

**MENTAL ENLIGHTENMENT SCIENTIFIC –
METHODOLOGICAL JOURNAL****MENTAL ENLIGHTENMENT SCIENTIFIC –
METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**REGIONAL DIFFERENCES IN THE GENERAL PHYSICAL FITNESS OF FEMALE
VOLLEYBALL PLAYERS AT THE TRAINING GROUP STAGE****Mukaddas Mamatova***Doctoral Candidate**Scientific Research Institute of Physical Education and Sports**E-mail address: mamtovam91@gmail.com**Tashkent, Uzbekistan*

ABOUT ARTICLE

Key words: Physical qualities, body index, regional comparison, supportive exercises, practical recommendations, auxiliary tools and equipment.

Received: 05.07.26

Accepted: 06.07.26

Published: 07.07.26

Abstract: This article examines the general physical qualities of female volleyball players at the training-group stage in sports schools across districts, identifies the physical qualities that are lagging behind in development, and proposes methods for their improvement. In addition, recommendations aimed at enhancing their athletic performance have been developed.

Introduction. Improving the general physical fitness of female volleyball players is considered one of the key directions of the modern training process. General physical fitness serves to comprehensively develop athletes' physical qualities such as strength, speed, endurance, agility, and flexibility. These qualities play a significant role in enabling volleyball players to perform effectively during the game, execute technical and tactical elements efficiently, and achieve high sport results [1]. In the development of general physical fitness, running, jumping, movement in different directions, coordination exercises, and strength-training exercises are widely used. In particular, exercises such as standing jumps, jumping while moving, box jumps, and single-leg jumps help strengthen leg muscles and increase motor activity [5]. At the same time, sprint exercises, short-distance running, lateral movements, and reaction drills contribute to the development of athletes' speed and agility qualities.

Materials and Methods. Strength-training exercises also play an important role in improving the general physical fitness of volleyball players. Specifically, exercises such as barbell squats, weightlifting, abdominal exercises, and shoulder-strengthening workouts help develop the muscles of the arms, legs, and torso. Performing exercises with moderate weights and at high speed enhances the functional capabilities of the muscles and strengthens the athletes' physical preparedness [11]. Additionally, exercises aimed at improving endurance and coordination are of particular importance in the process of developing general physical fitness. Such exercises help volleyball players maintain a high level of activity throughout the game for a long period of time, perform movements accurately and quickly, and reduce the risk of injuries [16].

Results and Discussion. The study involved female volleyball players at the training group stage who regularly participate in volleyball activities at sports schools operating in Qibray district, Yuqori Chirchiq district, and the city of Chirchiq in the Tashkent region. During the research, the athletes' level of general physical fitness, indicators of physical development, and motor qualities were comprehensively analyzed. In particular, important physical qualities such as strength, speed, endurance, agility, and jumping ability were assessed through specialized test exercises [9]. Furthermore, during the research process, regional differences in the athletes' physical fitness levels were identified, and the physical qualities that lagged behind in development were examined. Based on the obtained results, practical recommendations aimed at further improving the general physical fitness of female volleyball players were developed (see Table 1).

**Morphofunctional condition of female volleyball players body mass index
(Qibray District)**

1-table

№	Famly, name	Sex	Morphofunctional Condition			
			Body Mass Index			
			Body mass (kg)	Body height (sm)	Indeks	Norm
1	E-va G.	Female	77	1,73	25,7	Overweight
2	N-va Sh.	Female	56	1,68	17,7	Norm
3	B-va M.	Female	51	1,62	18,3	Norm
4	M-va J.	Female	50	1,65	18,3	Underweight
5	K-va A.	Female	50	1,56	17,3	Norm
6	S-va X.	Female	50	1,61	16,3	Norm
7	A-va B.	Female	58	1,53	18,3	Overweight
8	A-va L.	Female	52	1,64	18,4	Norm
9	R-va X.	Female	38	1,55	15,8	Overweight
10	B-va A.	Female	39	1,50	17,3	Underweight

11	P-va S.	Female	52	1,61	18,4	Norm
12	Z-va N.	Female	47	1,60	18,1	Underweight

The table above presents the morphofunctional condition and body mass index indicators of female volleyball players at the training group stage in the sports school of Qibray district. Based on the table data, the athletes' body weight, height, and body mass index were analyzed, and their level of physical development was assessed. According to the analysis results, it was found that some athletes had body weight within the normal range, while in some cases underweight or overweight conditions were observed among the students [3]. In particular, the low body mass index in some female volleyball players indicates insufficient development of muscle mass in their physical development. This, in turn, may have a negative impact on their strength, endurance, and speed-strength abilities (see figure 1).

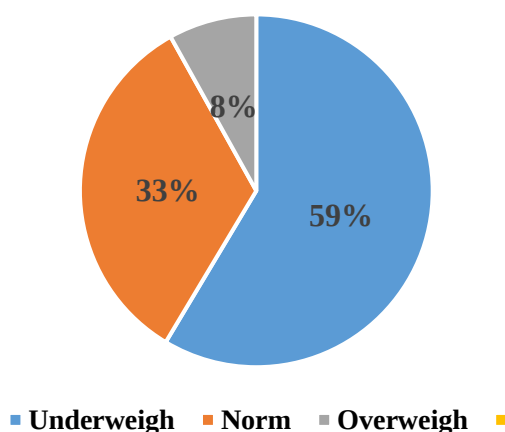


Figure 1. Morphofunctional condition and body mass index of female volleyball players in the Qibray district

It was also observed that in some athletes, body weight exceeded the normal range, which may potentially lead to a reduction in movement speed, jumping ability, and overall functional fitness level. In contrast, athletes with normal body weight demonstrated relatively stable physical development indicators. These findings indicate the need to further improve the general physical fitness of female volleyball players, to individualize training loads, and to closely monitor proper nutrition and recovery processes. At the same time, regular monitoring of athletes' morphofunctional status plays an important role in enhancing sports performance and effectively managing their physical development (see Table 2).

Morphofunctional condition of female volleyball players body mass index (Yukori Chirchik)

2-jadval

№	Famly, name	Sex	Morphofunctional Condition	
			Body Mass Index	

			Body mass (kg)	Body height (sm)	Indeks	Body mass (kg)
1	M-va A.	Female	47	1,59	18,6	Norm
2	N-va B.	Female	56	1,67	20,1	Norm
3	B-va M.	Female	49	1,61	18,9	Norm
4	L-va V.	Female	48	1,67	17,2	Underweight
5	K-va D.	Female	65	1,80	20,1	Norm
6	J-va A.	Female	58	1,53	24,8	Norm
7	B-va B.	Female	61	1,69	23,1	Norm
8	T-va G.	Female	56	1,64	24,0	Norm
9	M-va M.	Female	58	1,68	20,5	Norm
10	E-va A.	Female	60	1,53	20,7	Norm
11	N-va S.	Female	53	1,73	17,7	Underweight
12	O-va N.	Female	48	1,58	19,2	Norm

Table 2 presents the morphofunctional condition and body mass index indicators of female volleyball players at the training group stage in sports schools operating in the Yukori Chirchik district. Based on the table data, the athletes' body weight, height, and body mass index were analyzed, and their level of physical development was assessed. According to the analysis results, it was observed that in most athletes the body mass index corresponded to the normative values. This indicates that the physical development and functional condition of the female volleyball players are relatively stable. In particular, a proportional relationship between height and body weight was found to have a positive impact on the athletes' overall physical fitness.

At the same time, cases of underweight were identified in some athletes. Such indicators may suggest insufficient development of muscle mass and a lower level of adaptation to physical loads. As a result, this condition may negatively affect athletes' strength, endurance, speed, and jumping abilities (see Figure 2).

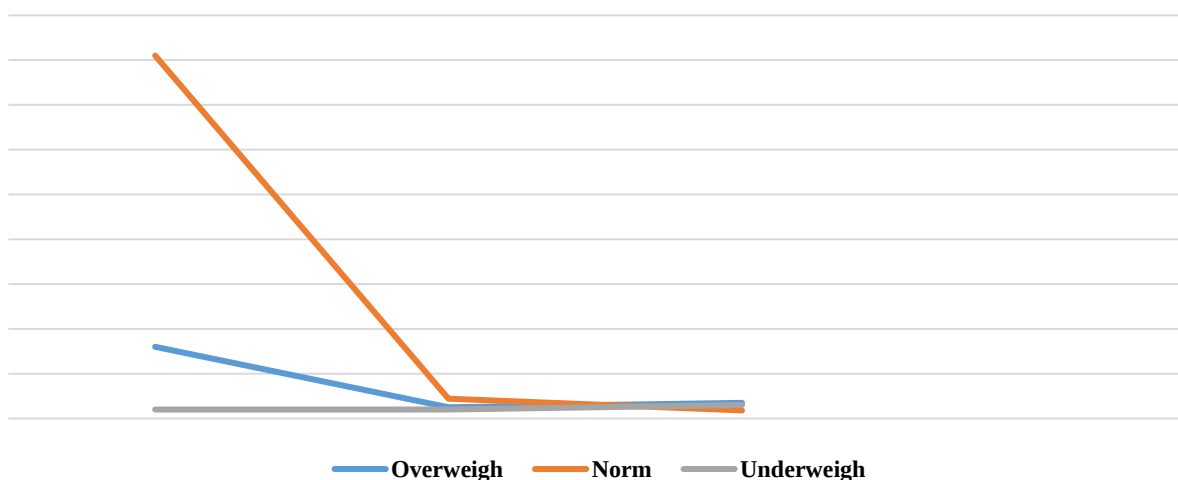


Figure 2. Morphofunctional condition and body mass index of female volleyball players in the Yukori Chirchik district

In some athletes, higher body mass index (BMI) values were also observed in the diagram, which may lead to a decrease in overall motor activity, speed of movement, and coordination abilities. Therefore, it is important to plan physical training loads based on an individual approach, adhere to a proper nutrition regimen, and monitor recovery processes during the training process. It is also essential to plan training loads appropriately, taking into account each athlete's individual physical condition. In particular, for athletes with high BMI, it is recommended to include aerobic exercises, endurance training, and special exercises aimed at fat reduction. In addition, it is important to establish a rational and balanced diet, limit high-calorie foods, and regulate water intake (see Table 3).

**Morphofunctional condition of female volleyball players body mass index
(Chirchik city)**

3-table

№	Family, name	Sex	Morphofunctional Condition			
			Body Mass Index			
			Body mass (kg)	Body height (sm)	Indeks	Body mass (kg)
1	Ava M.	Female	57	1,60	18,6	Norm
2	A-va E.	Female	56	1,65	20,1	Norm
3	A-va T.	Female	51	1,63	19,5	Norm
4	X-va M.	Female	60	1,70	18,2	Undervaigh
5	M-va F.	Female	65	1,59	20,0	Overweihg
6	B-va SH.	Female	58	1,62	24,8	Norm
7	Y-va SH	Female	63	1,69	22,1	Norm
8	J-va V	Female	59	1,57	23,0	Norm
9	E-va M.	Female	56	1,65	20,5	Norm
10	X-va CH.	Female	65	1,73	21,7	Norm
11	N-va U.	Female	53	1,70	17,7	Undervaigh
12	U-va N.	Female	60	1,58	12,2	Norm

Table 3 presents the body mass index indicators of female volleyball players at the training group stage in sports schools in the city of Chirchik. Based on the table, the athletes' body weight, height, and body mass index were studied, and their level of physical development was analyzed. According to the analysis results, it was observed that the body mass index of the majority of female volleyball players corresponded to the normative values. This indicates that the athletes' bodies are adapted to physical loads and that their overall level of general physical fitness is satisfactory. The proportional relationship between height and body weight is considered one of the important factors in volleyball. At the same time, cases of underweight were identified in some athletes. Such indicators may reflect insufficient development of muscle mass, low energy reserves in the body, and early fatigue during physical exertion. This can negatively affect the athletes' endurance, strength, and speed abilities. In some athletes, excess

body weight was also recorded in the table. This condition may negatively affect movement speed, jumping ability, and coordination skills. Since quick movement, high jumping, and agility are crucial in volleyball, maintaining an optimal body weight is very important.

Overall, the analysis of morphofunctional indicators of female volleyball players in Chirchiq city showed that most of the athletes have a normal level of physical development. At the same time, it was determined that in order to eliminate the identified shortcomings, it is necessary to organize training based on an individual approach, follow proper nutrition habits, and regularly apply exercises aimed at improving general physical fitness (see diagram 3).

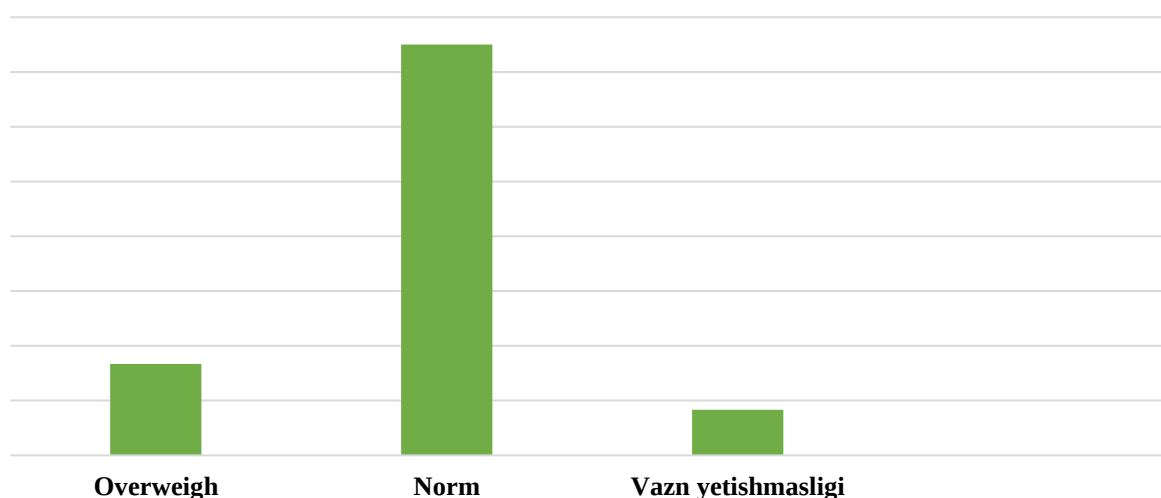


Figure 3. Morphofunctional condition and body mass index of female volleyball players in the city of Chirchiq

According to the results of this table, the athletes' body weight status shows an overall positive trend. A total of 75.0% of the group has normal body weight, which indicates that most athletes have a healthy physical condition and their functional capacity is at an optimal level. Such a condition contributes to higher efficiency, endurance, and motor activity during training sessions. At the same time, underweight was observed in 16.7% of the athletes. In addition, 8.3% of the athletes were found to have excess body weight. This situation may lead to a decrease in movement speed, difficulty in adapting to physical loads, and an increased risk of injury. Therefore, in this group it is important to apply aerobic exercises aimed at reducing fat mass, increase overall physical activity, and monitor dietary habits.

Conclusion. During the study, the morphofunctional condition and general physical fitness indicators of female volleyball players at the training group stage in sports schools of Qibray district, Yukori Chirchik district, and the city of Chirchik were examined. Based on the obtained results, the body mass index, as well as the relationship between height and body weight, were analyzed, and the athletes' level of physical development was assessed. The

results of the study showed that in most female volleyball players, body mass indicators were within the normal range. This indicates that their general physical fitness and functional capabilities are at a satisfactory level. At the same time, cases of underweight and excess body weight were identified in some athletes, which may negatively affect their strength, endurance, speed, jumping ability, and agility. It was also found that there are certain differences in the level of physical development of athletes across different regions. This highlights the need for an individualized approach to training organization, load planning, nutrition, and recovery processes [6]. In particular, for achieving high performance in volleyball, continuous improvement of general physical fitness is of great importance. Based on the study, it was determined that the use of special exercises, practical recommendations, and auxiliary training tools aimed at improving the general physical fitness of female volleyball players can produce effective results. Therefore, it is essential to apply modern training methods considering the age and individual characteristics of athletes, regularly monitor their morphofunctional condition, and promote a healthy lifestyle as one of the key factors.

References:

- [1]. Boltayev A.A. Yosh voleybolchilarda maxsus ish qobiliyatini rivojlantirish va uni o'yin davomida saqlash imkoniyati. Dissertatsiya PhD/Ped445: 2021. – B. 61– 82.
- [2]. Bekmansurov R.X. Методика подготовки волейболистов в современных условиях. 2023. – С. 2 – 6.
- [3]. Айрапетянц Л.Р., Годик М.А. Спортивные игры. – Ташкент: 1991. С. 114 –124.
- [4]. Matkarimov, Rashid Masharipovich - Og'ir atletika nazariyasi va uslubiyati: jismoniy tarbiya institutlari uchun darslik / R.M. Matkarimov; O'zbekiston Respublikasi Oliy va o'rta maxsus ta'lim vazirligi. Toshkent: «O'zbekiston» NMIU, 2015.200 b. (73-75-betlar)Павел Л.
- [5]. Антропометрические особенности волейболистов высокой квалификации. 2011. – С. 1–4.
- [6]. Kerimov F.A. Sportda ilmiy tadqiqotlar. 2024.-284 b.
- [7]. Петров В.Н., Федоров А.В. Подготовка волейболистов к соревнованиям: планирование тренировочного процесса. 2009. – 26 –28.
- [8]. Платонов В.Н. Система подготовки спортсменов в олимпийском спорте. Общая теория и её практические приложения. – Киев: Олимпийская литература. 2015. – 800 с.

[9]. Bompa T.O., Buzzichelli C. Theory and Methodology of Training (6th ed.). Champaign, IL: Human Kinetics. 2019. – P. 98 –102.

[10]. Ahmad Reza Iranpour¹, Mohammad Hemmatinafar, Javad Nemati¹, Mohsen Salesi¹, Hamed Esmaeili², Babak Imanian¹. The effects of plyometric training with speed and weight overloads on volleyball players' strength, power, and jumping performance. PLOS ONE. 2025.- P. 1-24.

[12]. Jiaoqin Wang¹, Zhikai Qin¹, Qiang Zhang¹ and Junsheng Wang¹. Lower limb dynamic balance, strength, explosive power, agility, and injuries in volleyball players. Journal of Orthopaedic Surgery and Research. (2025) 20:211. P.-3-14.

[13].Çakmak E, İnce A, Arı E. The Examination of relationships among Static and dynamic balance, speed and agility in female football players. J Int Anatolia Sport Sci. 2019;4:24–9.

[14]. Ana Filipa Silva, Filipe Clemente, Ricardo Lima (2019) "The Effect of Plyometric Training in Volleyball Players: A Systematic Review"

[15]. Michal Krzysztofik va boshqalar (2021) "Effects of Plyometric Conditioning Exercises on Volleyball Performance"

[16]. Ahmad Reza Iranpour va boshqalar (2025)"Effects of plyometric training with speed and weight overload"