

ФІЗИЧНЕ ВИХОВАННЯ РІЗНИХ ГРУП НАСЕЛЕННЯ

SOCIAL INTEGRATION OF HEARING-IMPAIRED STUDENTS BY MEANS OF HEALTH-ENHANCING AND RECREATIONAL ACTIVITIES

Anna Orikhovska^{1ABCD}, Olena Andrieieva^{1ABCD}, Vitaliy Kashuba^{1ABCD}, Olena Lazarieva^{1ABCD}, Yurii Lytvynenko^{1ABCD}, Viktoriia Kyrychenko^{1ABCD}, Valerii Arefyiev^{2ABCD}, Inna Khrypko^{1ABCD}

¹National University of Ukraine on Physical Education and Sport

²National Pedagogical Dragomanov University

Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

Corresponding Author: Olena Andrieieva, e-mail: olena.andreeva@gmail.com

Accepted for Publication: June 20, 2020

Published: June 25, 2020

DOI: 10.17309/tmfv.2020.2.04

Abstract

Purpose: To substantiate and develop a program of health-enhancing and recreational physical activity for the social integration of students with hearing impairments in a higher education institution environment.

Materials and Methods. The study involved 65 students with hearing impairments 17–18 years of age (30 males and 35 females). Theoretical analysis and generalization of special scientific and methodological literature, pedagogical experiment, anthropometric measurements of the hearing-impaired, Apanasenko's method, methods of mathematical statistics were used.

Results. The structure and content of the program of health-enhancing and recreational physical activity for students with hearing impairments were scientifically substantiated and developed. The program takes into account the factors, principles, objectives, tasks, methods, organizational and socio-pedagogical conditions for its effective implementation in higher education institutions. The program includes a system for monitoring the results of its implementation and performance criteria. The effectiveness criteria for the health-enhancing and recreational physical activity program were identified as follows: social integration of hearing-impaired students, restoring their psycho-emotional state, and involvement of the young people in regular physical activity.

Conclusions. The results of the study confirmed the effectiveness of the developed program of health-enhancing and recreational physical activity in a higher education institution for the social integration of hearing-impaired students.

Keywords: health-enhancing and recreational physical activity, social integration, students, hearing impairments, program, higher education institution.

Introduction

The number of young people with disabilities is an important indicator of a nation's health for the country (Kohut, 2015). Democratization of social life, humanization of relationships between different social groups require improvement of conditions for socialization of youth with disabilities (Adyrhaiev, 2013). This requires a change in the focus of higher education institutions. The problem of providing educational services to this group of youth is addressed in the works of Ukrainian researchers (Talanchuk & Konoplytska, 2001). Over the last 15 years, the number of higher edu-

cation students in Ukraine has doubled to 12.33 thousand. Nevertheless, 53% of persons with disabilities remain outside the educational system (Talanchuk & Konoplytska, 2001). For most hearing impaired young people, entering higher education can be an effective step towards social, educational and cultural integration (Talanchuk & Konoplytska, 2001). A characteristic feature of this age period is the actualization of the need for affiliation (Lytovchenko, 2005). These include: determining one's place in the social relations system, self-affirmation, building self-esteem and enhancing conscious motives underlying behaviors, purposefulness, determination, perseverance, and initiative (Iliin, 2000). The changes occur in circadian rhythms of activity, in daily patterns of work, rest, and sleep; the level of physical activity decreases, while the level of mental load increases (Kashuba, Kolos, Rudnytskyi, Yaremenko, Shandrygos, Dudko, & Andrieieva,

© Anna Orikhovska, Olena Andrieieva, Vitaliy Kashuba, Olena Lazarieva, Yurii Lytvynenko, Viktoriia Kyrychenko, Valerii Arefyiev, Inna Khrypko, 2020.

2017). The result is a disturbed development of a full-fledged, well-rounded, self-realized person (Gorovoy, 2013). One of the ways to satisfy the social needs of the above mentioned group of youth is specially organized health-enhancing and recreational activity (Dutchak, 2015). Therefore, the studies on theoretical and methodological foundations and practical implementation of health-enhancing and recreational physical activity in higher education institutions are of particular relevance (Andrieieva & Kateryna, 2014).

The problem of organizational and methodological approaches to adaptive physical education of students with hearing impairment has been addressed in the scientific literature (Rychok, 2018). Previous studies have shown the effectiveness of using recreational activities to develop physical abilities of children with hearing impairment (Demchuk & Vypasnyak, 2016; Demirel, 2018). Correction of physical and psychological states and motor disorders of children and young people with hearing impairment by means of adaptive physical culture has been described in the studies (Solish Perry & Minnes, 2018; Palmer, 2018). Adaptive physical recreation as a means of enhancing social adaptation of children and young people with disabilities has been discussed in scientific works (Orehkovskaya & Spesyvykh, 2018; Kurková & Maertin, 2014). However, the issues of social integration of hearing impaired students by means of health-enhancing and recreational physical activity are still insufficiently studied (Joseph Winnick, 2011; Shields & Madelyn, 2017). The problem outlined needs further investigation.

The objective of the study was to substantiate and to develop a program of health-enhancing and recreational physical activities for social integration of students with hearing impairment in the settings of higher education institution.

Materials and methods

Sample and research methodology

Sample. The study involved 65 students with hearing impairment 17–18 years of age (30 males and 35 females). The protocols of experiments were approved by the ethics commission of the National University of Physical Education and Sport of Ukraine. According to ethical standards, all participants voluntarily provided written informed consent for participation in all stages of the pedagogical experiment, for further analysis and disclosure of their personal data during interpretation and publication of the results of the study.

Research methodology. The study was conducted at the Poltava Institute of Economics and Law of the Open international University of Human Development “Ukraine” (Ukraine).

Theoretical analysis and generalization of special scientific and methodological literature were carried out with the aim of studying in detail the problem of designing health-enhancing and recreational activities for students with hearing impairments. The basic forms of leisure organization and major types of leisure time use were classified. Theoretical analysis and generalization of modern practical experience allowed us to identify the relevance, clarify and specify the purpose, objectives and the focus of the study.

One of the main research methods was the pedagogical experiment. The study consisted of ascertaining (the first stage) and transformative (the second stage) experiments.

The ascertaining experiment involved assessing physical and psycho-emotional states, the level of physical activity, the value orientations, needs, priorities, and motivation for health-enhancing and recreational physical activity of students with hearing impairment. Anthropometric measurements of hearing impaired students were taken using standard equipment and uniform test procedures (International Standards for Anthropometric Assessment, 2017). The level of physical health was assessed by the Apanasenko's method (Apanasenko & Popova, 2011). The following parameters were measured: strength index, vitality capacity (mL/kg), Robinson index, body mass index, and heart rate recovery time after 20 squats for 30 s. The physical performance was evaluated using the Ruffier functional test. The quality of life was assessed using the self-administered questionnaire Medical Outcomes Study-Short Form (SF-36) (36-Item Short Form Survey (SF-36), 2018). The questionnaire items were used to construct eight scales focused on the evaluation of various health aspects. The scales were grouped to derive two component scores: the Physical Health Component Score and the Mental Health Component Score. Self-assessment of the students was studied using the technique described in (Pashukova, Dopira & Diakonov, 1996). The technique involved the evaluation of self-assessment of the students, their assessment of own abilities, qualities and place among other people. The score values ranged from 0 to 0.65 indicates low self-esteem, from 0.65 to 0.85 is adequate self-esteem, and above 0.85 corresponds to high self-esteem. The daily physical activity level was measured using the Framingham Physical Activity Index (Davidenko & Masaud, 1999). The index was calculated on the basis of average time spent at each activity level during the day. Sociological research methods were used to assess students' attitudes toward physical recreation activities, determine motivational priorities in the choice of types of physical activity, duration, frequency, and forms of sessions. The questionnaire consisted of 20 questions. Assessment of the maturity level of the value orientations was carried out according to the Rokeach's approach (Rokeach Milton, 1973). The respondent was presented with two lists of values (18 items each) placed in alphabetical order on two sheets of paper. The subject assigns a rank number to each of the values in the lists. The most important value was placed on top of the rank at first position and the least important was placed at the bottom at rank 18 in the list. First a set of terminal and then a set of instrumental values were presented.

An expert evaluation of the reasons that impede the effective organization of health-enhancing and recreational physical activities for students with hearing impairment in higher education institutions was performed by the method of preference (ranking). The number of experts was 12. The experts included higher education academic personal in physical education and leading experts in adaptive physical education. The transformative pedagogical experiment was conducted to evaluate the effectiveness of the developed program of health-enhancing and recreational physical activities for students with hearing impairment. The experiment lasted for one academic year. The structure and content of the program of health-enhancing and recreational physical activity for students with hearing impairment were developed and substantiated. The goal of the program is to increase the level of social integration of students with hearing impairment through the increase in their level of physical activity and

improvement in their physical and psycho-emotional states. In order to effectively implement the program, the basic principles of adaptive physical education, leisure, and health-enhancing and recreational activity were taken into account. Creating an atmosphere of trust and goodwill in relationships, availability of the necessary equipment, and physical exercise in the form of game helped to increase the effectiveness of the program. The program consisted of the following stages: diagnostic, organizational, methodological, and corrective. The diagnostic stage (36 academic hours) involved the assessment of the level of physical and psycho-emotional states and the level of physical activity along with the evaluation of the needs, motivation, and the value orientations of students with hearing impairment. The organizational stage (54 academic hours) was focused on generating the interest in the classes. This stage was based on the following principles: adjustable schedule, creativity, visual support, partnerships, and creating a sense of worth. This stage involved the development of an individual trajectory of social integration, adaptation, socialization, with taking into account the psychological characteristics, abilities, and interests of students with hearing impairment. Constant psychological and pedagogical support was provided during the classes.

The methodological stage (120 academic hours) included implementing the program of health-enhancing and recreational physical activities for students with hearing impairment into a higher education institution environment. The classes lasted for 80 minutes and were done three times a week. The sessions were designed as group and small group lessons. Time spent during lessons on physical activity (motor density) ranged from 50 to 60%. The intensity of general physical exercise was 40-65% of the maximum heart rate. The developed program involves the use of the following organizational forms of activities: sports holidays and competitions, festivals, spartakiades, recreational outdoor games, and entertainment with animation elements. The use of game methodology involved corrective active games, relay races, sports games with simplified rules, and play-based tasks. Specific features of the lessons included the use of posters, tables, instructions, task cards; sports equipment; light, sound, and sign language signals, pointers, boards, and reference marks. The classes were aimed at improving the psycho-emotional state, forming understanding of the effects of physical exercises, increasing the level of physical activity, developing a positive attitude to physical exercise, promoting rational organization of recreational health-enhancing and recreational activities of students in the free time, and creating conditions for socialization of an individual. The corrective stage (30 academic hours) included evaluation of the effectiveness of the program of health-enhancing and recreational physical activities for students with hearing impairment. At each stage of the program, adequate methods of pedagogical monitoring were applied.

Statistical analysis

Systematization and primary analysis of the data were performed with Microsoft Excel 2010 spreadsheets. Known methods of transforming data were used to analyze empirical questionnaire survey results (Paniotto & Maksimenko, 2003).

Results

A questionnaire survey was conducted to study the needs, interests, and motivation of hearing impaired students for various types, forms, and means of physical activity in the free time. The majority of students (43.08%) were partially satisfied with the organization of health-enhancing and recreational activities in higher education institution. A quarter of students (23.07%) did not like this activity at all. Only 33.85% of hearing impaired students were completely satisfied with the organization of health-enhancing and recreational activities in higher education institution. External and internal factors influencing participation of students with hearing impairments in health-enhancing and recreational activities were identified. The main purposes of the classes identified by the surveyed students were health-enhancing and communicative and educational. The health-enhancing purpose includes normalization of body weight; correction of figure and posture; increasing muscle mass; reducing stress and depression; and improving mental and physical performance. The communicative and educational purpose includes expanding the circle of communication, establishing new social contacts, and emotional self-organization. Priority types of physical activity of hearing impaired students were: dance, gymnastics, swimming, active games and sports games, table tennis, outdoor sports.

Physical and mental health as well as financial wellness and love were the most important terminal values of hearing impaired students (Fig. 1).

Physical activity of the students involved in the study was measured. The daily physical activity index averaged 29.52 points for males and 29.69 points for females. The sedentary-level activity was the prevalent type of activity. Students devoted more time to study, personal hygiene, home work, and passive rest. Students spent twice as much time traveling by transport than walking.

The results of the rapid assessment of the student's physical health indicators are presented in Table 1. There is a general tendency for the prevalence of male and female students with below average and low levels of health status. There are no persons with the safe level of physical health among the hearing impaired students. Ignoring the basics of a healthy lifestyle has serious consequences for students as this significantly affects their health status.

For the subjective assessment of the health status of students with hearing impairment, the questionnaire survey with Medical Outcomes Study-Short Form (SF-36) was used.

Table 1. The data of physical health assessment in students with hearing impairment (n = 65)

Parameter	Males, n = 30	Females, n = 35
	X ± s	X ± s
HR recovery time after 20 squats in 30 s, min	2.50 ± 0.92	2.11 ± 0.84
Body Mass Index, kg·m ⁻²	23.41 ± 0.93	22.34 ± 1.70
Vitality capacity, mL·kg ⁻¹	58.50 ± 6.34	44.14 ± 4.46
Strength index, %	67.13 ± 6.83	47.59 ± 4.66
Robinson index, arb. units	81.94 ± 7.54	91.44 ± 10.81

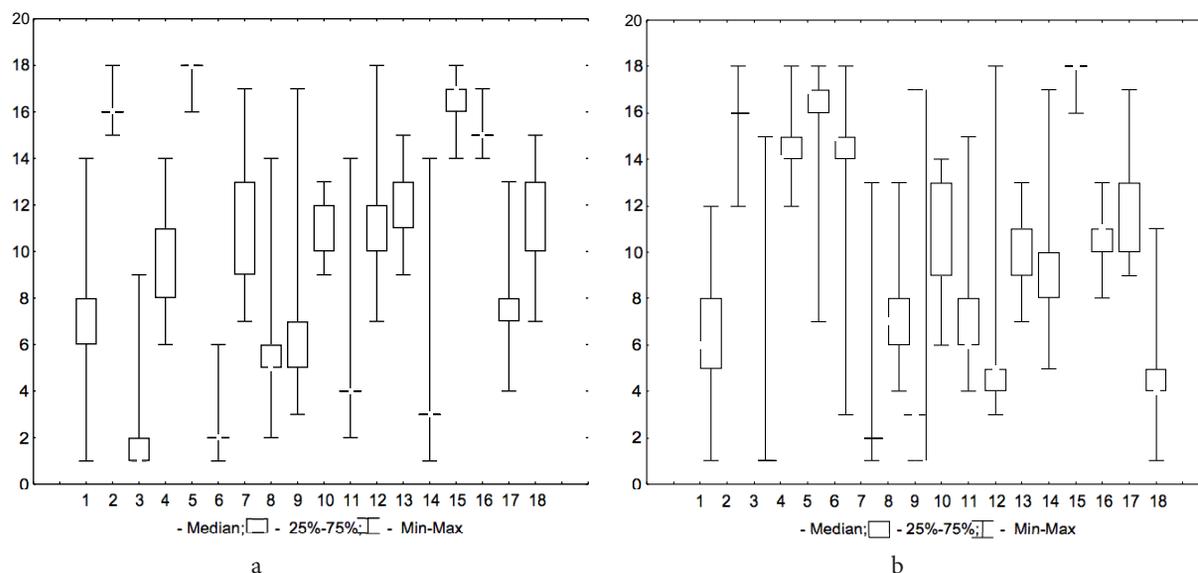


Fig. 1. The predominant focus of students' terminal values (a – males; b – females): 1 – an exciting life; 2 – wisdom; 3 – inner harmony; 4 – a sense of accomplishment; 5 – a world of beauty; 6 – mature love; 7 – a comfortable life; 8 – true friendship; 9 – social recognition; 10 – cognitive development; 11 – productive life; 12 – development; 13 – freedom; 14 – family security; 15 – happiness; 16 – creativeness; 17 – self-confidence; 18 – pleasure.

The answers of the male students to the question about the health status were as follows: very good – 6.67% (n = 2); good – 53.33% (n = 16); and fair – 40.00% (n = 12).

Among the female students, 54.29% (n = 19) of the respondents thought their health status is good; 40.00% (n = 14) reported fair health; and 5.71% (n = 2) replied they had poor health.

The well-being of the respondents over the last four weeks was also analysed depending on gender. The survey participants felt themselves good enough, but were often nervous, sometimes downhearted and worn out, and often tired. Males were less prone to negative self-evaluation of their psycho-emotional state. Over the last four weeks, physical health or emotional problems quite a bit interfered with normal social activities in 6.67% and 2.86%, moderately in 80.00% and 71.43%, and slightly in 13.33% and 25.71% of hearing impaired males and females, respectively. The results of the study indicate the low level of physical condition of the students. This requires the formation, maintenance, and enhancement of their health.

A significant proportion of hearing impaired students had a lowered self-esteem. Their idea of an ideal person does not match their self-concept. There is no statistically significant relationship ($p > 0.05$) between the student's self-esteem and his/her idea of an ideal person. There were 6.19% more females who had sufficient self-esteem than males. Nevertheless, 28.57% (n = 10) of female students had a lowered self-esteem (Table 2). Only 16.67% (n = 5) of male students were found to have a low level of anxiety. Male and female students with hearing impairment said sometimes feel lonely.

The results of the pedagogical experiment were used as a basis for development of a program of health-enhancing and recreational physical activity for hearing impaired students. The program implementation in a higher education institution environment allowed to achieve the following outcomes:

Table 2. Distribution of students with hearing impairment by their level of self-esteem (n = 65)

Level	Participants of the study			
	Males, n = 30		Females, n = 35	
	%	n	%	n
Sufficient	16.67	5	22.86	8
Insufficient	83.33	25	48.57	17
Critical	–	–	28.57	10

- the level of students' satisfaction with the organization of health-enhancing and recreational activities in the higher education institution was changed. The number of completely satisfied students increased by 12.85%;
- physical and psycho-emotional states of hearing impaired students significantly improved ($p < 0.05$). After the experiment, the proportion of male students with higher than the average and the average level of physical health increased by 10.0% and 15.0%, respectively. The proportion of female students with the higher than the average level of physical health increased by 8.0%;
- the positive changes occurred in indicators of emotional well-being, self-esteem, and general well-being;
- the physical activity index of males and of females increased by 12.1% and 9.1%, respectively.
- positive changes were observed in terminal and instrumental values of hearing impaired students. Students had a higher rating of instrumental values from the cluster of self-affirmation values. There

was a tendency towards a reorientation towards individualistic personal-significant values;

- the ambitions of students with hearing impairment for social activity, self-affirmation, desire to be self-determined and recognized by others were observed.

Discussion

Physical education lessons involving the means of health-enhancing and recreational physical activity are essential to involve young people with hearing impairments in regular exercise, to promote their socialization, and to meet their social needs (Boyko, 2014; Yarmak, Galan, Hakman, Dotsyu & Teslitskyi, 2017). Health-enhancing and recreational activities have the following general functions: developmental, health-enhancing, teaching, educational, and social (Andrieieva, 2014). Health-enhancing and recreational physical activities promote the formation of a community of people based on the common needs, interests, motives, exchange of social experience between people, and development of communicative capabilities of a person (Kateryna, 2016). Organization of PE lessons based on health-enhancing and recreational activities for higher education students has been the focus of research by many scientists (Zaitsev, Yermakov & Prusik, 2011; Sadovsky & Kyrychenko, 2016). Nevertheless, the use of existing approaches for healthy young people in the lessons for hearing impaired students is inappropriate for the following reasons: differences in motivation, differences in physical and emotional state, the contrast of the objective and tasks of the lessons, the variety of limiting reasons and factors, limited means used, etc. (Buckworth, & Nigg, 2010).

The success of social integration is linked to the need to take into account the significant psychological patterns of development of hearing impaired students (Jessica, Schultz, Lauren, Lieberman, Kathleen & Linda, 2013). They have a lot of intellectual, psychological, and physical abilities. Therefore, the potential of this group of students for social integration must be determined on the basis of the age, physical and psychological development, and health status (Yarmak, Galan, Nakonechnyi, Hakman, Filak & Blahii, 2017). In this context, particular attention should be given to the problem of determining the psychological preparedness of hearing impaired students for social life. Addressing the problem will contribute to timely vocational orientation, as well as help to avoid learning difficulties and ensure the student's successful social integration (Khrypko & Kyrychenko, 2017).

According to the researchers, physical recreation activities contribute to the formation of the following personality traits: sociability, strong goal orientation, and concentration (Andrieieva, 2014). Physical recreation helps to optimize the physical, mental, and social state of a person. This approach makes it possible to find the best means of enhancing the abilities of hearing impaired students and their effective use in health-enhancing and recreational activities.

Difficulties of social integration of hearing impaired students are due to the mismatch of the functional capabilities of the body to modern requirements. Decreased hearing function significantly impairs the quality of life of young people, by limiting their viability and fitness. The leading motives for the health-enhancing and recreational physical activity of hearing impaired female students are the following: com-

munication and increasing the chances to meet new friends (88.57%); improvement of appearance, figure, and posture (82.85%); health maintenance and promotion (74.28%); and increasing the functional state of the body (60%). Among the male students, the following are the priorities: improving physical performance, achieving a high level of physical fitness (86.66%); improving appearance (80%); enhancing communication (70%); and health maintenance and promotion (66.66%). These data indicate the similarity in motives of hearing impaired students of both genders. The data we obtained are consistent with the results of the studies on higher education students without sensory disabilities (Kateryna, 2016). We have confirmed the results of the study of students' motivation to engage in health-enhancing and recreational physical activity (Sadovsky & Kyrychenko, 2016). The factors of 'negative motivation' were identified: lack of free time, lack of material and financial conditions for recreational activity, inconvenient location, and unfavorable health conditions.

The study confirms a significant decrease in the level of physical activity of people with hearing impairment compared to visually healthy peers (Al-Rahamneh, Dababseh & Eston 2013). Low physical activity of students with hearing impairment has led to a decrease in their emotional well-being. The students were found to have a low level of self-esteem and increased levels of anxiety and personal disharmony. All this does not contribute to their self-actualization, socialization, and integration into society. The distribution of female students by health status was as follows: 68.6% of them had the low, 20% – the lower than average, and 11.4% – the average levels of health. The male students had the better health status: 36.7% of them had the low, 30% – the lower than average, and 33.3% – the average levels of health. According to Apanasenko's studies, only average and high levels of physical health are considered as safe. No students were found who had the safe level of health. A similar situation is typical for young people without hearing impairment (Iliin, 2000; Andrieieva & Kateryna, 2014). However, today, in the light of altering the approaches in the special education system, a more correct, tolerant approach seems to be to compare the data of young people with congenital or acquired impairments in accordance with the standards of the World Health Organization, rather than comparing them to the characteristics of healthy peers.

We confirmed the published data on prioritized types of physical activity (Mueller & Ackley-Holbrook, 2016; Kurkova, 2015). Hearing impaired female students were primarily interested in the following types of physical activity: female students preferred dance classes (80.00%); table tennis (68.57%); swimming (60.00%); and health-enhancing fitness classes (54.28%). Male students with hearing impairments preferred football (83.33%), volleyball (70.00%); table tennis (66.66%); swimming (43.33%); outdoor activities (60.00%); and strength training (53.33%). Researchers point out the potential of using active games to improve physical fitness and enhance the health of hearing impaired students. Preferred types of physical activity are identical for hearing impaired students and healthy youth. Most students have a positive attitude towards health-enhancing and recreational physical activities (Kurkova & Nemecek, 2018). However, most students' leisure is passive, and sometimes destructive. Our study confirmed the data of previous studies that the stu-

dents' leisure time activities is insufficiently organized and they lack developed skills necessary for productive spending of leisure time in a healthy way (Kurkova, & Nemecek, 2016). We further corroborate the results of the studies on organization of students' leisure time that have shown the low level of their recreational activity (Gorovoy, 2013). Students with hearing impairments do not realize the importance of systematic physical activity. The daily physical activity index averaged 29.52 points for males and 29.69 points for females. The sedentary-level activity was the prevalent type of activity. Our study supports the findings of earlier research revealing the low level of physical activity of higher education students (Andrieieva, 2014). Furthermore, the study provides further understanding of the factors that influence the participation of hearing impaired students in recreational activities (Imas, Dutchak, Andrieieva, Kashuba, Kensytska & Sadovskiy, 2018). Students with hearing impairments are influenced by their friends, acquaintances, classmates, and the media. They do not trust the advice of teachers, coaches and parents on this issue.

The results of the research on the value orientations of modern student youth are further enhanced by our study (Sadovsky & Kyrychenko, 2016; Imas, Dutchak, Andrieieva, Kashuba, Kensytska & Sadovskiy, 2018). The primary terminal values of male students include ambition, freedom, and intellect. Those of female students include ambition, courage, and intellect. In the hierarchy of instrumental values, the male students give the highest priority to responsibility, education, honesty, cleanliness, politeness, self-control, independence, strong will, and cheerfulness. Female students prioritize education, cheerfulness, responsibility, politeness, honesty, independence, broad-mindedness, cleanliness, and logic. Value orientations of hearing impaired students significantly differed from the priorities of healthy students (Nemcek, 2017). The most important terminal values of hearing impaired students are physical and mental health as well as financial wellness and love. Female students with hearing impairment give a higher priority to the subjective-personal values (politeness, education, honesty, accuracy, etc.), while, for male students, utilitarian and pragmatic values such as health, true friendship, close emotional relationships with family, and family security are more important. The study of the rating of instrumental values confirms the absence of value priorities related to an active life position in the majority of hearing impaired students. Health-enhancing and recreational activities can contribute to the formation of an active life position, abilities and skills to meet basic needs, meaningful filling of the free time with a focus on healthy lifestyles, realization of life potential, and improvement of quality of life. We have studied self-esteem of students with hearing impairment. A significant proportion of hearing impaired students was found to have a lowered self-esteem. Their idea of an ideal person does not match their self-concept. Similar data were obtained by other authors for school students and higher education students with hearing, vision, and musculoskeletal impairments and other nosology's (Demirel, 2018; Nemcek, 2017). This calls for these provisions to be taken into account when designing a training program. The study provides further support for the earlier research on social integration of persons with disabilities into society by means of specially organized physical activity (Kohut, 2015; Adyrhaiev, 2013).

The amount of scientifically sound data on the features of designing physical recreation programs for hearing impaired students is insufficient. There are no substantiated recommendations on the alternative content of health-enhancing and recreational activities. The technology of implementing recreational activities into the physical education process that will take into account the socio-pedagogical characteristics of the lessons is not developed. Recommendations to increase the amount and quality of physical activity for social integration of hearing impaired students generally lack substantiation.

To develop the program of PE lessons using the means of health-enhancing and recreational physical activity, we followed a number of general scientific principles and approaches. When designing the program, the main ontogenetic patterns of the body development were considered along with the data on the nature of the body adaptation to physical load and the peculiarities of taking this information into account during practical implementation of various corrective and restorative programs (Andrieieva, 2014).

We have expanded the data available regarding the use of physical activity to improve higher education students' physical and psycho-emotional status (Khrypko & Kyrychenko, 2017). Our data confirmed the authors' conclusions about the appropriateness of this organizational structure for designing program of physical activities for higher education students. The reasonableness and necessity of using innovative means of physical activity and forms of organization of extracurricular activities in designing of such programs were proved. This significantly influences the motivation of young people to participate in such programs. The study expanded and enhanced existing knowledge concerning the relevance of the use of interactive methods of increasing the level of theoretical knowledge (Kashuba, Futornyj, & Golovanova, 2011). A low level of theoretical knowledge of health maintenance has a significant impact on participation in health-enhancing programs. Increasing the students' knowledge in this area contributed to the increase in the number of hearing impaired students involved in health-enhancing and recreational physical activity and to the formation of sustainable motivation for participation in such activities.

Conclusions

The results of the study confirmed the effectiveness of the developed program of health-enhancing and recreational physical activities for social integration of students with hearing impairment in the settings of higher education institution. This provides a reason to recommend the program for use in the process of physical education of hearing impaired students in the curricular and extracurricular activities of higher education institutions.

Acknowledgements

The research was carried out in accordance with the plan of scientific research of NUFVSU for 2016–2020 within the thematic research of the department of health, fitness and recreation “Theoretical and methodological principles of health-enhancing and recreational physical activity of different population groups” (the number of state registration 0116U001630).

Conflict of Interest.

All the authors declare to have no conflict of interest.

References

- Kohut, I.O. (2015). *Social humanistic foundations of the development of adaptive physical culture in Ukraine* (monograph). Lviv: SPOLOM. 284 p.
- Adyrhaiev, S.G. (2013). *Organizational and pedagogical foundations of physical education and sports for students with special needs in higher education institutions: (monograph)*. Kyiv: 'Ukraine' University. 381 p.
- Talanchuk, P.M., & Konoplytska, D.L. (2001). A comprehensive approach to disabled persons' issues: statistics, reality, future. *Sotsialnyi zachyst*, 11,18-20.
- Andrieieva, O.V., & Orikhovska, A.S. (2016). Socio-psychological bases of health-related and recreational motor activity of students with hearing disorders. *Theory and Methods of Physical Education and Sports*, 4, 25-31. <https://doi.org/10.32652/tmfvs.4.25-31>
- Lytovchenko, S.V. (2005). Social adaptation of students with hearing impairment in a higher education environment. *Visnyk Luhanskogo pedahohichnogo universytetu im. Tarasa Shevchenko*, 13(93), 112-116.
- Iliin, E.P. (2000). *Motivation and motives*. St. Petersburg: Piter. 512 p.
- Kashuba, V., Kolos, M., Rudnytskyi, O., Yaremenko, V., Shandrygos, V., Dudko, M., & Andrieieva, O. (2017). Modern approaches to improving body constitution of female students within physical education classes. *Journal of Physical Education and Sport*, 17(4), 2472-6. <https://doi.org/10.7752/jpes.2017.04277>
- Gorovoy, V.A. (2013). *Organizational and methodological foundations of physical recreation of students* (avtoreferat). Minsk: F. Skorina Gomel State University.
- Dutchak, M.V. (2015). Paradigm of health-related motor activity: theoretical substantiation and practical application. *Theory and Methods of Physical Education and Sport*, 2, 44-52. <https://doi.org/10.32652/tmfvs.2015.2.44-52> (in Ukrainian)
- Andrieieva, E.V., & Kateryna, U.M. (2014). Conditions for intensifying physical education extracurricular activities in a higher education institution. *Știința culturii fizice*, 18(2), 64-70.
- Rychok, T.M. (2018). *Correction of indicators of physical state of schoolchildren with hearing impairment by means of outdoor sports all-round* (Candidate Dissertation). Kyiv: Nat. University of Physical education and sports of Ukraine.
- Demirel, N. (2018). The impact of therapeutic recreational gymnastic exercise on basic motor skills of hearing-impaired children aged between 6 and 9 years. *Journal of Education and Training Studies*, 6(3), 147-51. <https://doi.org/10.11114/jets.v6i3.3048>
- Demchuk, S.P., & Vypasnyak, I.P. (2016). Games activity as the main factor of socialization of the younger student with hearing deprivation. *Scientific journal of the National Pedagogical Drahomanov University. Series.15: Scientific and Pedagogical Problems of Physical Culture (Physical Culture and Sports)*, 3(72)16, 38-43.
- Solish, A., Perry, A., & Minnes, P. (2018). Participation of Children with and without Disabilities in Social, Recreational and Leisure Activities. *Journal of Applied Research in Intellectual Disabilities*, 23, 226-236.
- Palmer, C. (2018). Creating Successful Experiences for Deaf Children in Physical Education and Athletics: A Review of the Literature. *Kinesiology, Sport Studies, and Physical Education Synthesis Projects*, 48, 1-45. Available from: https://digitalcommons.brockport.edu/pes_synthesis/48
- Orekhovskaya, A.S., & Spesyvykh, O.O. (2018). Peculiarities of the student's youth program of physical recreation with hearing disorders in conditions in the establishment of higher education. *Scientific journal. Young scientist: Special Issue*, 4.3(56.3), 77-82.
- Kurková, P., & Maertín, J. (2014). The benefits of square dancing as a means of physical activity for Czech dancers with hearing loss. *Acta Gymnics*, 44(4), 223-230. <https://doi.org/10.5507/ag.2014.023>
- Joseph, P. Winnick (2011). *Adapted physical education and sport*. Human Kinetics. 630 p.
- Shields, M., & Madelyn, L. (2017). Strategies to address educational needs of students who are deaf or hard of hearing. *TEACH Journal of Christian Education*, 11(2), 4-8. Available at: <https://research.avondale.edu.au/teach/vol11/iss2/2>
- International Standards for Anthropometric Assessment. [Internet]. [cited 2017 Nov 8]. 2001. Retrieved from: <http://www.ceap.br/material/MAT17032011184632.pdf>
- Apanasenko, G.L., & Popova, L. A. (2011). *Individual health: theory and practice. Introduction to the theory of individual health*. Kiev: Medkniga.
- 36-Item Short Form Survey (SF-36). [Internet]. [cited 2018 Dec 24]. Retrieved from: http://www.rand.org/health/surveys_tools/mos/mos_core_36item.html
- Pashukova, T.I., Dopira, A.I, & Diakonov, G.V. (1996). *Psychological research. Workshop on general psychology for students of pedagogical universities: study guide*. Moscow: Institute of Practical Psychology, 106-111.
- Davidenko, E.V., & Raslan Masaud. (1999). *Methods of the Framingham Study of individual physical activity: recommendations for use*. Kiev: Olymp. lit.
- Rokeach Milton (1973). *The Nature of Human Values*. New York: The Free Press, 70(3):965-966. Available from: <https://www.cambridge.org/core/journals/american-political-science-review/article/nature-of-human-values-by-milton-rokeach-new-york-the-free-press-1973-pp-438-1395/6B4C53A7BA178CB3DE3197BA08B5E383>
- Paniotto, V.I., & Maksimenko, V.S. (2003). *Quantitative methods in sociological research*. Kiev. Phoenix.
- Boyko, G.M. (2014). *Types of health-enhancing and recreational physical activity: study guide*. Kyiv: Talkom.
- Yarmak, O., Galan, Y., Hakman, A., Dotsyuk, L., & Teslitskyi, Y. (2017). The use of modern means of health improving fitness during the process of physical education of student youth. *Journal of Physical Education and Sport*, 17(3), 1935-1940. <https://doi.org/10.7752/jpes.2017.03189>

- Andrieieva, O.V. (2014). *Physical recreation of different population groups* [monograph]. Kyiv: TOV NVP Poligrafservis.
- Kateryna, U. (2016). Substantiation of the efficiency of implementation of educational and health-improving complexes in the process of physical education of students. *Fizychna kultura, sport ta zdorovia natsii*, 1, 66-71.
- Zaitsev, V.P., Yermakov, S.S., & Prusik, K. (2011). Physical recreation in the structure of students' active leisure. *Fizicheskoe vospitanie studentov*, 1, 68-77.
- Sadovsky, O., & Kyrychenko, V. (2016). Components of the model of recreational culture of students. *Fizychna kultura, sport ta zdorovia natsii*, 1, 154-158.
- Buckworth, J., & Nigg, C. (2010). Physical activity, exercise, and sedentary behavior in college students. *Journal of American college health*, 53(1), 28-34. <https://doi.org/10.3200/JACH.53.1.28-34>
- Jessica, L., Schultz, Lauren J., Lieberman, M., Kathleen, E., & Linda, C. (2013). Hilgenbrinck Ensuring the Success of Deaf Students in Inclusive Physical Education. *Journal of Physical Education, Recreation & Dance*, 84(5), 51-56. <https://doi.org/10.1080/07303084.2013.779535>
- Yarmak, O., Galan, Y., Nakonechnyi, I., Hakman, A., Filak, Y., & Blahii, O. (2017). Screening System of the Physical Condition of Boys Aged 15-17 Years in the Process of Physical Education. *Journal of Physical Education and Sport*, 17(3), 1017-1023. <https://doi.org/10.7752/jpes.2017.s3156>
- Khrypko, I.V., & Kyrychenko, V.M. (2017). The main areas of maintenance and enhancing the health of school students and higher education students. *Collection of scient. works "Integration issues of modern technologies aimed at human health"*, 1, 47-50.
- Al-Rahamneh, H., Dababseh, M., & Eston R. (2013). Fitness level of deaf students compared to hearing students in Jordan. *Journal of Physical Education and Sport*, 13(4), 83, 528-532 <https://doi.org/10.7752/jpes.2013.04083>
- Mueller, C., Ackley-Holbrook, E. (2016). The impact of a school running program on health-related physical fitness and self-efficacy in youth with sensory impairments. *PALAESTRA*, 30(1), 13-17. <https://js.sagamorepub.com/palaestra/article/view/7388>
- Kurkova, P. (2015). Emotions in the physical activities of Czech students who are deaf or hard of hearing in general and special education. *Journal of Physical Education and Sport*, 15(4), 823-828. <https://doi.org/10.7752/jpes.2015.04126>
- Kurkova, P., & Nemecek, D. (2018). Preferences and reasons for the lack of interest of Czech teenagers with sensory disabilities in physical education classes. *Physical Activity Review*, 6, 171-180. <https://doi.org/10.16926/par.2018.06.22>
- Kurkova, P., & Nemecek, D. (2016). Attitudes of students with disabilities towards physical education lessons: Reasons for their indifference and preference for leisure time activities. *Journal of Physical Education and Sport*, 16(1), 222-229. <https://doi.org/10.7752/jpes.2016.01035>
- Caglar, O., Uludag, H., Sepetci, T., & Caliskan, E. (2013). Evaluation of physical fitness parameters of hearing impaired adolescents who are active and non-active in sports. *Turkish Journal of Sport and Exercise*, 15(2), 38-44. Retrieved from <https://dergipark.org.tr/en/pub/tsed/issue/21503/230636>
- Imas, Y.V., Dutchak, M.V., Andrieieva, O.V., Kashuba, V.O., Kensytska, I.L., & Sadovsky, O.O. (2018). Modern approaches to the problem of values' formation of students' healthy lifestyle in the course of physical training. *Physical education of students*, 22(4), 182-189. <https://doi.org/10.15561/20755279.2018.0403>
- Nemcek, D. (2017). Self-esteem analyses in people who are deaf or hard of hearing: A comparison between active and inactive individuals. *Physical Activity Review*, 5, 95-104. <https://doi.org/10.16926/par.2017.05.14>
- Kashuba, V.A., Futornyj, S.M., & Golovanova, N.L. (2011). By the use of information technology in physical education students. *Slobozhans'kij naukovo-sportivnij visnik*, 4, 157-163.
- Hakman Anna, Andrieieva Olena, Kashuba Vitalii, Nakonechnyi Igor, Cherednichenko Serhiy, Khrypko Inna, Tomilina Yuliia, Filak Felix, & Moldovan Andriy (2020). Characteristics of biometric profile of posture and quality of life of students during the process of physical education. *Journal of Physical Education and Sport*, 20(1), 10, 79-85. <https://doi.org/10.7752/jpes.2020.01010>
- Hakman Anna, Andrieieva Olena, Bezverkhnia Halyna, Moskalenko Natalia, Tsybul'ska Viktoria, Osadchenko Tetiana, Savchuk Sergii, Myrkovalchuk Volody, & Filak Yaroslav (2020). Dynamics of the physical fitness and circumference sizes of body parts as a motivation for self-improvement and self-control in students. *Journal of Physical Education and Sport*, 20(1), 15, 116-122. <https://doi.org/10.7752/jpes.2020.01015>
- Galan Yaroslav, Andrieieva Olena, & Yarmak, Olena (2019). The relationship between the indicators of morpho-functional state, physical development, physical fitness and health level of girls aged 12-13 years. *Journal of Physical Education and Sport*, 19(2), 1158-1163. <https://doi.org/10.7752/jpes.2019.02168>

СОЦІАЛЬНА ІНТЕГРАЦІЯ СТУДЕНТСЬКОЇ МОЛОДІ З ВАДАМИ СЛУХУ ЗАСОБАМИ ОЗДОРОВЧО-РЕКРЕАЦІЙНОЇ РУХОВОЇ АКТИВНОСТІ

Анна Оріховська^{1ABCD}, Олена Андрєєва^{1ABCD}, Віталій Кашуба^{1ABCD}, Олена Лазарєва^{1ABCD},
Юрій Литвиненко^{1ABCD}, Вікторія Кириченко^{1ABCD}, Валерій Ареф'єв^{2ABCD}, Інна Хрипко^{1ABCD}

¹Національний університет фізичного виховання і спорту України

²Національний педагогічний університет імені М.П. Драгоманова

Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 9 с., 2 табл., 1 рис., 48 джерел.

Мета дослідження – обґрунтувати та розробити програму оздоровчо-рекреаційної рухової активності в умовах закладу вищої освіти для соціальної інтеграції студентів з вадами слуху.

Матеріали і методи. В експерименті брали участь 65 студентів з вадами слуху 17–18 років (30 – юнаків і 35 – дівчат).

Результат. Науково обґрунтовано, розкрито структуру і зміст програми оздоровчо-рекреаційної рухової активності студентської молоді з вадами слуху. Програма враховує чинники, принципи, мету, завдання, методи, організаційні і соціально-педагогічні умови її ефективної реалізації в умовах закладу вищої освіти. Вона включає систему контролю

за результатами її застосування та критерії ефективності. Критеріями ефективності програми оздоровчо-рекреаційної рухової активності визначено соціальну інтеграцію студентів з вадами слуху, відновлення їх психоемоційного стану, залучення молоді до регулярної рухової активності.

Висновки. Результати дослідження підтвердили ефективність розробленої програми оздоровчо-рекреаційної рухової активності в умовах закладу вищої освіти для соціальної інтеграції студентів з вадами слуху.

Ключові слова: оздоровчо-рекреаційна рухова активність, соціальна інтеграція, студенти, вади слуху, програма, заклад вищої освіти.

Information about the authors:

Orikhovska Anna: anetorehovskaya1305@rambler.ru; <http://orcid.org/0000-0003-4742-1585>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Andrieieva Olena: olena.andreeva@gmail.com; <http://orcid.org/0000-0002-2893-1224>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Kashuba Vitaliy: kashubavo@gmail.com; <http://orcid.org/0000-0001-6669-738X>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Lazarieva Olena: helenkaL972@gmail.com; <http://orcid.org/0000-0002-7435-2127>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Lytvynenko Yurii: ylitvynenko.biomechanics@gmail.com; <http://orcid.org/0000-0003-1137-9952>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Kirichenko Viktoria: kirichenkoviktoria13@gmail.com; <https://orcid.org/0000-0001-6094-0991>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Arefyiev Valerii: v.arefa@yandex.ua; <https://orcid.org/0000-0001-9789-9611>; Department of Theory and Methods of Physical Education, National Pedagogical Dragomanov University, Pyrogova St, 9, Kyiv, 01601, Ukraine.

Khrypko Inna: inna.khrypko@gmail.com; <http://orcid.org/0000-0001-9969-5954>; Department biomechanics and sport metrology, National University of Ukraine on Physical Education and Sport, Fizkultury St, 1, Kyiv, 03150, Ukraine.

Cite this article as: Orikhovska, A., Andrieieva, O., Kashuba, V., Lazarieva, O., Lytvynenko, Yu., Kyrychenko, V., Arefyiev, V., & Khrypko, I. (2020). Social Integration of Hearing-Impaired Students by Means of Health-Enhancing and Recreational Activities. *Теорія та Методика Фізичного Виховання*, 20(2), 86-94. <https://doi.org/10.17309/tmfv.2020.2.04>

Received: 11.04.2020. Accepted: 20.06.2020. Published: 25.06.2020

This work is licensed under a Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0>).