

DETERMINATION OF INDEXES OF PSYCHOPHYSIOLOGY QUALITIES FOR THE STUDENTS OF UNIVERSITIES OF DIFFERENT COURSES THAT ENGAGE IN FUTSAL IN THE PROCESS OF EXTRACURRICULAR WORK

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Annotation. *Purpose:* to identify psychophysiological qualities of football players' students. *Material:* the study involved 128 students aged 17 to 22 years. The technique used for assessment the level of functional mobility of nervous processes in terms of the maximum speed of information processing. Each student performed the test three times, of which recorded the best result. *Results:* indicators identified characteristics of higher nervous activity. Values of the latent period of a simple visual-motor reactions, select one of the three signals, the latent period of the reaction of selecting two of the three signals. *Conclusions:* when planning training activities should consider the dynamics of psychophysiological qualities of students. Notes that extracurricular classes have a great impact on the health and physical condition of students.

Key words: students, futsal, training, physical qualities, preparation, abilities, skills.

Introduction

It is known that students' organisms are greatly influenced by physical education trainings. Programs and plans of different universities stipulate distribution of academic hours so that motion functioning's trainings should be varied depending on orientation of future specialists' preparation. In this connection distribution of physical culture classes is carried out not always so that students would have opportunity to train different kinds of physical functioning and participate comprehensively in sport students' life. That is why in the process of academic work regular practicing of sports and different physical exercises is a necessary element of comprehensive preparation of future specialists. In this connection specially important are those trainings, which are carried out in extra-curriculum time and do not touch on main program of future specialists' teaching at higher educational establishments. Exactly such extra curriculum trainings render great influence on health and physical condition of students. Considering opinion of a number of authors, practicing of different outdoor games has own peculiarities [2, 3, 5, 9, 14, 18]. Among them football takes certain place [19-27]. For example, it is necessary to consider individual features of every student for maximal realization of task of every training as well as in general strengthening of every trainee's organism [2, 5, 9, 14]. The present research permits to objectively judge about psycho-physiological features of every trainee and group in general. In our research, for determination of functional condition of supreme nervous functioning we used methodic approach of N.V. Makarenko, which he used for evaluation of functional mobility of nervous processes (FMNP) by indicators of maximal velocity of information's processing. Reliability of this methodic (N.V. Makarenko et al., 1984) was grounded by a number of experiments, which were conducted with participation of adults and children [10, 11].

Purpose, tasks of the work, material and methods

The purpose of the research is determination of psycho-physiological indicators of university students, who practice indoor football in extra-curriculum time.

The methods of the research: analysis of literature sources and experience of leading specialists in field of physical education, pedagogic, physiology, of indoor football coaches as well as experimental methodic of research of psycho-physiological indicators with device "Diagnost 1".

With the help of "Diagnost 1" we determined latent period of simple visual-motor response and period of choosing of one from two or three signals. FMNP indicator is determined by measuring of maximal admissible for every tested approximating in time of advanced and delayed irritators. This indicator is a function of nervous system, which depends on sum of characteristics in time of both nervous processes, thus it objectively reflects level of their functional mobility.

Results of the research

In table 1 we presented psycho-physiological indicators of university students, who practice indoor football in extra-curriculum time. In "optimal" mode it is possible to receive values of latent period of simple visual-motor response (LP SVMR), response of choosing of one signal from three (LP RC 1-3) and latent period of choosing of two signals from three (LP RC 2-3). With determining of latent periods in tests "LP RC 1-3" and "LP RC 2-3" we used mode 30 signals with exposition 0.9 sec. In all exercises we chose objective irritator. In the course of sportsmen's testing it was necessary to consider the least value of latent period. Every student fulfilled test three times, the best result of which was registered. Such approach was grounded by a number of researches of professor N.V. Makarenko [10, 11], who recommends for determination of individual sensor-motor responses to use three repetitions of every test and the best result from three attempts – for objective evaluation of these abilities.

Indicators of mean values of latent period (M) in test SVMR were improved. Between data of 1st and 2nd year students, 2nd sport degree and 3rd year students, 1st and 3rd year students – differences were not statistically confident ($p>0.05$). With increasing of period of studying at HEE results improve and for 3rd year students become equal– 222.42 m.sec; for 2nd year students– 245.30 m.sec. and for 1st year students – 250.50 m.sec. With it mean value of motor

response (Mmr) in the above described test was for 1st, 2nd and 3rd year students: 163.28 m.sec; 146.53 m.sec and 157.98 m.sec. accordingly. For example, in compliance with methodic and commonly accepted standards for this test, 3rd year students fulfill test SVMR at level above middle 183-226 m.sec. Younger students – 2nd and 1st years were at middle level of this test - 227-292 m.sec). In control exercise “ LP RC 1-3” the best indicator was demonstrated by 1st year students with mean result of latent period (M) of – 354.31 m.sec. With it mean value of motor response (Mmr) is 129.53 m.sec. Differences were statistically insignificant ($p>0.05$) between indicators of 1st and 2nd year students as well as between 1st and 3rd years students. 3rd year students showed results 363.28 m.sec, 2nd year students – 394.33 m.sec. Indicators of motor response’s mean value were 146.81 m.sec. and 131.58 m.sec. accordingly. In this exercise indicators were confidently different ($p<0.05$) between 3rd and 2nd year students.

In test “LP RC 1-3” the tested demonstrated mean level of this control exercise 324-398 m.sec. In test “LP RC 2-3” 1st year students showed the best result (M) – 364.46 m.sec. Statistically insignificantly ($p>0.05$) results were registered at all stages of training. Total indicator of 3rd year students was – 425.15 m.sec, of 2nd year students 461.23 m.sec. Mean value of 3rd, 2nd and 1st year students motor responses was accordingly: 144.6 m.sec.; 110.93 m.sec. and 140.78 m.sec. Indicators of 1st year students were at level above middle (336-390 m.sec.). 2nd and 3rd year students fulfilled this testing at middle level (391-463 m.sec.). Individual features are determined by indicators of FMNP and NPS (nervous processes’ strength) of quantity and quality of processed information. Test’s task is changed automatically in this mode with correct answer by 20 m.sec.; after incorrect – increases by 20 m.sec. During fulfillment of this test, ranges of variations of the tested were within values from 900 to 40 m.sec. The kind of irritator is objective.

Table 1

Psycho-physiological indicators of students, who practice indoor football

Nos	Psycho-physiological features	3 rd year		p	2 nd year		p	1 st year		p	3 rd year	
		\bar{x}	m		\bar{x}	m		\bar{x}	m		\bar{x}	m
1	SVMR: 1) M (m.sec.)	222.42	8.14	>0.05	245.30	7.67	>0.05	250.50	5.22	>0.05	222.42	8.14
	2) Mmr (m.sec.)	157.98	0.31	>0.05	146.53	2.06	>0.05	163.28	4.01	>0.05	157.98	0.31
2	RC 1-3: 1) M (m.sec.)	363.28	0.77	<0.05	394.33	0.32	>0.05	354.31	3.47	>0.05	363.28	0.77
	2) Mmr (m.sec.)	146.81	1.98	<0.05	131.58	0.89	>0.05	129.53	1.22	>0.05	146.81	1.98
3	RC 2-3: 1) M (m.sec.)	425.15	2.05	>0.05	461.23	1.12	>0.05	364.46	9.06	>0.05	425.15	2.05
	2) Mmr (m.sec.)	144.6	0.44	>0.05	110.93	0.22	>0.05	140.78	0.71	>0.05	144.6	0.44
4	<u>FMNP (feedback mode):</u>											
	1) T (sec)	58.49	2.07	>0.05	74.7	2.03	>0.05	63.6	1.83	>0.05	58.49	2.07
	2) T outp. at min exposition (m.sec.)	48.16	0.32	>0.05	43.9	0.78	>0.05	46.45	0.09	>0.05	48.16	0.32
5	<u>NPS (feedback mode):</u>											
	1) Q-ty of signals for 5 min	675.55	7.18	>0.05	703.43	2.36	>0.05	597.63	7.74	>0.05	675.55	7.18
	2) T outp. at min exposition (m.sec.)	112.29	2.01	>0.05	111.39	1.48	>0.05	69.5	1.12	>0.05	112.29	2.01
6	<u>RMO (response to moving object):</u>											
	1) Q-ty of precise responses (m.sec.)	3.33	0.61	>0.05	3.88	0.83	>0.05	4.83	0.71	>0.05	3.33	0.61
	2) Q-ty of advanced deviations (m.sec.)	18.5	0.09	>0.05	10.07	1.01	>0.05	13.87	0.02	>0.05	18.5	0.09
	3) Q-ty of delayed deviations (m.sec.)	8.38	1.72	>0.05	7.75	0.9	>0.05	11.17	1.02	>0.05	8.38	1.72
7	Tapping test (q-ty of strikes for 30 sec.)	212.86	0.52	<0.05	206.95	1.04	>0.05	203.2	0.81	>0.05	212.86	0.52

When fulfilling test for functional mobility of nervous processes FMNP (feedback mode) students demonstrated the following results. The best time of this test's fulfillment were shown by 3rd year students – 58.49 sec. that corresponds to level above middle (54.1-60.4 sec). 2nd and 1st year students showed results– 74.67sec. and 63.6 sec. accordingly that was level below middle of 2nd year students (69.2-75.9 sec.) and middle level of 1st year students (60.5-69.1 sec.). Also we registered statistically insignificant ($p>0.05$) results of all years of study.

Data of time of coming to minimal exposition of 3rd, 2nd and 1st year students were accordingly: 48.16 m.sec; 43.9 m.sec. and 46.45 m.sec.

Mode of nervous processes' strength "NPS" (workability of brain) determines: to what quantity of signals the tested is able to respond for 5 minutes. Students' indicators in this exercise were the following: 1st degree - 675.55 signals; 2nd degree – 703.42 signals and 3rd degree – 597.63. Results of NPS test have statistically insignificant value ($p>0.05$) at every year of studying. Time of coming to minimal exposition is: 3rd year - 112.29 m.sec.; 2nd year – 111.39 m.sec. and 1st year – 69.5 m.sec.

With determining of response to moving object "RMO" we registered quantity of precise responses as well as delayed and advanced deviations. Determining of precise responses is increased by statistically insignificant ($p>0.05$) value from 3rd to 1st year of study and achieves maximum indicators at 3rd year (3.33 m.sec.). Indicators of precise responses of 2nd and 1st year students were 3.88 m.sec. and 4.83 m.sec. accordingly. Quantity of delayed and advanced responses were statistically insignificant ($p>0.05$). Third year students had indicator 18.5 m.sec. of advanced and 8.38 m.sec. of delayed deviations. 2nd year students – 10.07 m.sec. of advanced and 7.75m.sec. of delayed deviations. 3rd year students demonstrated result in advanced deviations – 13.87 m.sec. and 11.17m.sec. of delayed.

In tapping test for 30 seconds 3rd year students had the best result – 212.86 strikes. In this control exercise difference between 3rd and 2nd degrees' trainees was confident ($p<0,05$) for 2nd year students result was – 206.95 strikes for 30 seconds. Difference between indicators of 2nd and 1st year students were statistically insignificant as well as between 3rd and 1st year students, where 1st year students fulfilled in average 203.2 strikes for 30 seconds.

Conclusions:

1. Students of 1st-3rd years of study during all academic year demonstrated achieving of peak results at different stages in extra-curriculum trainings. In the present work we experimentally found changes in indicators of students' competition functioning.

2. With planning of physical education process it is recommended to use the best in academic year results of testing of psycho-physiological indicators of students of different years of study.

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