European International Journal of Pedagogics

TYPE Original Research
PAGE NO. 31-36
DOI 10.55640/eijp-05-07-08

Characteristics of Physical and Technical Preparation of Highly Skilled Visually Impaired 5-A-Side Football Players

Uzokov Abdulxay Xoshimovich

"Institute for retraining and professional development of specialists in adaptive physical education and sports" Head of the department of theory and methodology of adaptive physical education and sports", Uzbekistan

OPEN ACCESS

SUBMITED 13 May 2025
ACCEPTED 09 June 2025
PUBLISHED 11 July 2025
VOLUME Vol.05 Issue07 2025

Abstract: This article presents the results of a study on the physical and technical preparation of visually impaired football players during the special training stage of the preparatory period in the training macrocycle. The Uzbekistan national 5x5 football team for visually impaired athletes was selected as the object of study. They are athletes who participate in Uzbekistan and international competitions in the Paralympic sport of 5x5 football (B1, B2, B3) (sport for the visually impaired).

Keywords: Visually impaired football players, 5x5 football, Paralympic competition, physical and technical preparation.

Introduction: Today, one of the most severe health conditions is blindness. This subsequently creates significant difficulties in adapting to life and the development of the organism. The surrounding environment becomes less perceptible, as 90% of the information received from the external world is acquired through the visual system.

Currently, it has been established that the main causes of decreased vision, poor vision, and blindness are congenital pathologies. This situation was observed in 91% of students examined in special schools of the Republic of Uzbekistan. The main causes include: congenital pathology of the lens (primarily cataracts), optic nerve atrophy, retinal pathology, congenital glaucoma, and high-degree myopia.

Today, according to the World Health Organization, there are approximately 45-50 million blind people

worldwide [5]. Over the past 30 years, this figure has increased by 12 million people.

Many people don't believe that visually impaired individuals can play football or score goals against goalkeepers with low vision, but fans who watch these games develop a deep sense of respect for these athletes. For some, witnessing visually impaired people become champions of national, Asian, world, and Paralympic competitions - through daily training, constant victories over their own limitations and societal barriers, and within the bounds of their physical and mental capabilities - leads to a profound reassessment of their own life values and principles.

Nevertheless, football for the visually impaired is no longer a mere fantasy; it is being implemented as a Paralympic sport in the form of 5-a-side football (B1, B2, B3) (sport for the visually impaired). This is a widely practiced sport on the world sports stage.

Despite the players being 100 percent blind or visually impaired, a plaster is applied to their eyes and black glasses are worn over them before the start of the game. This process does not apply to goalkeepers; in this type of football, goalkeepers are athletes of class B2 or B3. The rules of the game are based on mini-football, which is played by athletes without health impairments. The field measures 40x20 meters, with barrier walls 100-120 centimeters high along its sidelines. Consequently, there is no out-of-bounds along the sidelines; it only counts when the ball goes beyond the goal line. If the ball leaves the field during play, the referee throws the ball in from the sideline. Additionally, the barrier serves to mark the boundary of the field.

In this sport, it is permitted to have a guide (assistant) as a helper. They are positioned behind the opponent's goal. Their task is to instruct their team's players in attacking movements. The guide's influence on the game situation ends when the ball enters the middle zone of the field. Here, the assistant standing behind the sideline wall has the right to guide the players. In the defensive zone, the goalkeeper controls the game and organizes the actions of their defenders.

All zones (defensive, midfield, and offensive) are separated by lines. Referees have the right to penalize assistant referees and goalkeepers if they give advice outside their area of authority. The game ball is equipped with a rattle to make a sound as it moves. It is heavier than a regular futsal ball and barely bounces off the ground. The dimensions of the goals differ from those in futsal: the length is 3.66 m, the height is 2.14 m. Another feature is that players who don't have the ball must always make their presence known vocally. Usually, they say "to me" or simply "me," indicating which position they occupy. For non-compliance with these rules of the game, the referees have the right to penalize the athlete with a team and individual foul and award the opposing team a penalty kick.

Currently, 5-a-side football is popular in more than 70 countries.

In 1986, Spain hosted the first national championship for blind footballers. This country is rightfully considered the founder of this sport. In 1997, the first continental championships - European and American competitions - took place, and in 1998, the inaugural World Championship was organized, with Brazil emerging victorious. Brazil also claimed the world championship title in 2010, 2014, and 2018. Another South American country, Argentina, is also considered one of the leaders in world blind football. They were world champions in 2002 and 2006. The inclusion of blind football in the program of the 2004 Summer Paralympic Games in Athens marked a significant step in the development of the sport among blind athletes worldwide. From the first high-level competitions through all subsequent Paralympic Games, Brazilian teams have consistently stood atop the victory podium. At the 2024 Summer Paralympic Games in Paris, the French national team clinched the gold medal.

It should be emphasized that today our country's national team has all the necessary conditions for high-quality preparation for major international competitions: a staff of highly qualified specialists, the required number of training camps and control matches, regular comprehensive medical examinations of athletes, full equipment of the team, and provision of necessary tools and inventory. This high level has been achieved due to the fact that our state has identified the development of Paralympic sports as one of its priority tasks. However, in most regions of Uzbekistan, this pace of development is slowing down due to a number of problems. The study of these problems was the subject of our previous research [4]. Below are the main ones:

- Lack or insufficiency of specially trained coaches for 5-a-side football;

- High requirements for the competencies of 5-a-side football coaches;

- The absence of a specific methodology for training athletes in 5-a-side football, taking into account individual disease pathologies;

- Insufficient scientific and methodological literature on 5-a-side football;

- Insufficient organization of 5-a-side football competitions at the city and regional levels.

As a result of the aforementioned problems, the athletes' preparation for the Uzbekistan Championship

competitions remains at a low level. In this article, we present the results of a study conducted using the example of members of the Uzbekistan 5x5 football team for the visually impaired (under the National Paralympic Committee). This study was carried out during the special preparatory stage of the training macrocycle's preparatory period, in which the physical and technical readiness of blind football players was examined.

The Uzbekistan visually impaired team was formed in September 2018 and represents the capital region in the championships, leagues, and cups of Uzbekistan, as well as in international tournaments. Currently, the team is preparing for the Asian Championship. The study was conducted at sports facilities. The age of the blind athletes ranged from 18 to 25 years. A total of 8 participants were examined. Their average age was 20±2.5 years. The observation was carried out from January 13 to March 24, 2025. Training sessions were held 1-2 times a day, each lasting 90 minutes.

The group conducted training sessions based on a program developed by us. This program included teaching 5-a-side football (B1, B2, B3) technical skills (passing the ball, shooting at the goal, dribbling, etc.) as well as interaction with team members. During the experiment, the heart rate (HR) response to physical load was studied in completely blind athletes. These loads were aimed at developing speed-strength exercises, as well as speed, agility, and coordination abilities. General physical training sessions using exercise equipment and special devices were developed taking into account the individual characteristics of each athlete. For the development of general and special endurance, repeated and variable running methods were used, respectively.

To assess the functional state of football players on the 1st and 60th days of the study, the heart rate response to a standard load was examined (variable running, in which athletes performed work covering a distance of 2000 meters: 20 repetitions of 100 meters). The main principle of interval training is sufficiently intense running without full recovery before each new distance (100 meters). Therefore, the first analysis of the functional readiness indicators of the studied athletes was carried out not in the initial days of the experiment, but on the 15th day of training.

Due to the insufficient level of functional preparedness of these football players' bodies, it was not considered expedient or appropriate to check their heart rate after a medium-intensity load. On the first day of the study, resting heart rate (HR) and arterial blood pressure (BP) indicators were measured, and these values were taken as baseline measurements relative to the data from designated training days. On the 15th and 60th days of our study group, these indicators were measured at rest before the standard load, immediately after its completion, and after 15 minutes. The difference between resting and post-exercise HR, as well as BP, is considered a characteristic that describes the functional state of the cardiovascular system, i.e., its ability to recover.

As can be seen from the presented results of the dynamics of changes in arterial pressure (AP) in football players of the studied group (Table 1), pre-load systolic blood pressure (SBP) did not undergo any changes at all stages of the study group (start - January 13; 60th day - March 13). However, diastolic blood pressure (DBP) showed a downward trend on the 15th day of the study and significantly decreased by the 60th day compared to the baseline value (P<0.05).

Table 1

Influence of physical activity on the dynamics of blood pressure indicators (mm Hg) in visually impaired football players over two months (n = 8)

Observation periods	BP indicators					
	Systolic blood pressure (SBP)			Diastolic blood pressure (DBP)		
	Before standard load		Immediately after standard load		15 minutes after standard load	
	SBP	DBP	SBP	DBP	SBP	DBP
Beginning of study	130.65±7.4	75.39±4.8	149.15±8.7	71.31±2.9	129.41±5.7	71.61±4.2
End of study	128.17±10.6	P<0.05 69.50±3.1	141.41±9.5	P<0.05 65.33±3.8	121.12±4.9	P <0.05 66.53±3.9

Physical activity over 60 days influenced the heart rate recovery processes in the athletes' bodies. Thus, 15 minutes after the standard load, by the end of our experiment, there was a tendency towards a decrease in SBP values relative to the initial values. In this case, DBP decreased slightly by the 15th day, and by the 60th day, it significantly decreased compared to the baseline ($P<0.05$).

HR showed a tendency to decrease before the standard load, immediately after the load, and after 15 minutes (Table 2) at all stages of the experiment. As can be seen, by the end of the experiment, the HR decreased by 6.3% immediately after the standard load and by 7.1% 15 minutes after the standard load.

The dynamics of the studied BP and HR indicators show a decrease in the CVS response to the standard load during chronic physical activity and characterize its long-term adaptation processes.

Table 2.
Effect of physical activity on the dynamics of heart rate indicators (beats/min) in visually impaired football players (n = 8)

Observation periods (in days)	Heart rate indicators		
	Before load	Immediately after load	15 minutes after load
Beginning of study	65.83±4.3	105.50±6.8	65.59±4.6
End of study	63.91±2.9	101.39±6.6	62.87±2.9

During our observation, we also tested the speed and speed-strength capabilities of visually impaired football players. Unlike the indicators of functional preparedness, these data were obtained on the 1st and 60th days of training (Tables 3 and 4) and reflect the dynamics of the results obtained during the experiment. Thus, the speed of the 25-meter run and the 4x9 meter shuttle run remained significantly unchanged at all stages of our study. As for the 4x9 meter shuttle run with the ball, we can see that by the end of the experiment, the time to cover the distance decreased by 10.21%. This indicates an increase in the speed of covering the distance in the athletes we are observing.

Table 3
Dynamics of speed-strength indicators and speed development in blind football players (seconds) (n=8)

Observation periods (days)	25m run	4×9 m shuttle run	4×9 m shuttle run with a ball
Beginning of research	4.24 ± 0.21	10.96 ± 0.87	15.58 ± 1.03
Day 15	4.17 ± 0.18	10.43 ± 0.93	14.75 ± 1.17
End of research	4.28 ± 0.35	10.18 ± 0.81	13.99 ± 0.97

The presented research results (Table 4) show the dynamics of standing long jump indicators in blind football players. As can be seen, by the end of our study, there was a tendency for the studied values to increase by 4.56 percent.

Table 4
Dynamics of standing long jump indicators in visually impaired football players (n=8)

Observation periods (days)	Standing long jump
Beginning of research	233.27 ± 15.69
End of research	243.92 ± 14.93

In our study, we will examine the characteristics of test performance, taking into account the nosology of the athletes.

4x9 m shuttle run. A visually impaired athlete starts running in response to the coach's voice and command "Here, here, here..." while standing 9 meters from the starting line. At the same coach's command "Up," the athlete turns around and runs towards the starting line, listening to the voice and command of another coach standing at the starting line. In this way, 4 runs of 9 meters are completed.

4x9 m shuttle run with a ball. A visually impaired athlete carries the ball according to the coach's command "Here, here, here..." at a distance of 9 meters from the starting line. At the same coach's command "Up," they turn around and dribble the ball back to the starting line, listening to the voice and command of another coach standing at the starting line. Thus, 4 runs with a ball are performed over 9 meters.

The standing long jump was conducted according to internationally accepted rules.

Assessment of technical readiness. One of the most important components in training visually impaired football players is technical preparation. Therefore, at each stage of the study, we tested our athletes. They performed 3 "Wing Lane" passes and 3 "Long Diagonal" passes. As can be seen from the presented results (Table 5), at the beginning of the experiment, the average indicator of correct execution of the "Wing Lane" pass was only 0.61±0.03. By the 10th day, it gradually increased to 0.95±0.05, and by the 60th day, it significantly increased (P<0.05) compared to the initial indicator.

The results obtained from the study of the "Long Diagonal" pass remained practically unchanged at all stages of our observations.

Table 5

Dynamics of passing indicators in blind football players

Beginning of research	"Wing Lane" pass	"Long Diagonal" pass
Beginning of research	0.61 ± 0.03	1.2 ± 0.06
End of research	0.95 ± 0.05	1.19 ± 0.07
Beginning of research	P<0.01 1.87±0.15	1.17 ± 0.05

The tests used to determine the technical preparedness of visually impaired athletes are simple, but we will consider in detail the technical characteristics of their performance under the conditions of the athletes' nosology.

"Pass along the wing corridor"drill. The technical execution of medium-distance passes is practiced. In this type of football, balls are often passed along the side wall (board). It's important that the ball moves in a straight direction without touching the side wall. In this case, the pass reaches the receiver. If the ball touches the side wall and goes out of the designated corridor, the visually impaired athlete tries to catch it after the ricochet. In this situation: time is lost and the risk of losing the ball increases. The "Pass along the wing corridor" test is performed as follows. A designated goal with a width of 1 meter is set up at a distance of 10 meters. This is considered the end of the corridor. The boundaries of this goal can be marked by colored cones, markers, or balls. At the end of the corridor, in the center of this goal, the coach positions himself and indicates his presence by saying "Here." Upon this command, the athlete passes the ball. Three attempts are given. Two out of three successful attempts are considered a positive result.

"Long diagonal" pass. For a visually impaired athlete, the ability to perform long diagonal passes of 25-30 meters is also of great importance. Often, the goalkeeper initiates an attack from their own goal and passes the ball to the defender along the line. The defender must assess the situation by listening to their teammates positioned near the opponent's goal or along the line. A precise diagonal pass to the attacking zone contributes to an effective and logical conclusion of the attack. "Long diagonal" passes are executed in this manner. The athlete passes the ball 25 meters diagonally from their line in response to the coach's command "Here." The task is to score into a conditional goal. The distance between the posts of this conditional goal is 1.5 meters. If two out of three attempts are successful, the result is considered positive.

CONCLUSION

In Uzbekistan, a phased system has been recommended to develop Paralympic sports, strengthen public health,

and engage people in mass sports. In the social sphere, for blind and visually impaired individuals, the 5x5 football sport is specifically intended to increase their motor activity and develop physical qualities. It is also expected to improve spatial perception, sensory analyzers, and muscle movement in these individuals.

Thus, the studies conducted on the 60th day of the special preparatory stage of the training macrocycle's preparatory period showed that planned physical loads contribute to improving the functional state of completely blind football players' bodies and increasing their physical fitness. Exercises aimed at developing technical skills serve to improve technical preparedness.

REFERENCES

Bakhtiyorov D.B. The role of motivation in achieving high results through various means for students with disabilities // Republican practical conference "Scientific and theoretical foundations of the development of Olympic and Paralympic sports." 2024. - Chirchik, pp. 53-55.

Bakhtiyorov D.B. Effectiveness of improving the pre-competition microcycle in highly qualified amputee football players // Scientific-theoretical journal "Fan sportga." Chirchik. 2024/1. - pp. 69-73. 13.00.00 No. 16

Gofurov Sh.Kh. "Effectiveness of the methodology for teaching long jump from a running start to students with disabilities." Scientific research in sports. Chirchik. 2024/2, -pp.62-67. [13.00.00 No1642].

Gofurov Sh.Kh. Qualities of Paralympic athletes' participation in competitions. International online scientific and practical conference. "Current and Contemporary Problems of Athletics Development." UzSUPES, Chirchik. 2020. - pp. 353-355.

Gafurov Sh.Kh. Effectiveness of improving physical fitness in long jump for students with disabilities. "Current Issues in Adaptive Physical Education and Sports." II International Scientific and Practical Conference. Chirchik. 2024. - pp. 51-54.

Bakhtiyorov D.B. Monitoring physical fitness of highly qualified amputee football players // Republican practical conference "Scientific and theoretical foundations for the development of Olympic and Paralympic sports." 2024. - Chirchik, pp. 50-52.

Gafurov Sh.Kh. Methodology for teaching para-athletics long jump to students with disabilities. Current issues and solutions in the development of Paralympic sports. Republican Scientific and Practical Conference. Tashkent. 2024. - pp. 33-41.