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PERSONALLY ORIENTED PHYSICAL CULTURE OF TEENAGERS-DANCERS AND OTHER SPORTS SECTIONS

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INTRODUCTION

The Regulation on the Organization of Physical Education and Mass Sports in Preschool, General Educational and Vocational Educational Institutions of Ukraine defines the goal of physical education as the formation of a personality aimed at ensuring the necessary level of development of vital motor skills and physical qualities; universal human values: health, physical, social and mental well-being; fostering interest and habits in independent physical education and sports, acquiring healthy lifestyle skills[21]. This goal should be achieved through the existing system of organizing physical education and sports and mass events in educational institutions[22].

The modern educational process in physical education lessons has a number of problems, one of which is the search for new educational technologies that would take into account the peculiarities of the psychophysical development of schoolchildren. Scientific research on somatic health and psychophysical development proves that they are inextricably linked with the creation of the necessary conditions for the physical education of children in the first year of school[23].

The problem of regulating the motor activity of adolescents does not lose its relevance and requires a scientific solution and further methodological improvement, since the negative consequences of intense mental stress can be largely eliminated by application of traditional and non-traditional means of physical education[24]. Today, the physical fitness of children and

[21] Положення Про організацію фізичного виховання і масового спорту в дошкільних, загальноосвітніх та професійно-технічних навчальних закладах України. Затверджено Наказом Міністерства освіти і науки України від 2 серпня 2005 р. № 458. [Електронний ресурс] – Режим доступу до положення: http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=z0909-05

[22] Наказ Міністерства освіти і науки України Про Систему організації фізкультурно-оздоровчої та спортивної роботи дошкільних, загальноосвітніх, професійно-технічних та позашкільних навчальних закладів від 21.07.2003, № 486. [Електронний ресурс] – Режим доступу до наказу: http://osvita-ua.net/legislation/Ser_osv/3029

[23] Bailey, Richard. (2006). Physical Education and Sport in Schools: A Review of Benefits and Outcomes. The Journal of school health. 76. 397-401. 10.1111/j.1746-1561.2006.00132.x.

[24] Lara Sánchez, Amador & Zagalaz-Sánchez, Mluisa & Martínez-López, Emilio J & Berdejo-del-Fresno, Daniel. (2010). Non-traditional sports at school. Benefits for physical and motor development. Citius Altius Fortius. 29.

adolescents in Ukraine does not meet the requirements of modern society in general and the individual in particular[25]. Therefore, any development of innovative methods for improving the process of physical education of adolescents must take into account the peculiarities of their psychophysical development, which determines the relevance and novelty of scientific research.

The modern system of personality formation under the influence of physical culture and sports should be aimed at finding express methods for assessing individual indicators of personal qualities of each student. One of the leading indicators that can determine the features of building physical education lessons in secondary education institutions should be psychological profile of the personality according to the structural characteristics of its subsystems: orientation, experience, features of the course of psychological processes and psychophysiological properties. The issue of finding means of increasing the effectiveness of education by means of physical culture and sports should be based on a comprehensive assessment of the personality parameters of each student.

1. Psychological aspects of the formation of personal physical culture of students aged 11-15

The concept of "personal physical culture" is gaining wide study. Physical culture is an organic part of universal human culture, its special independent branch, which is realized in a specific way through conscious motor activity[26] aimed at strengthening health, developing physical abilities, and preparing for life practice, that is, the physical and spiritual improvement of a person[27]. At the same time, P. Gunko notes the need to define the concept of "personal physical culture", understanding by this the results of using the material and spiritual values of physical culture embodied in the person himself.

One of the options for optimizing physical education is the concept of personal physical culture[28]. The interpretation of the concept of "physical culture of the individual" has been paid attention to by many specialists in

[25] Марченко, О. Ю., & Холодова, О. (2023). Дослідження фізичної підготовленості учнів молодшого шкільного віку в умовах воєнного стану. *Sportivna Medicina, Fizična Terapìâ Ta Ergoterapìâ, 1*, 70–74. https://doi.org/10.32652/spmed.2023.1.70-74

[26] Гунько П. М., Дзюник І.С. Педагогічні умови реалізації особистісно-орієнтованого підходу у процесі занять атлетизмом. Актуальні проблеми фізичної культури, спорту і здоров'я. Збірник наукових праць IV міжнародної конф. Черкаси, 2023. С. 17–23.

[27] Шиян Б. М. Теорія та методика фізичного виховання школярів: в 2 ч. 2004. Тернопіль: Навчальна книга. Богдан, Ч.1. – 272 с.

[28] Булгаков О. Особистісна фізична культура як одна із граней гармонійно розвиненої людини. Фізична культура, спорт та здоров'я нації. 2016. Вип. 20. С. 15–21. Режим доступу: http://nbuv.gov.ua/UJRN/Fkszn_2016_20_4

the field of physical culture and sports and is identified with the concept of physical culture of a person – this is not only the desire for physical improvement, but also the process of self-improvement, the practical application of knowledge, skills and abilities in the rational use of physical exercises and other means[29].

In our opinion, a more specific and perfect definition of this concept is given by B. M. Shiyan, who defines "physical culture of the individual" as a set of human properties that are acquired in the process of physical education and are expressed in his active activity aimed at comprehensive improvement of his physical nature and leading a healthy lifestyle.

Despite a significant number of studies, the problem of forming a comprehensively developed personality of schoolchildren by means of physical culture and sports remains relevant and unresolved today. Despite the formation of the basic theoretical concepts of physical culture and sports, there is no consensus among researchers regarding the mechanisms of personality formation by means of physical culture and sports.

Most scientific studies highlight the formation of individual personality qualities by means of physical education (M. V. Makarenko, 1996). At the same time, the integrity and systematicity of the personality are not taken into account. In addition, insufficient attention is paid to the practical application of the obtained data, there are no universal, integral indicators for determining the effectiveness of the formation of students' personalities by means of physical culture and sports. Among the studied contingent, students of junior and senior school age predominate, while intermediate – secondary school age remains less studied. In this regard, research is needed, the purpose of which would be to create an effective program for the formation and assessment of personal qualities of secondary school students by means of physical education and sports in general education institutions.

Assessment of cognitive activity using the methods of "information search", "search for analogies" (M. V. Makarenko, 1996); assessment of mental properties of the individual using the personal questionnaire of G. Eysenck (1964); assessment of personal qualities (according to Budassi), according to the methodology (M. Rokech) of students in grades 5-9, assessment of adolescents' attitude to physical activity in physical education lessons and in their free time, motor preferences and motives for physical education and sports (using a specially developed questionnaire); mathematical and statistical processing of the research results.

The study was conducted on the basis of secondary schools of I-III levels in the city of Sumy and Sumy district. 1094 students of middle school age

[29] Музика Ю.Д., Юденко О.В., Котов С.М. Фізична культура як феномен розвитку особистості. Вісник Національної академії керівних кадрів культури і мистецтв. 2019. № 2. С. 199–202. DOI: https://doi.org/10.32461/2226-3209.2.2019.177430

(11-15 years old) from secondary education institutions of various types were surveyed. To conduct a comprehensive study, students were divided into equal groups by age, gender, and type of educational institution.

At the beginning of the study, we surveyed adolescents about their physical education and sports activities during school and free time. It was found that 27,7±1,4% of students stated that they do not engage in physical education, do not attend physical education lessons and sports clubs. This fact can be explained by students' indifferent attitude to physical education lessons or passive behavior during them. 65,1±1,5% of students are engaged only in school, i.e. in physical education classes. The proportion of students who are additionally engaged in physical education and sports is 34,9±1,5%. Such students attend children's and youth sports schools (CYSS) (21,3±1,8%), sports sections (72,1±1,8%), sports clubs (6±0.9%) and fitness centers (0,5±0,3%).

The highest ranking place by sport is occupied by sections on sports games (15,7±1,1%). The vast majority of visitors are boys, and their choice is football. The established structure of physical culture and health-improving activity of adolescents reflects the social policy of the state regarding the development of physical culture and sports, in particular, developing and revising curricula for children's and youth sports schools, taking into account the age categories of students; implementing measures aimed at further implementing physical education lessons with football elements in general education institutions; expanding the circle of participants in competitions for prizes of the “Leather Ball” club, “Who are you, future Olympian”, “Golden Ear”, Children's and Youth Football League; work on the creation of children's and youth sports schools, training groups in professional football clubs, regional football player training centers and specialized boarding schools.

Girls attend sports dances in greater numbers (15,0±1,1%). The choice of sports sections among girls is due to the health aspect and the modern increase in the demands of young people on their own bodies.

The third place in the rating of classes is occupied by the athletics sections (4,4±0,6%), which is due to the historical aspect of the development of athletics in the Sumy region, the active work of the V. Golubnychy school regarding professional sports selection.

3,3±0,5% of students are engaged in martial arts, which is the fourth ranking place. In fifth place is cycling (1,1±0,3%), and the fewest students are engaged in skiing, the share of which is 0,3±0,2%.

A survey on the sphere of students' motor preferences shows that the most favorite sports for teenagers are sports games – 39,5%, athletics – 28,2%, and dance sports, as another type of sport.

A significant proportion – 19,8% of the surveyed students are engaged in sports dances, which according to the questionnaire category were attributed to another sport. The established features allow directing the work of sports sections and variant modules in general education institutions in the direction of three sports sections.

As a result of self-assessment of the level of motor activity in physical education lessons, only 51,6±1,5% of adolescents fully perform the physical activity prescribed by the teacher. Among adolescents, 8,8±0,9% perform only those exercises and tasks that they like, and 35,7±1,5% of respondents note that they perform only 80% of the physical activity of the lesson. Such selectivity of students in motor activity in lessons is explained by the low material and technical base (37,9±1,5%), the lack of interesting exercises (25,7±1,4%), the lack of theoretical knowledge in physical education (24,9±1,3%), and the methodology of conducting classes (19,2±1,2%). Also, as can be seen from the results, there is a proportion of students who are not satisfied with the level of competence of the teacher and his personal qualities, the proportion of positive answers to the question "What does not suit you in physical education lessons?" is 1,3±0,3%.

Thus, corrective work to optimize physical education at school should be directed at increasing the theoretical level of knowledge of students in physical culture and expanding the range of exercises in accordance with the age preferences of schoolchildren.

One of the significant conditions in the comprehensive assessment of a personality is its self-esteem. The level of self-esteem reflects the adequacy and harmony of personality development. The results of the study of the level of self-esteem of adolescents using the Budassi test indicate an even distribution among students of adequate (35,3±0,2%) and low (35,3±0,2%) levels of self-esteem ($p<0,05$). There are significantly fewer adolescent students with inflated self-esteem (29,3±0,2%). It should be noted that no significant differences were found in the gender distribution of self-esteem levels. The largest difference was recorded in the indicators of inflated self-esteem by 2,1% in girls compared to boys, and in students with low self-esteem by 2,7%.

The age distribution of the level of self-esteem indicates a probable advantage of adequate self-esteem in students aged 13-14 and 15 ($p<0,05$). At the same time, students with an inflated level of self-esteem are in second place. In thirteen-year-old adolescents, the indicator of an inflated level of self-esteem is 21,3% lower than the indicator of an adequate level of self-esteem. In 14-year-old adolescents, this difference is 6,7% and in 15-year-olds – 4,2%. There is a lack of formation of adequate self-esteem in 11-year-old adolescents with a statistical advantage of significant self-esteem ($p<0,001$), which indicates the lack of ability to adequately assess both

oneself and the environment. The distribution of self-esteem levels in 12-year-old adolescents indicates the predominance of understated self-esteem ($p<0,01$) with a sufficiently high specific weight of the adequate level.

The established data indicate a low level of self-esteem among adolescents. With age, there is an increase in the proportion of adolescents with adequate self-esteem, however, a high rate of inflated self-esteem also attracts attention, which can reduce the ability of students to adequately socialize.

Along with external factors that determine the abilities and effectiveness of sports activities of children and adolescents, there are internal – individual and personal. In particular, these include psychophysiological features: properties of the nervous system and temperament. It is known that the typological features of the nervous system are genetically determined and change with great effort under the influence of living conditions and activities. However, it has been established that the typological properties of the nervous system may undergo some changes during puberty and hormonal changes in the body of children and adolescents.[30]

Therefore, studying the properties of the nervous system of adolescents for a holistic view of their abilities and possible ways to optimize physical culture is a prerequisite for monitoring studies.

The distribution of nervous system types, which characterize the peculiarities of the formation of excitation and inhibition processes, indicates a predominance among the surveyed contingent of students with a weak type of nervous system ($50,3\pm0,2\%$, $p<0,05$). According to the interpretation of M. V. Makarenko (1996) regarding the types of the nervous system, such students are characterized by weak processes of excitation and inhibition, and the formation of conditioned reflexes is slowed down under the influence of strong stimuli.

The share of students with a strong type of nervous system ($20,2\pm0,2\%$) is almost equal to the share of students with a medium-weak type of nervous system ($20,4\pm0,2\%$), which indicates the presence of students with a strong balanced, inert and unbalanced type of nervous system. The share of students with an average type of nervous system ($9,2\pm0.1\%$), i.e. strong balanced and mobile, is the least represented.

Thus, among adolescents, students with low excitability in movements and low activity prevail. The formation of conditioned reflexes in them is slowed down. They satisfactorily master motor actions[31].

[30] Круцевич Т. Ю. Теорія і методика фізичного виховання: підруч.для студ.вищ.навч.закл.фіз.виховання і спорту: 2-ге вид.Т 2. Київ : Олімп. л-ра, 2017. 448 с.

[31] Круцевич Т. Ю. Теорія і методика фізичного виховання: підруч.для студ.вищ.навч.закл.фіз.виховання і спорту: 2-ге вид.Т 2. Київ : Олімп. л-ра, 2017. 448 с.

It should be noted that the established advantage of students with a weak type of nervous system is formed at the expense of students of general secondary education institutions of the city. The share of students in general secondary education institutions of the city with a weak type of nervous system is higher ($p<0,001$) than the share of other types, in second place in terms of prevalence are the share of students with an average-weak type. Unlike students in urban secondary schools, among students in rural secondary schools the proportion of students with a strong type of nervous system is in second place.

Gender differences in the distribution of types of the nervous system are that the formation of such types as strong, medium and medium-weak occurs at the expense of girls, and weak at the expense of boys ($p <0,05$). The established features indicate a predominance among boys 11-15 years of age of students with weak processes of both inhibition and excitation.

Age differences in the distribution of nervous system types of the surveyed contingent are characterized by the identity of the distribution of nervous system types in students 11-12 and 14-15 years old, in contrast to students 13 years old. Among students 11-12 years old, the proportion of students with a weak and average type of nervous system prevails ($p <0,01$), and among children 14-15 years old, the proportion of students with a strong type of nervous system. Most 13-year-old students have a weak type of nervous system.

Thus, in the surveyed sample, students with a strong type of nervous system are formed at the expense of girls of secondary education institutions of the village aged 14-15, which indicates their readiness to overcome difficulties. Performing physical exercises is characterized by confidence and coordination, the quality of movements of the same type and worse manifestations of speed. The weak type of nervous system is found mainly in boys of secondary education institutions of the city aged 11-13, which, according to T.Yu. Krutsevich (2017), indicates a decrease in readiness to overcome difficulties and the worst motor activity, self-doubt and poor coordination.

Thinking is one of the main mental functions that are part of the structure of consciousness. Depending on the nature of the objects, there are: visual-figurative, visual-active and abstract-logical thinking. At 12-15 years of age, according to J. Piaget, the formation of the abstract-logical type of thinking is completed, which passes the stage of formation. Therefore, one of the tasks of the study was to establish the degree of formation of abstract-logical thinking among students aged 11-15, since the ability to deductive-theoretical thinking allows, along with the awareness of reality, to be

distracted from the specific time of operating with images and statements.[32] In our opinion, the presence of abstract-logical thinking is a significant prerequisite for the formation of a person's physical culture in physical education lessons.

It should be noted that as a result of the assessment of the levels of development of abstract-logical thinking in adolescents aged 11-15, a low level was found in 56,7±1,6%. The share of students with a high level of abstract-logical thinking is 7,4±0,8%, with an average level – 35,9±1,5%. The identified features indicate a low ability of students to operate with abstract concepts, analyze and synthesize the information received.

The predominance of a low level of development of abstract-logical thinking can be explained by the age-related features of the development of the cognitive sphere of adolescents. In 11– and 12-year-old students, a predominance of a low level of development of abstract-logical thinking is observed ($p < 0,05$), in 14-year-old adolescents, the shares of the three levels of development of abstract-logical thinking are equally significant. A high level of development of abstract-logical thinking was recorded in students aged 13 and 15 ($p < 0,05$), which confirms the age-related characteristics of thinking development.

These studies also indicate the presence of gender differences in the distribution of students' levels of abstract-logical thinking. Boys have a significant advantage in the formation of a low level of abstract-logical thinking ($p < 0,001$). The average and high levels are formed at the expense of girls. The difference between the proportion of girls and boys with a high level is 55,6%, with an average level – 9,2% ($p < 0,05$). The results obtained indicate higher indicators of formed abstract-logical thinking in girls compared to boys, which indicates the need to include specific exercises aimed at developing abstract-logical thinking in physical education lessons in boys.

Analysis of the indicators of testing abstract-logical thinking in students of secondary education institutions by place of residence allowed us to establish the identity of the distribution of levels of abstract-logical thinking in students, which is expressed in the probable predominance of the low level. However, there is a difference in the ratio of levels between urban and rural students. Urban students have a higher share of high levels by 4,8% compared to rural students. The average level of urban students is 2,1% higher than that of rural students, while the low level of rural students is 7% higher than that of urban students.

Analysis of the results of determining the level of short-term memory indicates the superiority of average (47,9±1,6%) and high (50,2±1,6%)

[32] Кузів О.Є. Психофізіологія курс лекцій. Тернопіль: вид-во ТНТУ ім. І. Пулюя, 2017. – 194 с.

levels over low (1,9±0,4%, p <0,05). Age differences in the formation of short-term memory levels consist in the probable superiority of high levels in 11-year-old students, average levels in 12-year-old students, and low levels in 13-year-old students. Among 14-year-olds, the proportion of students with low and medium levels is the same, while the proportion of students with high levels of short-term memory is 4,3% lower (p <0,05). Among 15-year-olds, the three levels of short-term memory are equally common.

The established features can be explained by the low level of arbitrary memory compared to involuntary memorization, which is more related to the emotional perception of information. Younger students perceived the testing with interest and pleasure, which confirms the superiority of their high and medium levels of short-term memory. Older students, with their inherent suspiciousness and desire for independence, may not have used willpower to arbitrarily memorize the task.

The results of the analysis of gender differences in short-term memory levels indicate the formation of an average level due to the share of boys (54,4±1,6%), since the share of girls with an average level is 8,8% less (45,6±1,6%, p <0,05) and a high level due to girls (52,8±1,6%), since the share of boys with a high level (47,2±1,6%) is 5,6% less. This indicates a higher level of short-term memory in girls and creates the prerequisites for including exercises in physical education lessons to develop memory in boys.

The distribution of short-term memory levels among urban and rural students allowed us to establish the predominance of a high level (51.5±1,6%) in urban students and an average level (52,4±1,6%) in rural students. Accordingly, the second place in terms of short-term memory development was established for urban students with an average level (45,9±1,6%), while for rural students with a high level (47,3±1,6%). The specific weight of low level in rural students (0,3±0,2%) is 8,3% lower compared to low level in urban students (2,5±0,5%, p <0.01). Thus, in terms of the total percentage of average and high level, rural students (99,7%) have higher short-term memory development indicators than urban students (97,4%).

It is known that temperament is an individual-typological characteristic of humans and higher animals, which is manifested in the strength, intensity, speed and balance of the course of their mental processes. The content of temperament is determined by the worldview, character, education, and upbringing of a person. Temperament is a general characteristic of a person, it leaves an imprint on all aspects of his mental life and activity. Temperament is most clearly manifested in the emotional life and motor sphere. Temperament is determined by the type of nervous system, it is

considered innate and to a small extent is amenable to pedagogical correction and volitional regulation.

According to the results of G. Eysenck's personality questionnaire, the surveyed contingent of students was characterized by a predominance of qualities inherent in sanguine people (36,4±1,5%), that is, students are characterized by sociability, openness, talkativeness, accessibility, liveliness, carefreeness, initiative, and love of entertainment. In second place were the qualities inherent in choleric people (26,9±1,4%), namely: offensiveness, anxiety, aggressiveness, excitement, impulsiveness, optimism, activity, and mood swings.

The third place is occupied by students with phlegmatic traits (21,8±1,3%): passivity, diligence, thoughtfulness, peace-loving, purposefulness, reliability, measuredness, calmness. The fourth place is occupied by students with melancholic temperament traits (14,9±1,1%): irritability, anxiety, intransigence, instability, pessimism, restraint, and reticence.

However, since there is no clear distinction between a certain type of temperament in each individual, we analyzed the existing symptom complexes of extraversion-introversion and neuroticism (emotional instability) in students using the questionnaire's assessment scales. Thus, on the extraversion-introversion scale, students have a score of 14,1±0,2 points, which corresponds to moderate extraversion with a range of 12-15 points. On the neuroticism scale, students have a score of 9,8±0,2 points, which corresponds to moderate neuroticism with a range of 8-11 points. Thus, we can conclude that adolescents aged 11-15 are characterized by volitional regulation of emotions and feelings.

The next stage in characterizing the diversity of personality types is the analysis of the age-specific characteristics of the established characteristics. Each age is characterized by the predominance of a different type of temperament. Thus, 11-year-old students are more often characterized by the phlegmatic type (52,1±1,6 points), 12-year-olds – phlegmatic (25,6±1,4 points) and melancholic (26,9±1,4 points) types, 13-year-olds – melancholic (23,5±1,3 points), sanguineous (20,9±1,3 points) and choleric (19±1,3 points) types, 14-year-olds – choleric (24,1±1,4 points) type, and 15-year-olds – choleric (36,5±1,5 points) and sanguineous (35,7±1,5 points) types. The established feature indicates a probable predominance of unstable temperament types (cholerics, melancholic) in students aged 12-15, along with stable extroverts, which allows us to state more developed traits such as irritability and offensiveness, anxiety and aggressiveness, restraint and impulsiveness.

Confirms the established characteristics and analysis of the symptom complexes of extraversion-introversion and neuroticism (emotional

instability). Thus, the extraversion scale increases with age from the level of moderate introversion (8-11 points according to the method) to pronounced extraversion by 36,9% (16-18 points). However, the level of neuroticism of students, regardless of age, remains unchanged and corresponds to a moderate level (8-11 points). The established data indicate the gradual development with age of the traits inherent in an extrovert in students, who are self-confident, take risks, hot-tempered, act under the influence of the moment, impulsive, carefree, optimistic, and like to communicate.

The gender characteristics of the distribution of temperament types are as follows: first, temperament types characterized by manifestations of emotional instability, the predominance of the emotional sphere over the strong-willed sphere are observed mainly in girls. Thus, among the choleric type of temperament, there are 33% more girls, and among the melancholic type, there are 18,2% more, compared to boys. Secondly, temperament types with emotional stability, volitional control of actions are inherent in boys. Thus, among the sanguine type, there are 7% more boys, and 15% more phlegmatic types than girls.

Thirdly, no gender differences were found in the extraversion-introversion scale scores of girls and boys, unlike the neuroticism scale. According to the gradation, their extroversion scale scores (14,2±0,2, 14,1±0,2 points, respectively) correspond to a moderate manifestation of the traits. A comparative analysis of the neuroticism scale indicators in adolescents indicates a significant difference in the indicator of moderate manifestation of neuroticism in girls (10,6±0,2 points) from boys (8,9±0,2 points, $p<0,001$), which indicates a tendency to increase the level of neuroticism and a tendency of girls to emotional instability.

Thus, the features of cognitive processes inherent in students aged 11-15 are characterized by the presence of a weak type of nervous system, a low level of short-term memory, a low level of abstract-logical thinking, and manifestations of moderate extraversion and neuroticism.

2. Motor activity of students in grades 5–9 with different types of temperament

Today, leading domestic and foreign scientists distinguish two forms of motor activity: spontaneous and specially organized. In their combination, these two types of motor activity should be at an average level, since they determine the optimal development and health of children[33]. According to the analysis of literary sources, the problem of studying MA has several

[33] Калиниченко І. О. Гігієнічна оцінка добової рухової активності дітей 7-17 років. Спортивна медицина. 2014. № 1. С. 36–40. Режим доступу: http://nbuv.gov.ua/UJRN/smed_2014_1_7.

directions of scientific developments. First, the method of assessing MA is being studied. Three methods of measuring motor activity are distinguished:

1) by time expenditure (per day, per week);

2) by the number of locomotions performed per day (crometry);

3) by energy expenditure (in calories or J per unit of time), among which the most objective, but the most capacious is the last[34]

Secondly, the features of MA in ontogenesis are studied. The dependence of the formation of motor activity on age has been established. In adolescence, the importance of social function in human life comes to the fore, in contrast to primary school age where the game determines the behavior of the schoolchild. Therefore, the most important point in the physical education of adolescents is the formation of their personal attitude towards physical training, the upbringing of an active position towards their health.[35]

Thirdly, the factors of formation and peculiarities of the influence of MA on the organism of children, adolescents, and young people are studied[36]. Among the studied connections and factors of influence on MA, personal qualities deserve special attention. In particular, the mental property of the personality – temperament. It is known that temperament is an individual-typological characteristic of humans and higher animals, which is manifested in the strength, intensity, speed and balance of the course of their mental processes. The content of temperament is determined by the worldview, character, education, and upbringing of a person. Temperament is a general characteristic of a person, it leaves an imprint on all aspects of his mental life and activity. Temperament is most clearly manifested in the emotional life and motor sphere. Temperament is determined by the type of nervous system, it cannot be considered innate, since it is a mental formation and is largely subject to pedagogical correction, volitional regulation.

In psychology, according to the research of V. D. Nebylitsyn (1976, 1990), it was established that a person's motor activity is one of the traits and components of temperament. Separating general, motor and emotional activity, the scientist notes that a high level of motor activity characterizes choleric and sanguine people (they walk quickly, rhythmically, and speak loudly), while a low level characterizes melancholic and phlegmatic people (they walk smoothly, their speech is calm and quiet).

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[34] Тисевич Т.В., Лойко Рухова активність – основа фізичного здоров'я Art of medicine. 2019. № 4. С. 124-127. – Режим доступу: http://nbuv.gov.ua/UJRN/artmed_2019_4_21

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In modern literature, there is not enough scientific data on the assessment of the components of motor activity of middle school students with different types of temperament (Malkhazov O. R., 2003). This determined the relevance and determined the purpose of the study.

The determination of motor activity in adolescents was carried out using the method of formalized self-reporting, as it is suitable for covering a significant contingent of subjects.[37] The method allows, based on self-assessment of the time spent per day on different (by intensity) categories of motor activity, to determine the average daily energy expenditure of schoolchildren[38].

Categories of motor activity ("background", "sedentary", "low", "medium", "high") by activity intensity were assessed in METs (ratio of energy expenditure during activity to energy expenditure at rest): 1.5; 2.5; 4.0; 6.0; 10, respectively.[39] Based on the obtained data, the total daily energy expenditure and the average daily energy expenditure of adolescents were calculated. According to the normative scale for assessing the levels of motor activity (L. Cale, 1994), a very low level of motor activity was considered with an average daily energy expenditure of less than 33 kcal/kg, low – from 33 kcal/kg to 36,99 kcal/kg, medium – from 37 kcal/kg to 39,99 kcal/kg, and more than 40 kcal/kg – high.

To assess the symptom complex of extraversion-introversion and neuroticism (emotional stability), a personal questionnaire by G. Eysenck (1964) was used. The study involved 1,094 students aged 11–15 from secondary education institutions of various territorial significance in the Sumy region.

According to the results of the Eysenck personality questionnaire, the surveyed contingent of students was characterized by a predominance of qualities inherent in sanguine people (36,4±1,5%), that is, students are characterized by sociability, openness, talkativeness, accessibility, liveliness, carefreeness, initiative, and love of entertainment. In second place were the qualities inherent in choleric people (26,9±1,4%), namely: offensiveness, anxiety and aggressiveness, excitement, impulsiveness, optimism, activity and mood swings.

The third place is occupied by students with phlegmatic traits (21,8±1,3%): passivity, diligence, thoughtfulness, peace-loving, purposefulness, reliability, measuredness, calmness. The fourth place is

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occupied by students with melancholic temperament traits (14,9±1,1%): irritability, anxiety, intransigence, instability, pessimism, restraint, and reticence.

However, since there is no clear distinction between a certain type of temperament in each individual, we analyzed the existing symptom complexes of extraversion-introversion and neuroticism (emotional stability) in students using the questionnaire's assessment scales. Thus, on the extraversion-introversion scale, students have a score of 14,1±0,2 points, which corresponds to moderate extraversion, the limits of which are 12–15 points. On the neuroticism scale, students have a score of 9,8±0,2 points, which corresponds to moderate neuroticism with a limit of 8–11 points. Thus, we can conclude that adolescents aged 11–15 are characterized by volitional regulation of emotions and feelings.

The next stage in characterizing the diversity of personality types is the analysis of the age-specific characteristics of the established characteristics. Each age is characterized by the predominance of a different type of temperament. Thus, 11-year-old students are more often characterized by the phlegmatic type (52,1±1,6 points), 12-year-olds – phlegmatic (25,6±1,4 points) and melancholic (26,9±1,4 points) types, 13-year-olds – melancholic (23,5±1,3 points), sanguineous (20,9±1,3 points) and choleric (19±1,3 points) types, 14-year-olds – choleric (24,1±1,4 points) type, and 15-year-olds – choleric (36,5±1,5 points) and sanguineous (35,7±1,5 points) types. The established feature indicates a probable predominance of unstable temperament types (cholerics, melancholic) in students aged 12–15, along with stable extroverts, which allows us to state more developed traits, such as irritability and offensiveness, anxiety and aggressiveness, restraint and impulsivity.

Confirms the established characteristics and analysis of the symptom complexes of extraversion-introversion and neuroticism (emotional stability). Thus, the extraversion scale increases with age from the level of moderate introversion (8–11 points according to the methodology) to pronounced extraversion by 36,9% (16–18 points). However, the level of neuroticism of students, regardless of age, remains unchanged and corresponds to a moderate level (8–11 points). The established features indicate the gradual development with age of the traits inherent in an extrovert in students, who are self-confident, take risks, hot-tempered, act under the influence of the moment, impulsive, carefree, optimistic, and like to communicate. According to the neuroticism scale, adolescents are characterized by emotional stability and volitional regulation of actions.

The gender characteristics of the distribution of temperament types are as follows: first, temperament types characterized by manifestations of emotional instability, the predominance of the emotional sphere over the

strong-willed sphere are observed mainly in girls. Thus, among the choleric type of temperament, there are 33% more girls (66,5±) compared to boys (33,5±), among the melancholic type, there are 18,2% more girls (59,1±) compared to boys (40,9±). Secondly, temperament types with emotional stability, volitional control of actions are inherent in boys. Thus, among the sanguine type, there are 7% more boys (53,9±) than girls (46,1±), and 15% more phlegmatic types (57,5±).

Thirdly, no gender differences were found in the extraversion-introversion scale scores of girls and boys, unlike the neuroticism scale. According to the gradation, their extraversion scale scores (14,2±0,2; 14,1±0,2 points, respectively) correspond to a moderate manifestation of the traits. A comparative analysis of the neuroticism scale scores in adolescents indicates a significant difference in the moderate neuroticism score of girls (10,6±0,2 points) from boys (8,9±0,2 points, $p<0,001$), which indicates a tendency to increase the level of neuroticism and a tendency of girls to emotional regulation of actions.

A comparative analysis of the manifestation of indicators of physical qualities and motor activity in students with different types of temperament allowed us to establish that phlegmatics, who are characterized by the highest manifestations of introversion and emotional stability, have the lowest level of daily energy expenditure, development of flexibility, agility, and speed-strength qualities ($p<0,01$), (Table 1).

In students with the melancholic type, the average daily energy expenditure does not differ from the values of students with the sanguine and choleric types, however, differences were found in the indicators of physical qualities (Table 1). Thus, the flexibility indicator is 3,2% lower than the indicator of students with the sanguine type and 14,2% lower than the indicator of students with the choleric type ($p<0,05$). The agility indicator is 6,3% worse than the indicator of students with the sanguine type and 4,5% worse than the indicator of students with the choleric type ($p<0,001$). Speed-strength qualities are 9,2% worse than the indicator of students with the choleric type and 12,2% worse than the indicator of students with the sanguine type. Thus, higher rates of daily energy expenditure and development of flexibility, agility, strength, and speed-power quality are observed in students with pronounced extraversion, i.e. choleric and sanguine types.

Table 1

Indicators of motor activity and physical qualities in students with different types of temperament

Indicators	Type of temperament			
	choleric	**sanguine**	**phlegmatic person**	**melancholic**
Forward torso tilt from a sitting position	$10,6\pm0,4^{*}$ $t_{1,2}=2,3$	$9,4\pm0,3^{\#}$ $t_{2,3}=2,9$	$7,9\pm0,4^{**}$ $t_{1,3}=4,8$	$9,1\pm0,5$ $^{*}t_{1,4}=2,2,$ $t_{2,4}=4,5^{**}$
Shuttle run 4 x 9 m	$10,7\pm0,1$	$10,5\pm0,1^{**}$ $t_{2,3}=4,8$	$11,1\pm0,1^{\#}$ $t=3,7$	$11,2\pm0,1^{**}$ $t_{1,4}=3,6$
Flexion and extension of the arms in a supine position	$11,5\pm0,4$	$10,5\pm0,4^{*}$ $t_{2,3}=2,4$	$8,9\pm0,6^{\#}$ $t=3,6$	$10,6\pm0,6$
Standing long jump	$160,7\pm1,9$	$166,2\pm1,9^{**}$ $t_{2,3}=4,0$	$154,7\pm1,9$ $t_{1,3}=2,2^{*};$ $t_{3,4}=2,4^{*}$	$145,9\pm3,6$ $t_{1,4}=4,0^{**};$ $t_{2,4}=5,3^{**}$
Middle distance running	$8,1\pm0,3$	$8,3\pm0,2$	$8,3\pm0,2$	$8,7\pm0,2$
100 m run	$5,9\pm0,2$	$6,0\pm0,1$	$6,1\pm0,2$	$5,9\pm0,2$
Daily energy expenditure, kcal/kg	$38,1\pm0,4^{\#}$ $t=4,7$	$38,7\pm0,4^{**}$ $t_{2,3}=5,7$	$34,3\pm0,7^{\#}$ $t_{3,4}=2,7$	$37,1\pm0,6^{*}$ $t_{2,4}=2,1$

Notes: ** – p<0,05; # – p<0,01; ** – p<0,001*

In support of this conclusion, the results of correlation analysis showed that students with higher extroversion scores spend more time on physical education classes in sports clubs, participate with their parents in competitions, contests, and hikes, attend summer health camps, and take physical education breaks during lessons. At the same time, such students are reluctant to engage in physical exercises at home, as evidenced by the inverse correlation (Table 2).

The lower the emotional stability of adolescents, that is, the greater the tendency to emotional breakdowns, the less time such students spend on physical exercises at home and on physical education classes at school (r=-0,14, p<0,05). Such a trait as a tendency to emotional breakdowns most characterizes the melancholic temperament type. Therefore, in our opinion, they are the ones who reduce the time spent on physical exercises at home and at school. Whereas in cholerics, who may have pronounced neuroticism, i.e. emotional instability, the level of motor activity and the time spent on morning hygienic gymnastics increase, as evidenced by a positive relationship (r=0,13, r=0,15, p<0,05).

According to the UNESCO International Charter on Physical Education and Sport, the main, fundamental legal right of all people is the right to access physical education and sport, which is necessary for the development of their personality. At the same time, Article 6 of the Resolution states that research and evaluation in the field of physical education and sport should contribute to the progress of sport in all its forms, improving the health and

safety of participants. The education system needs to introduce innovations that contribute to improving pedagogical methods and increasing the level of sports achievements.

Table 2

Values of correlation coefficients between temperament characteristics and components of students' motor activity

Indicators	Neuroticism	Extraversion
Morning exercises before classes	0,15*	0,05
Physical exercise classes at the place of residence	-0,14*	-0,15*
Physical education classes at school	-0,14*	0,06
Physical education classes at a sports club	0,06	0,14*
Participation in various competitions with parents	-0,01	0,16*
Family hikes	-0,02	0,20*
School competitions	-0,05	0,13*
Physical education activities in summer health camps	-0,02	0,11*
Physical education breaks during lessons	0,02	0,13*
Physical activity levels	0,13*	0,10*

Note: ** – p<0,05 – level of significance of the coefficient.*

3. Assessment of the effectiveness of the program to promote personal development through physical education

The main problems of physical education and sports are of an objective-subjective nature. Among them, the first place is occupied by the attitude of society to physical culture and sports, the level of financial and methodological support of this industry. The second is the personal factor: low individual interest in physical culture and sports and interest in achieving certain results in this industry[40]. The third is the role of the individual physical education teacher or sports coach and training of personnel[41]. The fourth is the lack of serious motivation to engage in physical education and sports due to the lack of active state propaganda of a healthy lifestyle and the influence of market relations.[42] The fifth is the inconsistency of the regulatory framework with modern requirements[43].

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Therefore, the development and implementation of new methods for assessing students' personal qualities under the influence of physical education and sports is of significant importance.

To achieve the goal, we conducted an assessment of health status using standard health criteria; anthropometric measurements, determination of physical fitness based on the results of control exercises provided for by state tests and standards for assessing the physical fitness of the population of Ukraine (Zubaliy M. D., 1997); assessment of motor activity using the method of formalized self-reporting (Krutsevich T. Yu., 2005); research of the properties of higher nervous activity according to the strength of the nervous system – tapping test (Ilyin E. P., 1972), cognitive activity according to the methods of "information search", "search for analogies" (Makarenko M. V., 1996); assessment of the mental properties of the personality according to the personality questionnaire of G. Eysenck (1964); assessment of personal qualities (according to Budassi); study of the structure of values of adolescents according to the method of M. Rokech; assessment of adolescents' attitudes towards physical activity in physical education classes and in their free time, movement preferences and motives for engaging in physical education and sports (using a developed questionnaire); mathematical statistics. 1094 middle school-age students of general secondary education institutions in Sumy were surveyed.

The results of the assessment of the average values of indicators of cognitive activity, mental properties, personal qualities and indicators of physical qualities, motor activity indicate the presence of identical sensitive periods of their development. This conclusion is made by a comparative characteristic of the development of physical qualities, the formation of motor activity skills of students with different levels of development of short-term memory, logical thinking, extraversion, neuroticism, and self-esteem.

It was found that students with low memory levels have a very low level of motor activity (26,03±4.1 kcal•kg-1), while students with average memory levels have a 28,1% higher average daily energy expenditure (37,2±0,5 kcal•kg-1).

It was found that 92,03% of students with high levels of memory among the components of motor activity prefer physical exercises at home ($p<0,05$) and in physical education and health centers (61,9%, $p<0,05$). This indicates a conscious choice of components of motor activity in students. At the same time, the critical levels of physical exercises at home are 17,8 minutes ($p<0,05$), morning hygienic gymnastics – 12,1 minutes ($p<0,05$), and energy expenditure is not less than 36,8 kcal•kg-1 ($p<0,001$), which on the scale of levels corresponds to a low level of daily energy expenditure.

It was found that children with a high level of logical thinking have higher indicators of physical qualities, in particular flexibility and strength. Students with a high level of logical thinking have high indicators of flexibility (10,6±0,8 cm) and strength (13,4±0,8 times) compared to students with a low level of logical thinking (8,6±0,3 cm, 9,2±0,3 times, respectively). At the same time, the difference is 18,9% for flexibility and 31,3% for strength.

Research data show that students with a high level of abstract-logical thinking among the components of motor activity during the day choose morning hygienic gymnastics in 73,5% ($p<0,05$), walking in 97,5% ($p<0.05$), and housework in 87,1% ($p<0,05$). While students with a low level of abstract-logical thinking choose these components as an asset of their day only in 66,9%, 88.3%, and 82,3%, respectively. Determination of threshold levels of motor activity indicators in students with different levels of abstract-logical thinking indicates a critical level of 15,9 minutes of walking ($p<0,01$), 50,9 minutes of housework ($p<0.01$), and 1,1 hours of outdoor time.

The coincidence of the stages of self-esteem formation and indicators of physical qualities, formation of motor activity skills of adolescents is confirmed by the data of comparative analysis of these indicators. Thus, students with normal and overestimated self-esteem have higher indicators of daily energy expenditure (38,7±0,4, 38,1±0,5 kcal•kg-1, respectively) compared to the indicator of daily energy expenditure of students with underestimated self-esteem (35,1±0,5 kcal•kg-1, $p<0,001$). The indicators of flexibility, agility, strength and speed-power qualities have better values in schoolchildren with normal and overestimated self-esteem than with underestimated ($p<0,05$). The indicators of flexibility (10,7±0,3 cm) in students with normal self-esteem are 23,4% higher than the indicators in students with underestimated self-esteem (8,2±0,3 cm) and 9,3% higher than the indicators in students with overestimated self-esteem (9,7±0,4 cm, $p<0,001$).

Along with high dexterity indicators, students also have higher self-esteem indicators. Thus, the dexterity indicators (10,5±0,1 s) of students with normal self-esteem are 2,7% higher than the dexterity indicator of students with inflated self-esteem (10,8±0,1 s) and 3,7% higher than the indicator of students with low self-esteem (10,9±0,1 s, $p<0,05$). Also, students with low self-esteem had 21% lower strength indicators (8,9±0,4 times) and 6,1% lower speed-strength indicators (152,6±1.9 cm) compared to the indicators of these physical qualities of students with normal (11,3±0,4 times, 162,6±1,9 cm, respectively) and high self-esteem (12,1±0,5 cm, 166,3±1,5 times, respectively, $p<0,001$).

Our calculations of the threshold levels of motor activity components of students with adequate self-esteem allowed us to determine the critical duration of the components: morning hygienic gymnastics at least 12,7 minutes ($p<0,05$), sports at least 37 minutes ($p<0,01$), walking at least 18.5 minutes ($p<0,001$), being in the fresh air at least 56,5 minutes ($p<0,01$), sleep at least 7,9 hours ($p<0,001$), watch TV for no more than 80,6 minutes ($p<0,01$), and do homework for no less than 1,7 hours ($p<0,001$). At the same time, daily energy expenditure should not be less than 38,6 kcal•kg-1, which corresponds to the average level of physical activity.

A comparative analysis of the distribution of daily energy expenditure in students with different types of temperament allowed us to establish that phlegmatics, who are characterized by the highest manifestations of introversion and emotional stability, have the lowest level of daily energy expenditure (34,3±0,7 kcal•kg-1, $p<0,01$), which is due to a decrease in the time spent in sports sections (27,4±3,5 min) and an increase in the time spent watching TV programs (106,5±5,9 min).

Factor analysis of the formation of motor activity in adolescents aged 11-15 years based on indicators of physical fitness, physical development and value structure of the personality allowed us to identify 3 factors that describe 61,9% of the sample. Interpretation of the main factors after rotation of the factor matrix with the Varimax row criterion allowed us to evaluate them as follows: Factor 1 (21,6%) reflects the age-related characteristics of the child's physical development: age, body length, body weight; Factor 2 (22,2%) – goal values (terminal): cheerfulness and courage; Factor 3 (18,1%) – instrumental values, thanks to which one can achieve a goal in life: self-confidence.

Among the analyzed factors of forming students' attitude towards physical culture, 4 factors were obtained, describing 78,7% of the sample: factor 1 (19,5%) – age-related features of physical development; factor 2 (27,8%) – the structure of values of adolescents, namely: courage and upbringing; factor 3 (16,6%) – the type of development of higher nervous activity according to the strength of the nervous system and factor 4 (14,8%) – the development of physical qualities, namely strength.

The resulting groups of factors can be divided into “biological” and “psychological”. Since it is “psychological” factors that attract our attention, the analysis of their influence allows us to state that students with the personal qualities of cheerfulness, courage, well-manneredness, self-confidence, willpower, honesty, freedom of action, with a high level of motivation have the opportunity to achieve a high level of motor activity, physical fitness and a positive attitude towards physical culture. Of course, having a “biological” basis in the form of harmony of physical development and a rational combination of active and passive rest.

Thus, the established data indicate the heterochrony of the formation of physical fitness, motor activity, and personal qualities in adolescents aged 11-15, which confirms the need for an individual approach to the use of physical education tools in the process of developing students' personalities. Since the obtained research results indicate the simultaneous presence in the research groups of students with different levels of personality development, physical fitness, and formation of motor activity skills.

Based on the obtained research data, a methodology for assessing the model of the psychological personality profile (PPP) of students aged 11-15 was developed based on regression analysis, which is generally reliable and adequate ($F=109.39$; $p<0.01$):

$$PPP = 19.4+0.13\times FP+0.29\times LS+0.52\times LM+0.15\times LT-0.1\times LE-0.23\times N-1.2\times HG+0.2\times DE+0.11\times LMot,$$

where, HG – health group (points), LE – level of extraversion-introversion (points), N – level of neuroticism (points), LT – development of logical thinking (points), LM – level of memory (points), FP – physical fitness (sum of points); DE – daily energy expenditure (kcal•kg-1), LS – level of self-esteem of the individual (points), LMot – level of motivation (points).

The degrees of PPP were obtained according to the Gaussian distribution function according to the one-sigmal interval rule: 0-25 points – low; 26-32 points – medium; 33-39 points – high.

The methodology for assessing the model of the psychological profile of the personality of students aged 11-15 in a physical education lesson consists of five steps: conducting a questionnaire among students; processing the results of the questionnaire; scoring the parameters of the PPP; determining the degree of PPP by the formula.

Based on the data obtained, in order to form the personal qualities of students, a “Program for Promoting Personal Development through Physical Education” (hereinafter referred to as the Program) was developed. It included 3 blocks: block 1 – theoretical “Learn about yourself”; block 2 – monitoring “Know yourself”; block 3 – practical “Create yourself”. The “Know yourself” block includes an assessment of the components of physical education in points and the construction of a petal diagram.

The pedagogical experiment consisted of implementing the Program into the educational process of students in grades 5-9, aged 11 to 15, of a general secondary education institution in the city of Sumy. The experimental group (EG) included 130 students, and the control group (CG) included 123 students. The groups were evenly distributed by gender and age. The indicators of mean values and standard deviations in the level of physical development, physical fitness, personal qualities, and cognitive abilities in the control and experimental groups did not have a significant difference.

The distribution of PPP levels in the control and experimental groups indicates a significant advantage in the control group at the beginning of the experiment of the average PPP level, which is 20,8% higher than the low PPP level ($p<0,01$). Before the beginning of the experiment, the PPP levels in the experimental group do not have significant differences in distribution.

In the experimental groups, the process of physical education was built on the basis of developed pedagogical actions to take into account an individual approach in a comprehensive assessment of students' personal characteristics. In the control groups, all organizational forms of physical education classes were carried out according to generally accepted methods.

At the end of the experiment, there were no significant changes in the distribution of indicators in the control group, while the distribution of degrees in the experimental group underwent significant changes. Thus, in the experimental group, a high degree of PPP development was revealed, the share of which was 12% lower than the average degree and 34,6% lower than the low degree ($p<0,05$). The indicator of low level of PPP at the end of the experiment compared to the beginning is probably lower among adolescents in the experimental group ($p<0,05$).

The results of the implementation of the Program to Promote Physical Education of Adolescents with Different Levels of Physical Education indicate its effectiveness. Comparison of the results of the study in the experimental group at the end of the experiment using the Student's t-test indicates the presence of significant differences in indicators. The data demonstrate positive deviations in the mean values of all age groups. It should be noted that the highest results among girls were achieved by twelve-year-olds, and among boys by 14 and 15-year-olds ($p<0,05$). Analysis of the specific gravity of changes in the total PPP indicator allows us to note that in the EG among boys, its gradual increase with age is observed. In girls, the maximum changes occurred at 12 years of age.

CONCLUSIONS

As a result of the assessment of the components of personal physical culture of middle school students, psychological aspects of personality were established. Students aged 11-15 are characterized by a weak type of nervous system (50,3±0,2%, $p <0,05$); average (47,9±1,6%) and high (50,2±1,6%, $p <0,05$) level of short-term memory; low level of abstract-logical thinking (56,7±1,6%, $p <0,05$), moderate extraversion (14,1±0,2 points) and moderate level of neuroticism (9,8±0,2 points), which indicates the presence of volitional regulation of emotions and feelings in them. The established data in physical education lessons require attention to such forms of physical activity as outdoor games with elements of thinking, athletics and sports games.

The application of the recommended Program during the experiment made it possible to establish the following: firstly, in the experimental group, the motor activity indicator underwent significant changes, which confirms the fulfillment of the main task of the program to promote physical culture. Secondly, among personal qualities and cognitive processes, the most significant changes were experienced by indicators of self-esteem, logical thinking, memory, and neuroticism.

The effectiveness of the implemented Program was established, which indicates an increase in the total level of the psychological profile of the individual in the experimental group ($p<0,05$) in contrast to the control group. An increase in the total indicator of the level of the psychological profile of the personality was registered: in 11-year-old students by 7,6% in boys and by 12,9% in girls; in 12-year-old students by 15,0% in boys and by 17,1% in girls; in 13-year-old students by 14,0% in boys and by 10.8% in girls; in 14-year-old students by 18,1% in boys and by 12,0% in girls; in 15-year-old students by 16,4% in boys and by 10,6% in girls. The established data allow us to offer the developed Program to secondary education institutions for building a variable part of the lesson.

SUMMARY

As a result of research conducted among middle school students, the superiority of mental qualities inherent in sanguine people has been established. A comparative analysis of the manifestation of indicators of physical qualities and motor activity in students with different types of temperament allowed us to establish the lowest level of daily energy expenditure in phlegmatics and the highest in sanguine and choleric people. The established connections between temperament characteristics and indicators of motor activity and physical qualities allow us to develop a basis for developing programs for the development of personal qualities through physical culture and sports.

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