic literature review of definitions, foundations, and associations of physical literacy, most of the definitions used (also) contain a topic that offers as the main goal – constant participation in physical activity as a consequence of physical literacy. For example, the Aspen Institute (2015) defines physical literacy as the ability, confidence, and desire to be physically active throughout life (Farren et al., 2021). Summing up, authors can say that in recent decades, there are alarming signs in physical education. This is vividly described by David Kirk (2011), who in his book Physical Education Futures argues that the same thing, that is, re-teaching sports over and over again, carries a risk for future physical education in schools. In Australia, the issue of outsourcing physical education is said to lead to teacher de-professionalism. In countries such as Sweden, the academicisation of physical education, together with a predominant focus on assessment, forces teachers to give more lectures in the classroom.

Physical culture is also overwhelmed with written assignments, which leads to students becoming more formative of movement knowledge than experts in the very practice of motor activity (Quennerstedt, 2019). In addition to these challenges, the world and the education system are very much facing a new global problem. Mankind has now witnessed increasing quarantine bans during the Covid-19 pandemic, especially in countries that have taken strict quarantine measures. In this sense, many jobs and tasks have been switched to online, including physical education (Varea and Gonzalez-Calvo, 2021). Physical education classes have traditionally used group activities, and now these teachers face a situation where they cannot take advantage of these activities. Despite the fact that there is a huge amount of literature that explores the identity of the field of physical culture, there seems to be agreement that sportswear and movement are key characteristics of physical education. Sportswear is important in developing the professional activities of physical education teachers (for example) in Spain. Now they face the fact that they do not need to wear sportswear. In this sense, the participants in the educational process considered the essence of physical education everything related to movement and physical activity and now they are challenged about the purpose of the subject when movement is impossible in the immediate presence and limited in space.

4. CONCLUSIONS

As a result of the work, physical culture as an object of research is briefly and succinctly outlined through the perspective of reviewing physical culture as a diverse tool for health promotion. Starting from the review of opportunities to improve the physiological state of man as a whole,

moving specifically to the review of a group of students. Various materials in the field of education of some North American countries, the European Union, and Australia, as well as in the field of medicine and history are considered in fragments. Related concepts such as physical shape and physical activity are also described as projections of its use to obtain the result – improving the functioning of the body as a whole. The importance of evaluation, verification, and objectivity of data for further development, including curricula, was noted. There are some reservations about the use of certain subjective points in the methods of assessing the usefulness of these data, in general, and individual situations, and the academisation of physical activity in the example of one of the EU countries. However, focusing on the impact of physical activity on the formation of the child's body describes the understanding of physical education in the educational process in the example of the United States. The use of the pedagogical approach, taking into account the impact of the Covid -19 pandemic on the educational process, for the formation of various aspects of physical literacy in children and teachers, is touched upon. Along with this, there are authoritative, diverse recommendations on the global usefulness of physical activity. In the educational process and the personal life of the student, it is pointed out the usefulness of such activity for different levels of his health, from physical to emotional, psychological, and intellectual. The issue of the development of the educational system in the context of the interaction of the teacher and the educational program is touched upon.

The materials of this article can be useful for students, teachers, and teachers of preschool educational institutions in the field of physical culture, and to some extent to physicians and persons associated with the Ministries of Youth and Sports, as introductory material. Also, speechwriters, scientists, and a wide range of stakeholders. In the process of work, issues were raised that require additional research. This applies in particular to the indirect impact of Covid -19 on the health of young people conditioned upon impaired learning, and on physical education as a subject and as a means to promote this health.

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