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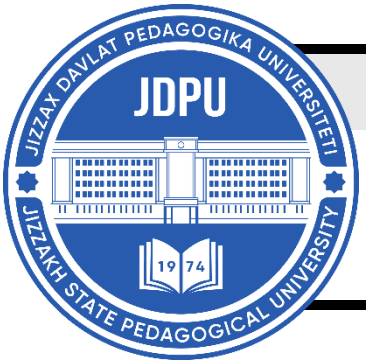
MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL



MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL

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IMPROVING THE EFFICIENCY OF FUNCTIONAL CONDITIONS OF 15-16-YEAR-OLD HANDBALL PLAYERS

Mirzokhid Sayfulloevich Rakhmatillaev
Associate Professor
the National University of Uzbekistan named after Mirzo Ulugbek
Tashkent, Uzbekistan

ABOUT ARTICLE

Key words: young handball players, training process, functional preparation, monitoring, technical-tactical preparation.

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Abstract: This article presents research conducted on the functional preparation of 15-16-year-old handball players. During the study, the functional condition of young handball players was monitored using the Facebeat device. Based on the obtained results, a set of optimized special exercises was developed for the team's training process and implemented in practice.

Introduction

Popularizing handball among youth in our country, particularly improving the quality and level of our national teams' performances on international stages, is considered one of the priority directions for developing this Olympic sport. "Enhancing and realizing the creative and intellectual potential of the younger generation, fostering a healthy lifestyle among children and youth, and broadly involving them in physical education and sports are of great importance." Scientifically evaluating and analyzing the technical-tactical actions of 15-16-year-old handball players during competitions, providing relevant recommendations based on

the analysis results, seriously implementing these recommendations in the training process, and organizing and conducting training sessions based on modern pedagogical technologies are among the pressing issues. Additionally, studying the socio-pedagogical aspects of preparing handball players by position further underscores the relevance of this work.

Degree of Study of the Problem. Currently, preparing 15-16-year-old handball players, enhancing the technical-tactical preparation of wing players in attack, improving players' directional running speed, and increasing their physical preparation to enhance game efficiency are among the primary challenges. Analysis of scientific-methodological literature on the topic indicates that several scholars in our republic, including Sh.K. Pavlov, J.A. Akramov, F.A. Abdurakhmanov, R.I. Isroilov, Kh.M. Khabibjonova, A.Sh. Muminov, and Sh.F. Tulaganov, have studied issues such as developing speed-strength qualities in handball during training sessions, maintaining balance stability, distinguishing time intervals, improving throwing accuracy through specialized exercises, and assessing the modern system of special strength and coordination preparation.

Materials and methods

To improve the functional conditions of 15-16-year-old handball players during training and competition periods.

Research Tasks:

- Analyze the existing literature on the topic in our republic;
- Study the volume and intensity of tools used in the training process during the preparation period of 15-16-year-old handball players;
- Monitor the functional conditions of 15-16-year-old handball players.

Research Object: The training process conducted with the 15-16-year-old handball national team of the Republic's Olympic and Paralympic Sports Training Center was selected as the research object.

Results and discussion

During the improvement of technical skills, the main tasks at each stage of technical preparation are as follows: 1) Achieving high stability and rational variability in movement

skills that form the basis of technical techniques in the chosen sport, and increasing their effectiveness in competitive conditions; 2) Partially reconstructing movement skills from the perspective of modern scientific achievements and the demands of sports practice, and improving the kinematics or dynamics of individual parts of the skill. To address the first task, methods such as complicating external conditions and practicing in various states of the body are typically used; to accomplish the second, methods such as simplifying technical movements and using combined influence are applied.

The method of complicating external conditions in the execution of technical techniques is implemented through several methodological approaches: The methodological approach of a conditional opponent's resistance is mainly used in sports games and combat sports. Elements of competing with a conditional opponent allow the athlete to improve the rhythm and structure of the technical technique's execution, achieving stability and effectiveness more quickly. Additionally, it helps increase the intensity of training load, serving as an effective psychological factor in fostering confidence in one's abilities, fearlessness, and determination.

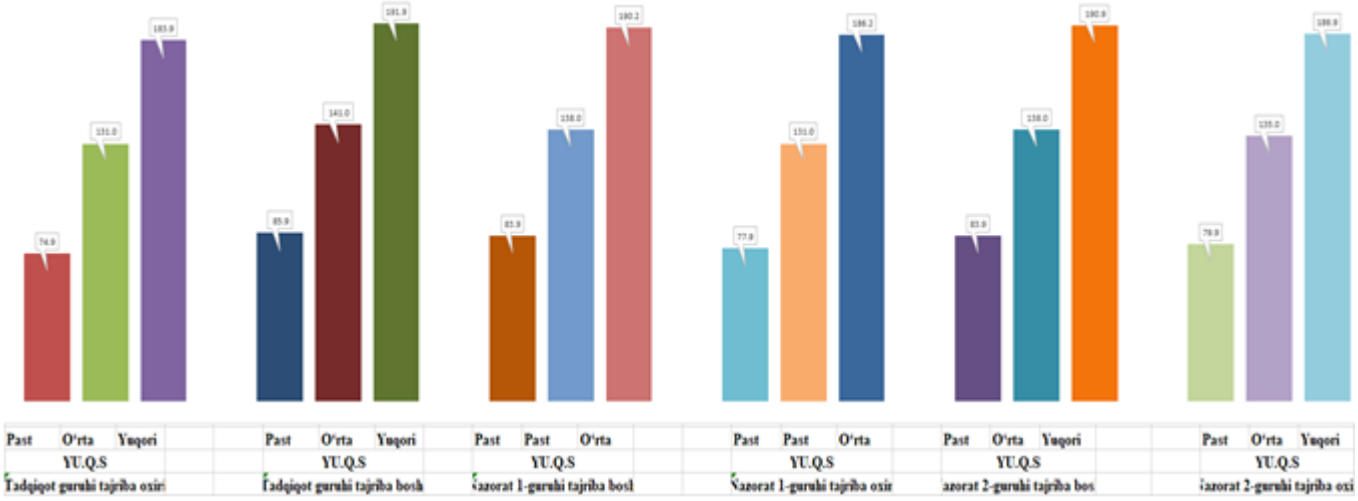

Figure 1. Dynamics of heart rate during training and competition processes at the beginning and end of the study.

The results presented in Figure 1 above describe the heart rate (HR) of handball players as follows:

Abdikulov.D	**Low 76**	**Medium 127**	**High 178**

Abdumo‘minov.S	Low 72	Medium 168	High 128
Abdinazarov.I	Low 65	Medium 119	High 169
Abdixalilov.Sh	Low 62	Medium 125	High 184
Abdumannobov.A	Low 65	Medium 139	High 201
Abdumutalibov.A	Low 60	, Medium 129	High 175
Abduvohobov.U	Low 71	Medium 134	High 180
Akbaraliyev.A	Low 78	Medium 141	High 188
Axmatqulov.J	Low 67	Medium 137	High 179
Axmedov.B	Low 85	Medium 123	High 182
Barnayev.D	Low 93	Medium 135	High 195
Berdaliyev.O	Low 103	Medium 139	High 189
Buriyev.Y	Low 95	Medium 130	High 189
Eshqobilov.A	Low 67	Medium 116	High 189
Jo‘rayev.A	Low 60	Medium 123	High 176
Total:	Low 1199	Medium 2096	High 2942

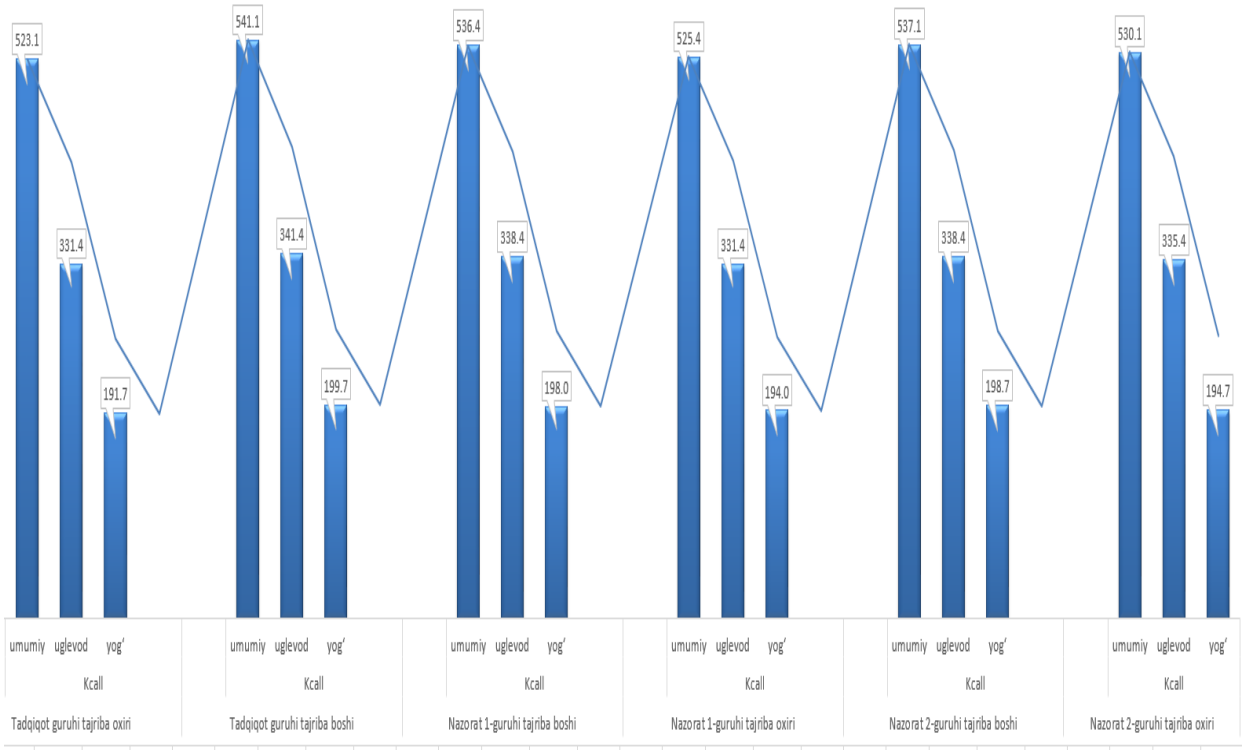

Figure 2. Dynamics of kilocalories expended by each of the three groups during training processes at the beginning and end of the study.

The results presented in Figure 4.2 describe the kilocalorie (Kcal) expenditure of handball players as follows:

Abdikulov.D	**Fat 208**	**Carbohydrate 267**	**Total 475**
Abdumo‘minov.S	Fat 220	Carbohydrate 288	Total 508
Abdinazarov.I	Fat 164	Carbohydrate 263	Total 427
Abdixalilov.Sh	Fat 189	Carbohydrate 300	Total 489
Abdumannobov.A	Fat 154	Carbohydrate 259	Total 413
Abdumutalibov.A	Fat 171	Carbohydrate 277	Total 448
Abduvohobov.U	Fat 183	Carbohydrate 330	Total 513
Akbaraliyev.A	Fat 205	Carbohydrate 381	Total 586
Axmatqulov.J	Fat 254	Carbohydrate 502	Total 756
Axmedov.B	Fat 175	Carbohydrate 349	Total 524

To monitor the kilocalorie expenditure related to the load and its volume in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players, the athletes were assessed using the Facebeat device. At the beginning of the experiment, the experimental group recorded a total expenditure of 541.1 kcal, with 341.4 kcal from carbohydrates and 199.7 kcal from fat. By the end of the experiment, these values improved to a total of 523.1 kcal, with 331.4 kcal from carbohydrates and 191.7 kcal from fat.

For the control group 1, consisting of 15-16-year-old handball players, the kilocalorie expenditure related to the load and its volume in the training processes aimed at improving technical-tactical preparation was monitored using the Facebeat device. At the beginning of the experiment, the total expenditure was 536.4 kcal, with 338.4 kcal from carbohydrates and 198 kcal from fat. By the end of the experiment, these values improved to a total of 525.4 kcal, with 331.4 kcal from carbohydrates and 194 kcal from fat.

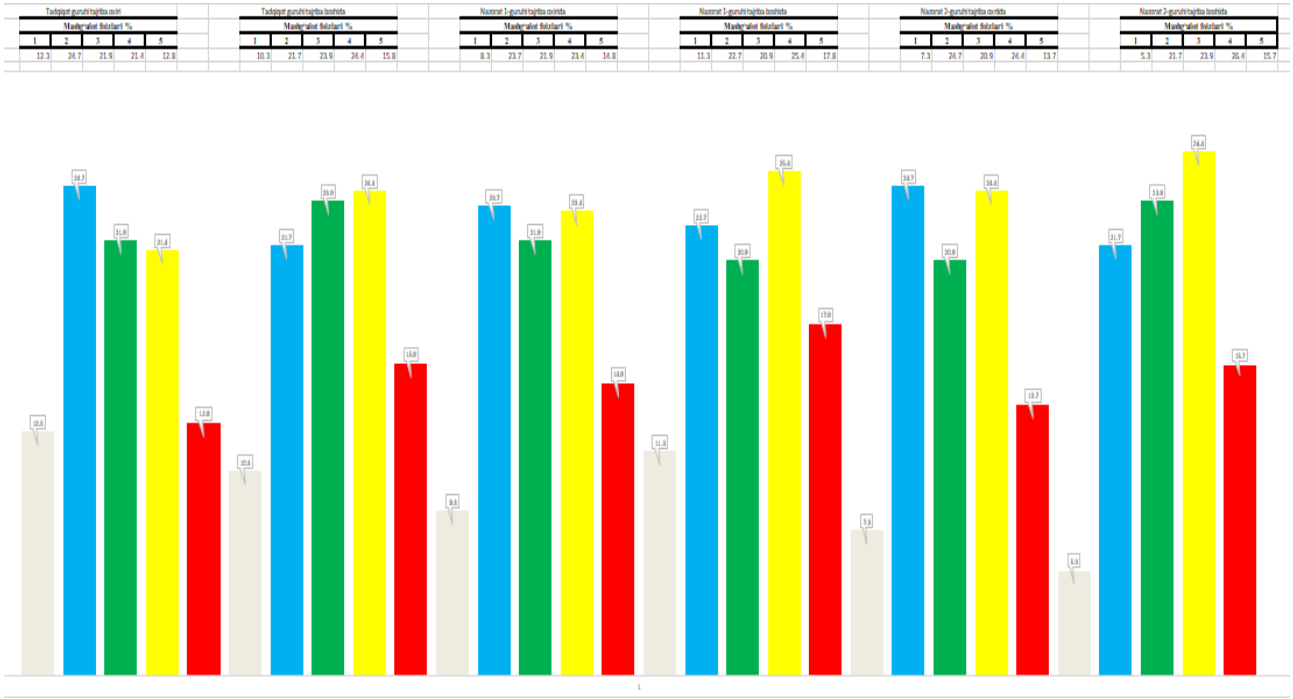

Figure 3. Dynamics of changes in load intensity in the experimental, control, and second control groups at the end of the study.

The results presented in Figure 3 describe the load intensity levels of handball players as follows: To monitor the load and its volume in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players, the heart rate (HR) of the athletes was studied. According to the HR dynamics, the experimental group at the beginning of the study recorded the following indicators: Low – 85.9, Medium – 141, High – 191.9. By the end of the study, these improved to Low – 74.9, Medium – 131, High – 183.9.

For the Control Group 1, the handball players recorded the following indicators at the beginning of the study: Low – 83.9, Medium – 138, High – 190.2. By the end of the study, these improved to Low – 77.9, Medium – 131, High – 186.2. For the Control Group 2, the handball players recorded the following indicators at the beginning of the study: Low – 83.9, Medium – 138, High – 190.9. By the end of the study, these improved to Low – 79.9, Medium – 135, High – 186.9.

For Control Group 2, to monitor the kilocalorie expenditure related to the load and its volume in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players, the athletes were assessed using the Facebeat device. At the beginning of the experiment, the total expenditure was 537.1 kcal, with 338.4 kcal from carbohydrates and 198 kcal from fat. By the end of the experiment, these values improved to a total of 525.4 kcal, with 331.4 kcal from carbohydrates and 194 kcal from fat.

Conclusion

The load intensity zones in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players were assessed on average using the Facebeat device. For the experimental group, at the beginning of the study, the indicators were as follows: Zone 1 intensity – 10.3 minutes, Zone 2 intensity – 21.7 minutes, Zone 3 intensity – 23.9 minutes, Zone 4 intensity – 24.4 minutes, and Zone 5 intensity – 15.8 minutes. By the end of the study, these improved to Zone 1 intensity – 12.3 minutes, Zone 2 intensity – 24.7 minutes, Zone 3 intensity – 21.9 minutes, Zone 4 intensity – 21.4 minutes, and Zone 5 intensity – 12.8 minutes.

For Control Group 1, the load intensity zones in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players were assessed on average using the Facebeat device. At the beginning of the study, the indicators were as follows: Zone 1 intensity – 11.3 minutes, Zone 2 intensity – 22.7 minutes, Zone 3 intensity – 20.9 minutes, Zone 4 intensity – 25.4 minutes, and Zone 5 intensity – 17.8 minutes. By the end of the study, these improved to Zone 1 intensity – 8.3 minutes, Zone 2 intensity – 23.7 minutes, Zone 3 intensity – 21.9 minutes, Zone 4 intensity – 23.4 minutes, and Zone 5 intensity – 14.8 minutes.

For Control Group 2, the load intensity zones in the training processes aimed at improving the technical-tactical preparation of 15-16-year-old handball players were assessed on average using the Facebeat device. At the beginning of the study, the indicators were as follows: Zone 1 intensity – 5.3 minutes, Zone 2 intensity – 21.7 minutes, Zone 3 intensity – 23.9 minutes, Zone 4 intensity – 26.4 minutes, and Zone 5 intensity – 15.7 minutes. By the end of the study, these improved to Zone 1 intensity – 7.3 minutes, Zone 2 intensity – 24.7 minutes, Zone 3 intensity – 20.9 minutes, Zone 4 intensity – 24.4 minutes, and Zone 5 intensity – 13.7 minutes.

The primary reasons for these improvements can be attributed to the incorporation of an optimized set of specialized exercises into the training process of young handball players, which enabled us to achieve these results.

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