

GYMNASTICS EXERCISE IN IMPROVING THE PERFORMANCE OF PHYSICAL AND FUNCTIONAL CONDITION OF THE DEVELOPMENT OF STUDENTS

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Annotation. *Purpose:* to determine the state of physical development, physical health and physical fitness of the students. *Material:* the study involved 141 students of I-III courses, of which 84 female students and 57 male students. *Results:* it was found that the best results in the levels of development of physical fitness, physical health and physical fitness have female students of I course and male students of II course. Just below identified the indicators in female students of II course and male students of I course. Worse on all indicators were the results of the students of III year. The students of III year decrease visits physical education classes and motivating them. Students of course I identified five statistically significant generalized factors whose contribution to the total variance of the sample was 70.4 %. *Conclusions:* insufficient level of physical fitness and physical activity suggests a sedentary lifestyle and will require a revision of curricula for physical education based on their focus and saturation of the content material. **Keywords:** *correlation, capacity, physical, motivated, student.*

Introduction

Nowadays youth's health is influenced by factors, which earlier were either ineffective or unknown at all; especially it concerns teenagers or youngsters. In particular, we mean reduction of physical load and increasing of nervous-psychological, informational overload, quick expansion of harmful habits among youth. One of main reasons of students' morbidity insufficient organization of educational process in higher education system is considered to be, which results in overstraining of nervous system and prevents from creation of proper conditions for satisfaction of demands in self-cognition, self-perfection and self-realization [1, 2]. Owing to overloading with educational process most of students suffer from deficit of motion functioning. Their health is also influenced by absence of skills in organization of effective studying, health-related leisure and correct eating [6, 8, 9, 12, 14].

Thus, main purposes of children's, teenagers' and youngsters' health related education can be the following: increasing of motion functioning; improvement of quality of academic physical culture lessons and sport trainings; improvement of educational process, considering hygienic requirements and mastering of principles of organism's hardening; provision of rational studying and labor functioning, which shall be scientifically grounded; increasing of communication culture [3, 10, 11, 13, 15].

Realization of the mentioned above targets is possible only under conditions of coordination of all governmental-public links' actions, which have any concern to youth.

Purpose, tasks of the work, material and methods

The purpose of the work is determination of physical condition and physical workability, of students' physical readiness.

The tasks of the work are: with the help of correlation analysis to determine interconnection between indicators of physical and functional condition.

Results of the research

In order to determine students' physical condition and physical workability, levels of their physical readiness and physical fitness we carried out correlation analysis. Results of correlation analysis permit to estimate interconnections between all indicators. Interconnection of indicators was characterized and determined with correlation coefficients, digital value of which was within from 0 to 1.0. In practice it is commonly accepted to think that degree of connection, videlicet: from 0.00 to 0.30 – is weak; from 0.31 to 0.50 – moderate and from 0.60 to 1.0 – high.

The research resulted in the fact that in case of 1st year girl students (29) persons) there is high correlation level between the following indicators: long jump, conditioning speed power abilities and shuttle run, which characterizes coordination abilities (- 0.634); pressing ups in lying position, showing power endurance and long jump – girl students' speed power abilities - (0.615); between indicators of skipping (strength) and torso bending, characterizing flexibility (0.666); indicators of waist circumference and body weight (0.629), indicators of hip circumference and weight (0.683), showing proportionality of constitution or on the contrary weight problems; between indicators of heart beats rate (HBR) after 20 squatting and HBR before load, which show physical condition and functional state of girl students (- 0.608); between HBR parameters after rest and after 20 squatting (0.772), which characterize health and motion fitness; between indicators of hip and chest circumferences (0,626), which show proportionality or non proportionality of body constitution.

These indicators witness about insufficient level of physical condition and motion fitness of 1st year girl students and require greater attention to development of speed-power, coordination abilities, power endurance and flexibility at physical culture trainings.

In case of 1st year boy students (17 persons) high correlation was determined between the following indicators: weight and length of body (0.713); width of shoulders and length of body (0.887); width of shoulders and weight of

body (0.690); circumference of thighs and weight of body (0.670); between chest circumference and 30 meters run indicators, which condition quickness (0.606); HBR after rest indicators and indicators of 1000 meters run, characterizing endurance; HBR after 20 squatting and pressing ups in lying position (0.803). These results witness about insufficient level of power endurance. They include interconnections between: waist circumference and HBR after rest (0.609), circumference of thighs and HBR after rest (0.657) and circumference of thighs and width of shoulders (0.763). Considering these indicators we should make conclusion about insufficient level of not only first year boy students' physical condition but also about their unsatisfactory physical readiness.

In case of 2nd year girl students (24 persons) high correlation was determined between the following indicators: shuttle run and 30 meters run (0.764), which characterize coordination and quickness; shuttle run and 100 meters run (0.762), conditioning coordination and quickness; long jump, which characterizes speed-power abilities and 100 meter run (0.656), which show girl students' quickness; connection between indicators of 500 meters run and 100 meters run (0.664), conditioning endurance and quickness of girl students; between indicators of rising legs to horizontal bar, showing coordination, and 100 meters run (-0.648), characterizing girl students quickness and strength. All above mentioned results witness about insufficient physical condition of 2nd year girl students, improper level of physical fitness and require appropriate correction of physical education trainings' content. Besides, we registered high correlation between long jump results and shuttle run (-0.724), which show speed-power and coordination abilities; between 500 meters run and shuttle run (0.704), characterizing endurance and coordination; between rising of legs to horizontal bar and shuttle run (-0.720), (coordination); between pressing ups in lying position and shuttle run (-0.717) special endurance and coordination). In connection with the fact that indicators, which condition girl students' coordination, have strong correlation practically with all other results, we can make conclusion about low level of their physical condition, first of all of coordination abilities, and about insufficient physical fitness of 2nd year girl students.

In case of 2nd year boy students (19 persons) we found high correlation of the following indicators: body weight and body length (0.806); parameters of complex power exercise, showing strength and long jump, determining students' speed-power abilities (0.659); chest circumference and body weight (0.605); indicators of HBR after 20 squatting and HBR before load, characterizing organism's functional state (0.635); HBR after rest and HBR before load (0.620); between waist and chest circumference (0.663). Results of our researches witness about insufficient physical condition of 2nd year boy students.

In case of 3rd year girl students (31 person) high correlation was registered between the following indicators: 100 meter run and 30 meters run (0.816), (girl students' quickness); between results of shuttle run and 30 meters run (0.691), (coordination and quickness); long jump, characterizing speed power abilities, and 30 meters run (0.636) (quickness); between shuttle run results and 100 meters run (also coordination and quickness of 3rd year girl students) (0.766); close connection was found between indicators of long jump and shuttle run (-0.610), (speed-power and coordination abilities). In our opinion insufficient coordination of 3rd year girl students again depends on their psycho-emotional tension, connected with huge scope of academic load and absence of motion functioning.

High correlations were found also between parameters, which characterize proportionality of body constitution, videlicet: hips circumference and body weight (0.708); between parameters, conditioning girl students' quickness (500 meters and 30 meters run) (0.618); between results of complex power exercise and 30 meters run (-0.634), showing girl students power and quickness; between indicators of 500 and 100 meters run and (0.816) –girl students' quickness; between pressing ups results and 100 meters run (-0.610), characterizing special endurance and quickness; between parameters of complex-power exercise and 100 meters run (-0.633), 500 meters run and shuttle run (0.638), characterizing quickness and coordination; between 500 meter run indicators and long jump (-0.704), as well as between complex-power exercise and long jump (0.624), (quickness, strength and speed power abilities). Also, in the course of the research we found high correlation connections between Genchi's test and test of Shtange (0.832), showing physical fitness and physical workability of 3rd year girl students.

Thus, in the process of our researches we determined that physical fitness and physical workability of 3rd year girl students were insufficient.

In case of 3rd year boy students (21 person) high correlation connection was registered between the following indicators: body weight and length (0.702); 100 and 30 meters run (0.730); shuttle run and 30 meters run (0.638); rising of legs up to horizontal bar and 30 meters run (-0.638); shuttle run and 100 meter run (0.789); long jump and 100 meter run (-0.732); rising of legs up to horizontal bar and 100 meters run (-0.682); pressing ups in lying position and 100 meters run (-0.706); complex-power exercise and 100 meters run (-0.679); jump and shuttle run (-0.866). These indicators condition level of quickness, coordination, strength and speed-power abilities. The most expressive are results, which point at insufficient level of boy students' quickness and coordination. Besides, we also determined parameters, which condition non proportionality of students' body constitution. High correlation we registered between such indicators as: 100 meters run and shuttle run (0.631); rising of legs up to horizontal bar and shuttle run (-0.795); skipping and shuttle run (-0.710); pressing ups in lying position and shuttle run (-0.741); between 1000 meters run and long jump (-0.616); rising of legs up to horizontal bar and long jump (0.651); between indicators of skipping and long jump (0.651); between parameters of pressing ups in lying position and long jump (0.670). The determined interconnections, to be more exact their results, witness about level of coordination, quickness, speed power abilities, strength, flexibility, endurance and special endurance. Like in case with 3rd year girl students the 3rd year boy students have the worst coordination and quickness. The determined high correlation connections between results, which were obtained in the process of our research, condition low level of strength, speed power abilities, coordination and

flexibility that witness about insufficient physical fitness of 3rd year boy students. Besides, we determined low level of physical fitness and non proportionality of morphological functional processes.

In order to work out targeted program of health related gymnastics we carried out factorial analysis of pedagogic indicators, which were registered among 1st-3rd year students in the process of pedagogic experiment. As a result of factorial analysis, for 1st year students we specified five statistically significant generalized factors, contribution of which in total dispersion of sample was 70.4% [4].

The offered by us methodic stipulates application of targeted means, methods and forms of organization of physical culture lessons for 1st-3rd year students.

According to results of factorial analysis, physical culture trainings at 1st year of studying shall be oriented on increasing of physical condition and physical workability of students, on strengthening of their health and physical readiness for future profession. Physical readiness stipulates, first of all, progressing of the following physical qualities: quickness, coordination, speed-power, endurance, power endurance and strength.

In the process of physical culture trainings of 2nd year students it is necessary to pay attention also on increasing their physical fitness, meaning development of such students' qualities as coordination, speed-power abilities, endurance and power endurance, strength. Besides, trainings, oriented on students' physical development, improvement of health and workability shall be considered.

Trainings of 3rd year students shall include means of health related gymnastics, oriented on rising of physical fitness level (especially development of quickness and endurance, physical workability, physical condition and health.

With development of structure of educational process with the help of health related gymnastics' means we considered the following methodic principles: grounded planning and orientation of educational process, interconnection and unity of theoretical, methodic and practical training of students, considering their health, accessible level of difficulties in trainings on physical culture, acquiring of motion skills and mastering of physical exercises' technique, ensuring of high level of students' motivation for physical culture practicing and strive for students' maximal activity during trainings, implementation of innovative technologies in educational process and ensuring it with sufficient quantity of reliable sport equipment [5].

Conclusions:

1. Comparison of correlation analysis results of 1-3rd years girl and boy students showed that the best indicators in levels of physical fitness, physical workability and physical condition were manifested by 1st year girl students and 2nd year boy students. To some extent lower indicators were shown by 2nd year girl students and 1st year boy students. The worst were results of 3rd year students. In our opinion it is connected with worse attendance of physical culture trainings and worse motivation for them. Just 3rd year students have greater scope of educational load; they determine personal interests and life views; most of them start to solve the problem of future employment. That is why physical culture instructors shall consider these factors and do their best for improvement of qualitative level of physical culture trainings with the help of modern technologies.

2. In the course of experiment the obtained results witness effectiveness of worked out by us methodic, implementation of which facilitated substantial improvement of experimental group students' physical workability, physical fitness, facilitated improvement of students' health, students' involving in healthy life style and further physical progressing. Besides, in our researches we found the following:

- the mastered motion skills were characterized by high indicators of strength and variability in different situations;

- implementation of the mentioned above methodic permitted for students to creatively use tasks of instructor during physical culture classes; students awareness of usefulness and efficiency of trainings appeared that resulted in more enthusiastic attitude to physical culture and improvement of attendance.

The prospects of further researches imply studying of other youth's health related problems and formation of steady motivation for physical culture practicing.

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