
IMPACT OF FUNCTIONAL TRAINING ON THE SPECIFIC OF MIXED MARTIAL ARTS FIGHTERS

Lubomír PAUČÍR, Lubomír BDŽOCH

*Department of Educology of Sports, Faculty of Sports,
University of Presov in Presov, Slovakia*

Key words:

- training process,
- training plan,
- frequency rate,
- combat sport

Abstract:

Functional training (FT) using innovative training methods and tools, has positive impact on the progress of motoric capabilities that are determinative for the performance of sportsmen in the conditions of competitions. The aim of the work is focused on the investigation of the influence of FT on the specific performance of the mixed martial arts fighters and positive impact of FT on the development of the explosive power of lower limbs and advancement of the frequency speed of upper limbs. The evaluation set used in this investigation comprised of 16 fighters from officially registered MMA clubs in Slovakia, out of which 8 were practicing FT (experimental group) and other 8 formed control group, practicing standard (traditional) training. The test battery comprised of tests focused on diagnostic of general and specific motoric performance. The results confirmed positive influence of 6 weeks mezzo-cycle comprising of training micro-cycles which were assembled according to characteristics of fighters of experimental group and was primarily focused on development of specific strength, speed and stability. Implementation of the FT into the training plan of the experimental group resulted into significant advancement of the explosive power of the lower limbs in comparison to control group. Inclusion of the FT into the training process is important for achievement of improved performance; however, it requires professional supervision during the whole period of realization.

INTRODUCTION

The attention of the sports community received a new type of martial art "mixed martial arts" (MMA). It is a mixed martial art, which is among the most widely used and most popular sport now mainly abroad, but it gets the attention already here in Slovakia. Claims for this kind of sport in recent years have increased significantly. Combat sport, which is characterized by the pursuit of a progressive increase performance and thereby improve conditioning, coordination skills put to good training process requirements, leading to the pursuit of continuous improvement of its content, forms and methods, as well as its optimal organization and management. There are various training methods to achieve this development. Availability literature with the issue of systematics and development of fitness and coordination skills in MMA is in Slovakia and in the Czech Republic is very small.

Functional training is a normal part of the world of high-quality sports training. It is a natural complex training, which engages in the activities of the maximum amount of muscle groups in order to achieve optimal adaptation of the organism to a specific sport or physical activity [2]. Brain, which is responsible for muscle activity, perceive motion only as individual activity of a particular muscle group, but as a complex activity. The main objective

is high fitness readiness wrestler (under the natural movements such as running, jump, throw, market, move, lift). Functional training included in their sports training many tennis players, hockey players, soccer players, skiers, athletes and therefore we want to include sports training too. It uses a wide range of training resources (TRX suspension trainer, kettlebells, bosu, fit ball, medicinball, aquahits, ropes, chains) where the emphasis is on perfect technique - accuracy and optimum and maximum speed within the sport.

MMA fighters are among specific population group to which they are placed higher demands on physical fitness and motor performance, and therefore it is important to help deliver better outcomes for wrestling events at home and abroad, but also for training.

THE AIM OF THE WORK

Functional training, using innovative training methods and aids have a positive impact on the development of motor skills, which are determining the performance of athletes in competitive conditions. The research was aimed at clarifying the impact of functional training for specific sports performance training wrestlers Mixed Martial Arts and the appreciation of its positive impact on the development of explosive strength of lower limbs - Hypothesis 1: Applying functional training leads to the development of explosive strength of lower limbs - as well as the development of frequency rate upper extremities - Hypothesis 2: Impact of functional training have increased the frequency rate of upper limb [1].

THE MATERIAL AND THE METHODOLOGY

The sample consisted of 16 wrestlers in MMA officially registered clubs in Slovakia, of which 8 are dedicated functional training (experimental group) and the other half formed the control group, training standard (traditional) way. Test battery consisted of tests for the diagnosis of general and specific physical performance. The research consisted of a 6-week training mesocycle, the content of training microcycle is compiled according to the characteristics wrestlers experimental group and focused mainly on the development of strength, speed and balance specific to mixed martial arts. This program is integrated into the training program 3 times a week. Experimental group, in which the applied experimental procedure training process, proceed with the proposed motion program (Table 1). The motion program was conducted in collaboration with the fitness coach and trainer Pit gym Levoca. In the second group - the control, the training conducted traditional (standard) procedure without application of the proposed functional training. The control group was in the run and passed 3 times a week MMA training after 90 minutes and fitness workout 2-3 times a week for 60 minutes, ie completed 6 weeks 27 hours MMA training and an average of 15 hours fitness training (Table 2).

In both groups the same time tracking. Upon completion of the program, which lasted six weeks, we have tested both clubs and output measurements made.

Table 1. Experimental group 1 (Pit gym Levoca) - preparatory period

	Weekly microcycle
Monday	Vertimax - sprints, dynamic leg strength / strength of the upper extremities
Tuesday	Training MMA - training techniques / Stand up (box, muay thai)
Wednesday	Compensatory exercises - bosu, fitball
Thursday	Training MMA - training techniques / MMA, luta livre, sparring
Friday	Vertimax - dynamic strength of upper limbs / Strength of lower limbs
Saturday	Free day
Sunday	Training MMA- Submission wrestling / Luta livre, ground and pound

(Source: own processing)

Table 2. Control group (MMA top team Kosice) - preparatory period

	Weekly microcycle
Monday	Fitness – strength training
Tuesday	Training MMA – training techniques , sparring
Wednesday	Fitness – individual (strength training)
Thursday	Training MMA - training techniques / MMA, ground and pound
Friday	Training MMA - training techniques on the floor, sparring
Saturday	Free day
Sunday	Free day – individual, run

(Source: own processing)

The preparation of the test battery was mainly for the purpose of diagnosis, through which we wanted to cover specific locomotor performance and selected indicators of fitness and coordination skills MMA fighters. The selection of the independent variables (tests) are based on the structure of sport performance in MMA. We tried yet apply existing knowledge and experience of the available professional literature sources as well as from my own experience. We used standardized, but also some non-standardized (specific) tests that we serve to identify some specific parameters and were sufficient for us.

Specific physical performance tests were designed to determine the level of explosive strength of upper limbs, the detection of speed endurance, reaction and detection of spatial orientation and ability to assess the level of explosive strength of lower limbs. Based mainly on the basic fighting stance and basic kicks, punches and tear down. Individual tests were designed to evaluate the different levels are sufficient for us.

Implementation sports training required to be constructed first, sports performance mastering constituents sports training (stress-relieving, technical, tactical, psychological, or other ingredients) and by aligning these components into a single unit [3].

RESULTS AND CONCLUSIONS

During the training period there is an increase in specific physical performance, which is largely represented itself MMA training. Significant changes occur in the development of general physical performance, with a focus on speed capability. The results confirmed the positive impact of falling 6 - week mesocycle, the content of training microcycle was designed according to the characteristics wrestlers experimental group and focused mainly on the development of specific strength, speed and balance. By incorporating functional training into the training plan has been in the experimental group significantly develop explosive power of the lower limbs compared with the control group, whose training was conducted conventional (standard) procedure, which proved our hypothesis H1. The group performing functional training was also an increase in the frequency rate of the upper extremities, so we can conclude that also confirmed the hypothesis H2.

Confirmed the fact that the file is a graduate of 6 training sessions per week, of which 3 times a week operational training for 6 weeks there have been changes performance and improved performance in various tests.

The results confirmed the positive effect of six week mesocycle, the content of training microcycle is compiled according to the characteristics wrestlers experimental group and focused mainly on the development of specific strength, speed and balance. By incorporating functional training into the training plan experimental group was compared with the control group significantly develop explosive power of the lower extremities which proved our hypothesis 1 and has also been an increase in the frequency rate of the upper extremities, so we can conclude that also confirmed the hypothesis 2.

Based on research on a sample of 8 wrestlers from the club Pit gym and Levoca 8 wrestlers in MMA club's top team Kosice 416 measurements were performed in 13 tests, on which we have come to the following conclusions:

The results of the correlation analysis suggest that there is some correlation between general and specific tests of physical performance. Specific physical performance based on tests of critical movements of the MMA fighters themselves. All assays were measured in both sets of very similar values. In general physical performance tests brought better performance in tests wrestlers Pit gymu Levoca, who were better in all seven tests. Tests specific physical performance achieved wrestlers Pit gymu Levoca better in four of the six tests measured, so we can say that the club Pit gym Levoca made better performances in eleven of the thirteen tests measured.

Based on measured experimental results, we can conclude that the inclusion of functional training into the training process is important to improve the performance, but requires professional guidance throughout the implementation. MMA is one of the most comprehensive combative sports, which places high physical demands on the body. The application of functional elements of training and their involvement in the training process wrestling requires a specific approach. Functional training is intended not only for fans of sports and martial arts, but also in sports training elite athletes of different industries, but also for individuals regardless of fitness and strength and hard work maturity. Functional training is for those who want the utmost to improve their physical fitness highly intensive training program. In combination with corrective exercises aimed at strengthening the core muscles is suitable for all ages.

REFERENCES

1. BDŽOCH, Ľ. (2013) *Vplyv funkčného tréningu na špecifickú výkonnosť zápasníkov mixed martial arts*. Diplomová práca. Prešov: FŠ PU Prešov, 2013. 89 s.
2. BOYLE, M. (2004) *Functional training for sports*. USA : Human Kinetics, 2004, p. 195. ISBN 978-0-7360-4681-7.
3. STARŠÍ, J.& JANČOKOVÁ, Ľ. (2001) *Teória a didaktika športu*. Fakulta humanitných vied Univerzity Mateja Bela, Banská Bystrica, 2001. ISBN 80-8055-504-4.