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**Physical Education and Sport for
Children and Youth with Special Needs
Researches – Best Practices – Situation**

**Gheorghe Balint
Branislav Antala
Catherine Carty
Jean-Marie Aleokol Mabiémé
Imen Ben Amar
Adriana Kaplánová**

Editors

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Physical Education and Sport for Children and Youth with Special Needs: Researches - Best Practices – Situation

Editors:

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Reviewers:

Low Hui MIN - lowhm@usm.my
Jong Hui YING - jonghuiying@usm.my
Lu JING-HORNG - frankjlu@gmail.com
Thariq Khan bin AZIZUDDIN KHAN - thariq@fsskj.upsi.edu.my
Dario NOVAK - dario.novak@kif.hr
Gheorghe BALINT - gyuri68@hotmail.com
Tatiana BALINT - balint.tatiana@gmail.com
Catherine CARTY - Catherine.Carty@staff.ittralee.ie
Sinda AYACHI - sinda.ayachi@gmail.com
Dana MASARYKOVÁ - dana.masarykova@truni.sk
Pavel ŠMELA - pavel.smela@uniba.sk
Ali ELLOUMI - Alielloumi62@gmail.com

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Introduction

You are holding a book “Physical Education and Sport for Children and Youth with Special Needs: Researches - Best Practices – Situation” prepared by FIEP.

The book is part of the 4th Physical Education World Wide Survey, which is carried out by UNESCO in cooperation with FIEP and their partners. The publication is part of one of its lines, focusing on mapping the basic characteristics of physical education and physical activities of children and youth in the world at individual levels of schools, from pre-school education to universities.

In 2017 the book "Physical Education in Primary School: Researches - Best Practices - Situation", edited by D. Collela, B. Antala and S. Epifani, was published by Pensa Multimedia in Italy and has 502 pages. 102 authors from 27 countries and 5 continents participated. In 2018, it was followed by a publication "Physical Education in Secondary School: Researches - Best Practices - Situation", published by the University of Montenegro in cooperation with the Montenegrin Sport Academy. The editors were S.Popovič, B.Antala, D.Bjelica and J.Gardašević. It had 343 pages and was prepared by 84 authors from 24 countries and 5 continents. The publication "Physical Education in Early Childhood Education and Care: Researches - Best Practices - Situation" was published in Slovakia by the Slovak Scientific Society for Physical Education and Sport in 2019. Its editors were B. Antala, G. Demirhan, A. Carraro, C. Oktar, H. Oz and A. Kaplánová. It had 464 pages. 120 authors from 32 countries from 5 continents participated. In 2020 a book “Physical Education in Universities: Researches - Best Practices -Situation” was prepared also for celebration of 60th anniversary of Faculty of Physical Education and Sports Comenius University in Bratislava in Slovakia where FIEP have already many years its European seat. Book celebrated also 80th anniversary of Faculty of Chemical and Food Technology from Slovak University of Technology in Bratislava. Its editors were M. Bobřík, B. Antala and R. Pélucha. 136 authors from 28 countries and five continents participated in the book.

A series of these 4th Physical Education World Wide Survey publications will continue in 2022 with the publication of “Physical Education and Physical Activities of Children, Youth and Adults and Healthy Active Living: Researches - Best Practices - Situation”.

This book is divided into fourth parts. In the first part of the publication called "Researches", we bring the latest research findings aimed at exploring the physical activity and sport of children and youth with special needs. The second part, the “Best Practices” brings examples of good practice from different countries of the world and the third part “Situation” is focused on presenting knowledge related to the characteristics of the state of the issue in various countries in the world. Last, fourth part of the book is focused on French language write articles. Due the agreement between FIEP and CONFEJES, the book was open for articles write in French language also. Eight articles, especially from African countries, are situated in this last part of the book.

178 authors from 32 countries and five continents participated in the book, of which 18 were European countries/regions (Bulgaria, Czech Republic, Croatia, France, Hungary, Italy, Ireland, Lithuania, Luxembourg, Netherlands, Romania, Russia, Scotland, Serbia, Slovakia, Spain, Ukraine, United Kingdom), 3 countries from America (Brazil, Mexico, USA), 4 countries from Asia (Indonesia, Lebanon, Malaysia, Singapore), 5 countries from Africa (Cameroun, Egypt, RSA, Senegal, Tunisia) and 2 countries from Oceania (Australia, Samoa). Therefore, the publication brings a broad international perspective on the issue of physical education and sport of children and youth with special needs.

Preparation of the book was a part of scientific project “Physical and Sports Education and its Quality and Potential in Promoting Health from the Perspective of Pupils, Teachers and Parents” supported by The Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic (VEGA) with number 1/0523/19.

A thank you goes also to the reviewers who, through their comments and advice, helped the authors improve the quality of their contributions.

Gheorghe Balint
Branislav Antala
Catherine Carty
Jean-Marie Aleokol Mabiémé
Imen Ben Amar
Adriana Kaplánová

Editors

Physical Education of Children and Adolescents with Special Needs in Ukraine

Sergii Ivashchenko

Kyiv Borys Grinchenko University, Ukraine

e-mail: algis6274@hotmail.com

Abstract

Over the past decades, unfortunately, there has been an unfavourable trend towards a gradual increase in the number of children and adolescents with special needs both in Ukraine and in other countries of the world. But the Ukrainian government cares about the health of all citizens; therefore, it is favourable conditions for optimizing the physical development of children with various somatic diseases and congenital malformations. For the purpose of the health status of young people with limitations in physical correctional development, special programs of physical training were scientifically substantiated and developed, which are advisable to apply in conditions of mandatory continuous medical supervision. Several models of physical education of children and adolescents are used in state institutions of Ukraine. The most popular and widespread model of such work is the conduct of physical culture and recreational activities with this contingent of people in the conditions of medical groups. The main objective of the study was to assess the effectiveness of physical education for people with special needs in medical groups. A comparative assessment of the effectiveness of this process was carried out in relation to a similar contingent of respondents, but subject to their independent physical education at home. To carry out the tasks of this study, from a large number of children and adolescents studying in state educational institutions of Kiev, those persons were selected who had special needs in connection with their state of health. The total number of participants in the study was 248 people (126 boys and 122 girls). All study participants were divided into two groups according to the characteristics of the comparability of age, anthropometric data and other indicators. The first (main) group included adolescents who were engaged in physical education in medical groups. The second (control) group included those adolescents who were engaged in physical education on their own at home. The observation lasted two years from 2018 to 2020. The indicators of physical development of all study participants are assessed twice: at the beginning and at the end of the observation period. The results showed that among adolescents who were engaged in physical training as part of special medical groups, the progression of physical development was more pronounced than among adolescents who were engaged in physical training on their own.

Key words: State educational institutions, Persons with special needs, Special medical groups, Process of physical education

Introduction

In recent decades, in Ukraine, as in many other countries of the world, there has been a tendency towards a gradual increase in the number of persons with disabilities in the state of health belonging to the category of persons with special needs (8). This trend is due to a number of specific factors: the deterioration of the environmental situation, high pace of life, insufficient level of physical activity, malnutrition and others. Of course, scientists working in medicine, physical education, food hygiene and other fields are looking for ways to improve the health of people with special needs.

The results of a thorough analysis of the information contained in domestic and foreign sources of scientific literature indicate that scientists from many countries pay great attention to the study of the physical qualities of young people, as well as the individual characteristics of each person (1). Of great interest are scientific works devoted to the study of the adaptation of persons with special needs to the conditions of life and activity in modern society (4). Valuable scientific material was obtained during the study of the genetic predisposition of people to the development of certain diseases in them (5). Also noteworthy are those studies that are devoted to the problem of determining the genetic predisposition of young people to the development of certain physical qualities in them (7). It is extremely important to study the process of adaptation of persons with special needs to the conditions of professional activity (2).

An important scientific direction is the study of changes in the mental qualities of persons whose disability is associated with the consequences of trauma or hereditary diseases (6). Special attention, no doubt, deserves the results of scientific research of those scientists who have devoted their work to the study of the problem of social, labor and household rehabilitation of persons with disorders of the musculoskeletal system (3). But, despite the success in the study of all these problems, in our time the issue of substantiation and development of the modern system of physical education for children and adolescents with special needs remains insufficiently studied.

This scientific article explores this very important issue based on research conducted among adolescents aged 12 to 14 years. In the course of fulfilling the tasks of this study, the possibilities of the modern system of public education were used. In particular, adolescents with disabilities in health and enrolled in special medical groups intended for physical education classes for this category of persons were involved in the study.

Methods

In carrying out this study, a group of scientific methods were applied. To obtain information about the condition of a disabled person, we use the method of medical examination and the study of medical records. To assess the level of physical development of the respondents, body length, body weight and chest circumference were determined. In addition, information about the well-being of adolescents was obtained using the methods of questionnaires, interviews and pedagogical observation. Finally, to determine the reliability of the information obtained during the study, modern methods of statistical processing of observation results were used.

Given that the main objective of the study was to evaluate the effectiveness of exercise in special medical groups, we conducted an in-depth medical study of all participants before and after a

two-year follow-up period. The comparison of the research results, as well as the assessment of the dynamics of the indicators of the physical development of the respondents were carried out in order to determine the level of the effectiveness of their physical training in the composition of special medical groups. The study was organized in the following order. The observation period was two years (from 2018 to 2020). Physical development indicators of all adolescents were assessed twice: at the beginning of the study and after its completion.

In total, 248 adolescents (146 boys and 102 girls) took part. All study participants were divided into two separate groups (main and control) according to the principles of comparison of age indicators, anthropometric and other data. The first group consisted of 122 adolescents (58 boys and 64 girls) involved in physical education in special medical groups. The second group consisted of 126 adolescents (59 boys and 67 girls), who independently practiced physical education at home. At the end of the study, we applied statistical methods to assess the reliability of the data obtained.

Results

For most countries of the world, the optimization of the system of physical education for children and adolescents with special needs is an important problem in the field of health care and physical education. The main goal of such activities is to help people with disabilities achieve an adequate level of physical development.

Carrying out the program of our research, we conducted a study of the level of physical development in 248 adolescents living in the Kiev region, with health disorders and studying in state educational institutions. We divided all study participants into two comparable groups (main and control). The main group included 126 adolescents (62 boys and 64 girls). The control group consisted of 122 adolescents (60 boys and 62 girls). Thus, a total of 122 boys and 126 girls, aged 12 to 14, took part in the study.

The distribution of respondents into groups was carried out according to the principle of coincidence of some indicators: age, gender, anthropometric data and others. The participants of the first group during the entire observation period were engaged in physical education as part of special medical groups in state educational institutions. During the classes, special physical training programs were used for them, developed on the basis of the study of their health and physical capabilities. The participants of the second group during the study period were engaged in physical culture at home on their own.

Indicators of physical development (height, weight, chest circumference) were determined in all study participants twice (at the beginning and at the end of the observation period). Comparison of the indicators of physical development of persons with special needs, obtained at the beginning and at the end of the study, made it possible to establish the patterns of changes in these indicators and to draw a conclusion about the advisability of using special medical groups for physical education of adolescents of this category.

An objective analysis of the results of our study convincingly showed that the indicators of physical development of persons with special needs who were engaged in physical culture as part of special medical groups turned out to be better than those of the control group, who were engaged in physical culture at home on their own. The data obtained are presented in table No. 1

Table 1 Changes in the indicators of physical development of adolescents with special needs

Number	Physical development indicator	Physical training method			
		In special medical groups		Unaided at home	
		2018 year	2020 year	2018 year	2020 year
1	Body length (cm)	151,2 ± 5,6	164,4 ± 6,2	151,3 ± 5,6	160,4 ± 6,0
2	Body weight (kg)	36,2 ± 2,1	42,8 ± 2,8	36,3 ± 2,1	41,2 ± 2,7
3	Chest circumference (cm)	68,6 ± 3,4	74,5 ± 3,6	68,7 ± 3,4	73,1 ± 3,5

We determined the physical development indicators of adolescents with special needs using standard certified measuring instruments. The length of the body in the standing position was determined using a stadiometer. Body weight was determined using a medical balance. The chest circumference was determined using a flexible measuring tape. At the same time, the average value between the chest circumference indicators obtained against the background of full inspiration, forced expiration and at rest was taken into account.

As can be seen from the data presented in this table, the positive dynamics of changes in the indicators of physical development of adolescents who were engaged in physical education as part of special medical groups was more pronounced than among persons with special needs who independently engaged in physical education at home. Thus, based on the results of the study, it can be concluded that classes in special medical groups of educational institutions are more effective in their influence on the process of physical development of adolescents compared to those cases when adolescents are engaged in physical training on their own at home.

In addition, in the course of the study, the methods of questioning, interviews and pedagogical observation were applied. Using the interview method, the essence of which was to conduct a conversation between the researcher and the respondent in order to obtain information in accordance with the objectives of the study, we found out exactly what complaints about the deterioration of well-being occurred in adolescents in the process of their physical training.

The method of face-to-face group questioning, as one of the psychological verbal-communicative methods, was used to determine the intensity of the manifestation of negative symptoms of deterioration in the well-being of adolescents arising against the background of physical exertion. The purpose of using the method of pedagogical observation was to study the frequency and conditions of occurrence of cases associated with deterioration of the health of adolescents in the

course of the real process of their physical training. The data obtained as a result of applying these methods are presented in Table 2.

Table 2 Dynamics of changes in well-being indicators of adolescents with special needs

Number	Nature of complaints	Physical training method			
		In special medical groups		Unaided at home	
		2018 year	2020 year	2018 year	2020 year
1	Headache	75,4 ± 3,1	74,2 ± 3,1	75,3 ± 3,1	60,4 ± 3,8
2	Sleep disturbance	66,4 ± 4,2	67,1 ± 4,3	66,3 ± 4,2	71,2 ± 4,5
3	General weakness	83,5 ± 5,9	84,3 ± 6,0	82,7 ± 5,9	87,1 ± 6,5

Based on the data obtained during the application of these methods, we performed the calculation of the integral indicator of the respondents' well-being disorders. For this, we used a special method of calculation, which took into account the nature, frequency of occurrence and level of intensity of a certain disturbance of well-being.

The result of the calculation was expressed in points, which provided us with the opportunity to track the dynamics of changes in the values of the integral indicator of well-being, as well as compare its levels in different categories of respondents.

Discussion

The study of the demographic situation in most countries of the world provides scientists with reliable information, on the basis of which it is possible with a high degree of reliability to predict trends in this situation in the foreseeable future. Unfortunately, due to the cumulative effect of unfavorable factors that cause deviations in health, the number of people with deviations in health is slowly but steadily increasing. A significant part of this contingent of the population is made up of people with disabilities, or, as they have been called in recent years, persons with special needs. Therefore, the search for ways to improve the health status of people with special needs is undoubtedly an important area of scientific activity.

In many cases, provided that diseases are detected at the early stages of their development, it is possible, through the use of modern means of prevention, treatment and rehabilitation, to

improve the health of patients and avoid their disability. Optimization of the regimen of physical activity, as well as the use of modern programs of special physical training play an important role in improving the well-being of all representatives of this contingent of patients. The solution to this problem is extremely important for any state also because the majority of people with special needs are not able to work effectively in the sphere of the national economy and practically throughout their entire lives need significant funds for treatment and rehabilitation.

Of course, the course of physical education for the disabled persons should be conducted on a scientific basis and through the efforts of the most experienced physical education teachers. Only in this case will the effect of a positive impact on the condition of people with special needs be obtained. A prerequisite for such classes is constant medical monitoring of the respondents' condition and immediate response to any changes. For this purpose, in each institution of public education, on the basis of the conclusion of the medical expert commission, special medical groups are created for physical education and scientifically based programs of special training are applied.

The data presented in Table 1 show that, despite the comparable initial data of height, body weight and chest circumference in adolescents of the main and control groups, those of them who were engaged in physical training as part of special medical groups for two years had more significant progress in these indicators. In addition, the data in Table 2 confirm the idea that adolescents involved in special medical groups are less likely to experience disturbances in their well-being against the background of physical training. So, the results obtained in the course of our study convincingly indicate that the experience of using special medical groups for the physical education of adolescents with special needs is positive and fully justified.

In this regard, the most important direction of further scientific research in order to finally solve this problem is the development, testing and approval of specialized physical education programs for people of different age groups and people with different forms of diseases. Of course, for the successful and final solution of this most important problem, complete coordination of the efforts of the best specialists working in the field of health care and physical education is required.

Conclusion

Summing up the results of this study, based on the data obtained, the following conclusions can be drawn:

1. Due to the complex influence of unfavorable external factors, there is a tendency towards a slow but steady increase in the number of young people with deviations in health and referred to the category of persons with special needs.
2. A thorough investigation of the motor activity algorithm, typical for persons with special needs, shows that systematic exercises in their physical education, based on the use of special scientifically grounded training programs, can improve the physiological state of such persons, increase their level of physical development and accelerate their adaptation to living conditions in modern society.

3. The most effective points of positive impact on the general condition of persons with special consumers are systematic physical culture lessons as part of special medical groups of educational institutions.

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