

EFFECT OF GYMNASTICS PROGRAM ON MUSCLE STRENGTH TRANSFORMATION

(Research note)

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Abstract

This research includes investigations in 132 respondents aged 11 from Novi Pazar. On this occasion, we present the results of respondents who are involved in the training process in karate clubs. The experimental treatment was applied upon the completion of the initial check, and it covered the basic program functions of Artistic gymnastics for 48 hours, with two sessions per week for six months. Upon completion of the final measurement was performed and the results applied to the program Gymfitschool on participants involved in karate sections have shown that there is a positive influence and transform the power-motor skills. Based on the results of our basic program functions Artistic gymnastic for 48 hours, with two sessions per week for six months can be recommended and other sports that have a section like this.

Keywords: *students, experimental training process, program Gym fit school, initial measurements, final measurements, karate clubs, t-test*

INTRODUCTION

Every scientific field or discipline has its own established methods and procedures used in conducting research. Sport and its area with the character of scientific fields, located between two large groups of social and natural sciences, in most scientific researches is a necessary interdisciplinary approach. "Artistic Gymnastics is now that sport competition reaches with the highest level of artistic achievement. Trend of development in professional sports in general, and artistic gymnastics, the most serious confirms the unpredictability of human possibilities. As a rule, the proof that oppose limits in sport are new, a number of varies exercises that inventors shows in gymnastics competitions". (Petković, Sportski trening, 21).

Motor ability is only one part of the overall mental and physical abilities that are related to the level of development of the latent dimensions of basic human motion, which condition the successful execution of movement, regardless of whether they acquired skills training or not. Strength can be defined as the ability to overcome external loads with muscle strain (Zatsiorsky & Kraemer, 2009). The expression of muscle strength is largely determined by morphological and physiological

factors skeletal muscle tissues and joints of each individual (Radovanović & Ignjatović, 2009). Efficiency of the training process is usually estimated on the basis of the effects of transformational and change certain features of psycho-somatic status at specific time intervals. It is known that the transformational changes psycho-somatic status are influenced by various factors. Some of these factors may be more or less directed and controlled, and certain products of natural growth, which may not be significantly affected.

The subject of this research is motor skill-strength of youth karate players, 11 years old, involved in the training process and competition. Problem of this study is how to determine the impact of the program artistic gymnastics as a basic function of the level of strength in athletes. The aim of the research is to determine the influence of basic facilities of Artistic gymnastics in the transformation of strength in young athletes. On the basis of the defined problem, objects and research goals, the following hypothesis can be formulated as:

H: It is expected to identify significant differences in motor skill -strength after the application of experimental treatment.

METHODS

The experimental treatment was applied at 132 boys who attended the club sections of karate in Novi Pazar. The experimental treatment contains The Program of basic functions of Artistic gymnastics. The Program is consisting of "A" program (agility polygon), "B" program (small trampoline) and "C" program (gymnastics all-around competition). The program of basic function Artistic gymnastics - Gymfitschool (Mekić, 2009) was realized for a period of 48 hours, with two sessions per week for six months.

Attending this program of experimental treatment, which was realized as an additional content at the beginning of karate training, we expected a positive influence on motor skill strength, which was covered by the following research variables: the endurance in overhand grip pulls up (MSIZ), lifting the trunk on the Swedish bench (MSDT) and raise upper body (MSIT). To determine the differences between the initial and final measurements will be applied t-test for small dependent samples (Petković, 2001).

RESULTS

The results contained in Table 1 indicate that the two variables in the field of strength show statistical significance to the endurance in overhand grip pulls up-MSIZ ($p = 0.000$) and lifting the trunk on the Swedish bench- MSDT ($p = 0.005$), confirming the positive effect of the experimental treatment significance of 100%. For variable raise upper body- MSIT ($p = 0.0743$), the results indicate that there was no statistically significant change after the experimental treatment.

Table 1. The significance of the difference of the initial and final measurements karate players

Variables	In/Fi	N	Mean	SD	t-value	p
MSIZ	Inic.	132	15.11	5.828	-5.749	0.000
	Fin.	132	19.18	5.668		
MSDT	Inic.	132	10.54	3.498	-2.828	0.005
	Fin.	132	11.63	2.722		
MSIT	Inic.	132	39.64	7.044	-1.792	0.074
	Fin.	132	41.13	6.405		

CONCLUSIONS

In intended research was determined the effect of the basic content of Artistic gymnastics on the transformation of strength in karate players and two

variables in the field of strength show statistical significance. The program offered is even greater if contents more varied basic functions of Artistic gymnastics. This program had offered content that karate players practiced agility through a variety of polygons, jumping on trampolines and learn specific exercises on the Floor. This program is a specific program Gymfitschool „gymnastics for non-athletes.“

Based on the results which offered gymnastics program called „Gymfitschool“ which was intended for non-athletes positively and significantly transformed the strength in athletes, and in this way is recommended for use with all other athletes, not just karate experts.

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