

## ON PROGRAM OF EXTRACURRICULAR MINI-FOOTBALL TRAINING PROGRAM FOR UNIVERSITY GIRL STUDENTS

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**Abstract.** The research is aimed at working out of efficient program for first year girl students' health improvement, which is based on mini-football means' application in extra-curricular activities. *Purpose:* to substantiate the program of one year mini-football trainings for girl students. *Material:* one year experiment envisaged participation of 18-20 years' age 56 first year girl students (two groups, 28 people each). The girl students of every group endured different physical loads: group 1 - 70% of specific means and 30% of non-specific; group 2 - 65% of specific means and 35% of non specific. *Results:* we worked one year efficient program for girl students' health improvement, which was based on application of mini-football specific and non specific means' optimal correlation in extracurricular trainings. We found that optimal correlation of specific and non-specific training loads was 70:30 (%). Practically equal level of workability in both groups was ensured by the following: in group 1 – at the account of special endurance; in group 2 – by means of general physical training. *Conclusions:* we recommend the program of one-year mini-football trainings, which ensures improvement of physical and technical fitness, rising of girl students organism's and health indicators.

**Key words:** health, program, mini-football, girl students, training loads.

### Introduction

Analysis of leading scientists' and higher school specialists' materials shows low level of university girl students' health, physical and functional fitness [4, 6, 15]. It was found that one of directions of such unsatisfactory state recovering is practicing of different kinds of sports' extracurricular trainings [4, 14]. As it is known, the most attractive for youth kind of sports is football. Recent years mini-football has been acquiring popularity. For men there are experimentally grounded main principles of mini-football training process. For girls such principles are in the beginning of substantiation process [1, 2, 6, 12]. The authors found that physical qualities' level of modern girls is very low. They can not fulfill elementary exercises of applied character. That is why, searching of new methodic, program and exercises, which would permit for this contingent to quicker adapt to studying in higher educational establishment and be ready for future maternity, is rather relevant.

In other works it was determined that one of basic principles of training process is content of annual training cycle [3, 5]. This content is especially important for girl students, who do not practice sports and only start training after entering university. Importance of girl students' physiological characteristics in mini football training process consideration was noted in works of Clemente F. M. & Nikolaidis P. [18]. Soares B. M. et al. Found that anthropometrical indicators and sportswomen's body weight are of certain significance in preparation for mini football competitions [30]. Among other researches devoted to problems of girls' mini football trainings we can mark out the following: usage of trainings for prophylaxis of carriage disorders [24, 27], increase of sportswomen's workability at the account of optimization of aerobic and anaerobic loads' correlation [16, 28], Determination of fatigue index according to specific psychological profile of sportswomen [17, 21], determination of lower limbs' movements' bio-mechanical indicators [29], means of heart beats rate calculation depending on character of loads [19], determination of quickness, speed and acceleration values of mini football and classis football sportswomen [31]. The authors also note that it is necessary to apply modern training means [20], to increase general health [22, 25], implementation of health related technologies in educational process [23].

In our previous researches we studied the following questions: rational building of higher educational establishments' students' training process; specific features of circle mini football trainings' influence on girl students' physical fitness; changes of girls' anthropometrical indicators in puberty period. Besides, we found psychological components of mini football means in stimulation of universities' students' motor functioning and substantiated mini

football special training program for higher educational establishments' girl students with usage of informational technologies [7-11].

Nowadays the most important and urgent is the question of specific and non specific training means' correlation. Choice of rational correlation to large extent influences o rising of girl students' physical health level. Besides, the question about girl students sportsmanship's growing as well as interest to training is still discussible.

*Hypothesis:* we assumed that working out of one year extracurricular mini football training program got university girl students and its application in practice shall be based on usage of optimal specific and non specific means' correlation. Such approach will facilitate improvement of girls' physical condition and their effective preparation for future maternity and professional functioning.

*The purpose:* substantiation of one year mini football training program for first year girl students, in order to ensure their high level of physical and technical fitness, to improve organism's and health's functional state indicators.

#### **Material and methods**

*Participants:* one year experiment envisaged participation of 18-20 years' age 56 first year girl students (two groups, 28 people each). All participants gave consent for participation in the researches.

*Organization of the research:* we organized one-year comparative pedagogic experiment, in which two groups of first year university girl students participated. Before entering the university these girl students did not practice sports.

In extracurricular time girl students of both groups fulfilled different correlations of physical loads: groups 1 — 70% of specific means and 30% of non specific; group 2 - 65% of specific means and 35% of non specific.

Trainings were conducted four times a week in extracurricular time during ten months (annual cycle) at the beginning, in the middle (after 5 months) and at the end (after ten months) of experiment we fulfilled testing of girl students' physical, technical and functional fitness. In the process of the research, on the base of commonly accepted control tests [3, 26] we studied indicators of their main motor qualities (quickness, speed-power, special and general endurance, relative strength of 5 leg's muscular groups), technical fitness and organism's functional state and health (using tests of Stanger, Genchi, Romberg; vital capacity of lungs and Rouffiet's index).

Reaction of girl students' organism to physical load was assessed on the base of questioning and pedagogic observations.

*Statistical analysis:* the received material was statistically processed with the help of Statistika 10.0 program. Confidence of differences between indicators of samples was checked with Student's criterion and was regarded as statistically significant at  $p < 0.05$ .

#### **Results of the research**

One year experiment stipulated usage of different correlation of specific and non specific training means in both groups. The mentioned distribution of loads was based on results of researches of I.G. Maksymenko [3, 26]. The author substantiated effectiveness of the following specific and non specific training means' application in mini football: from 14 to 15 years' age – 55:45 (%); from 15 to 16 years' age – 60:40 (%); from 16 to 17 years' age – 65:35 (%). In football specific training means are exercises for mastering techniques and tactic, official and friendly games. Non specific training means are exercises for improvement of motor qualities (quickness, strength, dexterity, endurance, flexibility) and speed-power qualities (which are fulfilled without ball). Appropriate specific and non specific training means were fulfilled by both groups' girl students during one year experiment according to this classification.

At the beginning of one-year experiment we tested physical, technical and functional fitness. By the results of this testing no statistically significant differences were found between indicators of both groups.

Four times a week trainings in extracurricular time during 5 months resulted in certain shifts in physical, technical and functional fitness of experimental group girl students. Comparison of testing data of both groups' sportswomen permits to determine the following: group 1 has advantage in tests "30 meters' run from high start" and "special endurance" ( $p < 0.05$ ). Between indicators of strength, speed-power qualities and general endurance there were no statistically significant differences.

Similar results were observed in comparing of technical fitness tests. In this test group 1 girl students had advantage in juggling with ball and kicks for accuracy ( $p < 0.05$ ). In other exercises there were no substantial differences between groups. After five months of experiment, by functional fitness indicators and health state group

1 became better ( $p < 0,05$ ). Only by results of Romberg's test we did not registered statistically significant differences between groups. According to plan of comparative experiment with both groups' sportswomen we fulfilled 160 trainings. Control testing of group 1 permitted to find the value of shifts in levels of girl students' physical and technical fitness at the end of experiment (see table 1). As we can see in the table, at the end of experiment, comparing with its beginning, in this group there was noticeable increment of physical and technical fitness indicators ( $p < 0,05$ ). Similar positive changes were registered in organism's functional state and health girl students (see table 2).

**Table 1.** Changes in physical and technical fitness levels in group 1 girl students at the end of comparative experiment

Control exercises	At the beginning of experiment		p	At the end of experiment		Changes
	$\bar{X}$	M		$\bar{X}$	m	
30 meters' run from high start, sec.	5.38	0.02	<0.05	5.0	0.01	-0.38
High jump from the spot, cm	36.82	0.26	<0.05	42.84	0.18	+6.02
Indicator of lower limb's five muscular groups' relative strength, kg	3.67	0.04	<0.05	4.18	0.05	+0.51
Special endurance (run 7×50 m), sec.	99.05	0.37	<0.05	92.79	0.25	-6.26
General endurance (Cooper's test), m	199.2	18.63	<0.05	2169.5	17.52	+179.3
30 meters' dribbling, sec.	6.38	0.02	<0.05	5.81	0.02	-0.57
Juggling with ball, times per min. <sup>-1</sup>	5.67	0.02	<0.05	11.2	0.01	+5.53
Kicks for accuracy, quantity of times	2.98	0.01	<0.05	4.25	0.01	+1.27
Dribbling, dribbling around stands, kick in goal, sec.	8.79	0.02	<0.05	8.17	0.02	-0.62
Kicks for distance, m	46.15	1.07	<0.05	55/95	1.14	+9.8

Notes: p – Student's criterion

**Table 2.** Changes in indicators of health and functional state of group 1 girl students at the end of comparative experiment

Control exercises	At the beginning of experiment		p	At the end of experiment		Changes
	$\bar{X}$	m		$\bar{X}$	m	
Vital capacity of lungs, ml	3016.7	11.15	<0.05	3411.9	10.27	+395.2
Stanger's test, sec.	42.8	0.24	<0.05	57.4	0.19	+14.6
Genchi's test, sec.	21.2	0.11	<0.05	36.7	0.11	+15.5
Rouffiet's index, conv.un.	15.8	0.11	<0.05	7.1	0.09	-8.7
Romberg's test, sec.	14.8	0.05	<0.05	33.9	0.08	+19.1

Notes: p – Student's criterion

Appropriate testing of physical, technical and functional fitness in group2 at the end of comparative experiment showed that 160 trainings resulted in positive changes by all control exercises. With it statistically significant differences between initial and final indicators were not observed only in tests “30 meters’ run from high start” and “Special endurance”.

Effectiveness of specific and non specific training means’ correlation in girl student’s initial training is proved by comparison of physical, technical and functional fitness indicators of both groups at the end of annual cycle (160 trainings). It was found that for the period of one year experiment girl students of group1 achieved better indicators. They demonstrated statistically significant prevalence over group 2 girl students by results of 30 meters’ run from high start, high jump from the spot and 7×50 meters’ run. Indicators of general endurance was also better – Cooper’s test ( $p>0.05$ ). Practically the same was the total figure of relative strength of lower limb’s five muscles groups ( $p>0.05$ ). Group 1 sportswomen demonstrated noticeable advantage over group 2 in indicators of technical fitness ( $p<0.05$ ). Analysis of organism’s functional state and health of both groups’ girl students at the end of experiment witnessed higher level of fitness in group 1. It is proved by statistically significant differences between all tests except Rouffiet’s index.

The presented above material permits to state that in annual cycle of girl students’ mini football training correlation of specific and non specific training means in proportion 70:30 (%) is the most effective. Such approach permitted to support or even improves certain indicators of group 1 girl students’ physical fitness at mini football trainings.

### **Discussion**

Recent years the mentioned above problem has acquired especial relevance for universities’ girl students – future mothers. It is of common knowledge that one of the most important factors of involvement in healthy life style, health strengthening, prophylaxis of harmful habits and preparation for future maternity is sports practicing; in particular, mini football trainings, which, as on today, have been becoming still more popular in the world owing to its democratic character [8, 12-14]. Analysis of literature data and generalization of practical specialists’ experience point at the fact that as on today there is a number of problems in respect of rising of effectiveness of mini football trainings for health strengthening of universities’ girl students [3, 5, 16-20, 27-31]. Shortening of physical culture academic hours at higher educational establishments renders negative influence on the situation as well as the absence of single, scientifically grounded health improvement system and girl students’ preparation for future professional functioning; insufficient approaches to information technologies’ usage in students’ mastering physical exercises.

The determined by us advantage of group 1 girl students in comparison with group 2 by most of indicators is explained by the following: higher volume of non specific training means in group 2 facilitated improvement of their indicators of strength, general endurance and workability. But these indicators do not significantly differ ( $p>0.05$ ) from the same indicators of group 1.

In the age of 17-18 years main systems of girls’ organism are in already formed state [1, 4, 7, 9]. That is why difference in specific and non specific means did not influence noticeably on strength and general endurance. Practically equal level of workability in both groups was ensured: in group 1 at the account of special endurance and in group 2 – at the account of general physical fitness.

Separately it should be noted that materials of our research once again proved specialists’ conclusions about favorable influence of football practicing on different contingents of healthy youth and students with health problems [1, 2, 6]. The substantiated in one-year experiment correlation of specific and non specific training means in proportion 70:30 (%) does not substantially differ from loads’ volumes of young sportsmen, who specialize in classic football [3].

### **Conclusions**

1. It has been determined that one of direction of girl students’ unsatisfactory health condition’s improvement is application of different kinds of sports extracurricular practicing.

2. By results of one-year formation experiment we substantiated optimal program of extracurricular mini football trainings, which stipulates usage of specific and non specific training loads in proportion 70:30 (%). Implementation of the worked out extracurricular mini football training program for university girl students in practice will facilitated improvement of their physical and technical fitness, indicators of organism’s functional state and health, effective preparation for future maternity and professional functioning.

The prospects of further researches imply determination of optimal structure of micro-cycles construction in respect to university girl students' extracurricular mini football trainings.

#### Acknowledgements

The work has been fulfilled according to combined plan of scientific research works in sphere of physical culture and sports for 2011 – 2015 within complex topic 2.4 “Theoretical-methodic principles of individualization in physical education and sports” (state registration number 0112U002001); and in the frames of scientific-research work for 2015 – 2016 “Theoretical-methodic principles of application of means of informational, pedagogic, medical-biological orientation for motor and spiritual development and formation of healthy life style” (state registration number 0115U004036).

#### Conflict of interests

The authors declare that there is no conflict of interests.

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**Cite this article as:** Tamozhanskaya A.V., Shkola O.M. On program of extracurricular mini-football training program for university girl students. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 2016;4:35–41. doi:10.15561/18189172.2016.0406

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Received: 17.07.2016

Accepted: 26.07.2016; Published: 30.08.2016