DOI: https://doi.org/10.37547/mesmj-V7-I2-05 Pages: 51-58

MENTAL ENLIGHTENMENT SCIENTIFIC METHODOLOGICAL JOURNAL
http://mentaljournal- jspu.uz/index.php/mesmj/index

METHODOLOGY FOR IMPROVING THE PHYSICAL FITNESS OF ATHLETES THROUGH CIRCUIT TRAINING IN THE SPORT OF JUDO

UzDJTSU

Associate Professor of the Department of Judo, Sambo Theory and Methodology

Anarbayev Malik Akhmedovich

malikanarbayev@mali.ru

Received: 25.02.26
Accepted: 27.02.26
Published: 01.03.26

ABOUT ARTICLE

Keywords: judo, circuit training, physical training, special training, strength, endurance, circuit training.

Kalit so‘zlar: dzyudo, aylana mashqlari, jismoniy tayyorgarlik, maxsus tayyorgarlik, kuch, chidamlilik, aylana mashqlari.

Ключевые слова: дзюдо, круговая тренировка, физическая подготовка, специальная подготовка, сила, выносливость, круговая тренировка.

Abstract. This scientific article studies the effect of circuit training on the general and special physical fitness of athletes in judo. During the research, experimental and control groups were formed, and a specially developed circuit training program was used for 8 weeks. The results showed that there were reliable positive changes in the indicators of strength, endurance, speed and special movement training of athletes.

Annotatsiya: Ushbu ilmiy maqola dzyudo sportchilarining umumiy va maxsus jismoniy tayyorgarligiga aylana mashqlari (circuit training) ta'sirini o‘rganadi. Tadqiqot davomida tajriba va nazorat guruhlari tashkil etildi hamda 8 hafta davomida maxsus ishlab chiqilgan aylana mashqlari dasturi qo‘llanildi. Natijalar shuni ko‘rsatdiki, sportchilarning kuch, chidamlilik, tezlik va maxsus harakat tayyorgarligi ko‘rsatkichlarida ishonchli ijobiy o‘zgarishlar ro‘y berdi.

Аннотация: Настоящая научная статья изучает влияние круговой тренировки на общую и специальную физическую подготовку спортсменов по дзюдо. В ходе исследования были сформированы экспериментальная и контрольная группы, в течение 8 недель применялась специально разработанная программа круговой тренировки. Результаты показали достоверные положительные изменения в показателях силы, выносливости, скорости и специальной двигательной подготовленности спортсменов.

INTRODUCTION

Judo is one of the sports that requires a high level of strength, speed, endurance, coordination and special technical training. In the modern sports training system, the comprehensive development of the physical qualities of athletes is of great importance. In this regard, in order to achieve high efficiency in the training process, it is necessary to optimize the loads and diversify the forms of training.

The method of circuit training has been widely covered in the scientific literature as an effective method that allows athletes to develop several physical qualities at the same time. However, the systematic assessment of the impact of this method on specific training indicators in the sport of judo has not been studied sufficiently. Therefore, the relevance of this study is determined by the need to introduce the method of circuit training into the training process of judo athletes on a scientific basis.

The purpose of the study:

To scientifically determine the effect of the circuit training method on the general and specific physical fitness indicators of athletes in the sport of judo.

Research objectives:

To analyze the theoretical and methodological foundations of the circuit training method in judo based on scientific literature and to identify the mechanisms of its influence on the general and special physical training of judo players.

Developing a circuit training complex adapted for judo players.

To determine the dynamic changes in the indicators of strength, speed, endurance, and special movement training of judo players during experimental training and to conduct a comparative analysis of them with the results of the control group.

The study involved 24 judo athletes aged 14–18 years with 2–5 years of experience. The participants were selected to be the same in terms of training level and age. The athletes were randomly divided into two groups: the experimental group (n = 12) and the control group (n = 12). The athletes in the experimental group trained according to a specially developed circuit training method, while the control group trained according to a traditional training program. During the study, the health status of all participants was monitored through a medical examination, and the training was organized in accordance with the age and functional capabilities of the athletes' body.

METHODOLOGY

The circuit training program experimental group introduced a specially designed circuit training program into the training process three times a week for eight weeks. Each training session consisted of 6–8 stations, and the ratio of load and rest intervals was determined taking into account the age and functional capabilities of the athletes. The duration of the work activity was 30–45 seconds, and the rest interval was 15–30 seconds, which served to ensure adequate recovery while maintaining high intensity during the training process.

The circuit training stations were formed taking into account the specific requirements of the judo sport and were aimed at the comprehensive development of the general and special physical qualities of athletes. In particular, pull-ups on the horizontal bar served to develop the strength of the upper body muscles, throwing exercises with a medicine ball increased explosive power indicators, and pulling exercises with a partner served to form the special strength specific to judo. **RESULTS**.

This set of stations allowed judokas to develop several physical qualities at the same time during training, ensuring the comprehensive and high efficiency of the circuit training method.

Table 1

Preand post-training performance of athletes in the experimental group (average values)

Indicator	Before	Then	Change (%)
Pull-ups on the horizontal bar (times)	10.4	13.1	+25.9%
Press (times) in 30 seconds	22.5	26.3	+16.9%
30 m run (seconds)	4.6	4.2	–8.7%
1000 m run (seconds)	255	230	–9.8%
Special technical actions (times)	18.2	22.5	+23.6%

As a result of a comparative analysis of the pre- and post-training performance of the athletes of the experimental group, positive dynamic changes were noted in all studied physical and special training indicators. In particular, the results of the pull-up exercise on the horizontal bar were 10.4 times on average before the start of training, while at the end of the experimental training

this indicator increased to 13.1 times, which indicates a significant increase of 25.9%.

This indicates a significant increase in upper body strength. The results of performing the press exercise for 30 seconds also changed positively.

The initial indicator was 22.5 times, but at the end of the experiment it increased to 26.3 times, an increase of 16.9%. This indicates an improvement in the strength and endurance of the core muscles. The results of the 30-meter run test, which reflects speed indicators, showed a decrease in the time indicator. This indicator, which was 4.6 seconds before training, decreased to 4.2 seconds after training, an improvement of 8.7%. This indicates a significant increase in the explosive speed and reaction of the athletes.

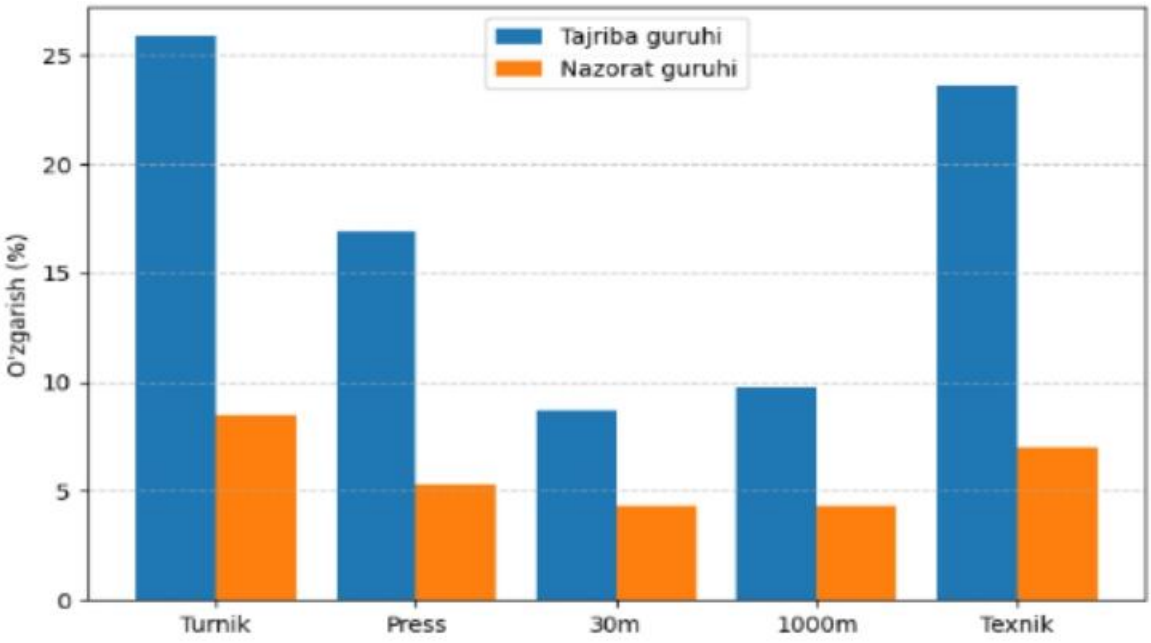
Positive changes were also observed in the 1000-meter run test, which assesses the quality of endurance. The initial indicator was 255 seconds, but at the end of the experiment it decreased to 230 seconds, which was an improvement of 9.8%. This result indicates an increase in the general aerobic endurance and recovery capabilities of the athletes. One of the most significant increases was observed in the continuous performance of technical movements test, which reflects the indicators of special training.

This indicator increased from 18.2 times to 22.5 times, an increase of 23.6%. This scientifically confirms that the circuit training method significantly increased not only general physical qualities, but also the effectiveness of specific movements inherent in the sport of judo.

Table 2

Preand post-training performance of control group athletes (mean values)

Indicator	Before	Then	Change (%)
Pull-ups on the horizontal bar	10.6	11.5	+8.5%
Press in 30 seconds	22.8	24.0	+5.3%
30m run	4.6	4.4	–4.3%
1000 m run	256	245	–4.3%
Special technical actions	18.5	19.8	+7.0%



Control group athletes from training previous and next indicators comparative analysis to do as a result all learned physical and special preparation indicators according to positive , but relatively low level changes record In particular , on the horizontal bar gravity exercise results exercises at the beginning on average 10.6 times organization reached if yes , exercises in the end this indicator up to 11.5 times increased by 8.5 % growth This was observed . situation high body muscles in power known at the level positive changes face that he gave shows .30 seconds during press exercises to perform results also positive towards changed first , first The indicator is 22.8 times organization reached if yes , experience in the end it is up to 24.0 times enough and 5.3 % growth record This was done . result body muscles power and in endurance limited at the level development that it was Speed indicators representing 30 meters running in the test time indicator decrease observed . Initial result in 4.6 seconds equal was if so , from training then it is up to 4.4 seconds decreased by 4.3% improved . This athletes speed in adjectives known at the level positive shift existence shows endurance . evaluator per 1000 meters running in the test also similar situation record was done . Initial The indicator is 256 seconds . organization reached if yes , exercises in the end it is up to 245 seconds decreased by 4.3% improvement This was observed . situation athletes general in endurance limited , but positive changes face that he gave shows . Special preparation reflection provider technician actions continuous to perform in the test and results from 18.5 times to 19.8 times increased by 7.0 % growth record This was done . indicator special technician in preparation known at the level development existence indicates , but this growth experience group to the results relatively

noticeable at the level low that is determined . In general when receiving , control group in athletes observed positive changes traditional exercises of the program known at the level effective that although it shows them size and intensity experience in the group record done to the results relatively low to be , this turnover exercises method high efficiency indirectly confirms .

DISCUSSION

Diagram analysis is data visual apparently expression through their main characteristics , mutual dependencies and trends determination Diagrams data fast and effective understanding opportunity gives , as well as complex statistic or experimental data one in view seeing to go out help . The first step in chart analysis is to collect data and present it in a clear and concise manner. This process uses bar charts, line graphs, pie charts, scatter plots, and other visual aids. Each type of chart is suitable for analyzing a specific type of data: for example, line graphs are used to track changes over time, while bar charts are used to show differences between different categories. The next step is to identify the main trends, maximum and minimum values, correlations, and outliers in the chart. The analysis process takes into account the statistical properties of the data, averages, variances, and other parameters. Chart analysis is widely used not only in scientific research, but also in economic, social, and educational fields. Chart analysis also makes data clear and understandable through visual presentation, which speeds up the decision-making process. In scientific texts, diagrams can be used to confirm results or test hypotheses, as they present data in a fact-based way. As a result, diagram analysis is an integral part of scientific research, allowing for a systematic and visual analysis of complex data. This helps to gain a deeper understanding of the data and to draw more precise scientific conclusions.

CONCLUSION.

The results of the experimental study showed that the circuit training method is highly effective in developing the training of judo athletes. The athletes of the experimental group showed significant improvement in all measured physical and special training indicators. In particular, the indicators of pull-ups and special technical movements on the horizontal bar increased by +25.9% and +23.6%, respectively, indicating the effective development of upper body muscle strength and technical training. In addition, the indicators of speed and endurance (30 m run: +8.7%, 1000 m run: +9.8%) also showed positive changes, which confirms the increase in the explosive power, aerobic endurance and general physical fitness of the athletes. Despite the fact that the athletes of the control group were engaged in a traditional training program, a significant but relatively low increase was observed in all indicators (horizontal bar: +8.5%, press: +5.3%,

30 m run: +4.3%, 1000 m run: +4.3%, special technical movements: +7.0%). This fact scientifically confirms the high efficiency of the circuit training method compared to traditional training. The results show that the circuit training method serves to comprehensively develop the general and special training indicators of athletes and is recommended for use in the process of judo training. At the same time, the method allows for the simultaneous development of strength, endurance, speed and technical training of athletes through high-intensity and combined exercises.

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