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Age and anthropometric indicators of highly qualified football players

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Purpose: *to determine the age and overall dimensions of the body of football players – participants of the World Cup 2018.*

Material & Methods: *analysis, study and synthesis of domestic and foreign scientific and methodological literature allowed us to consider the model indicators of the sports capabilities of football players. Age and anthropometric indicators of highly qualified football players were considered. At the second stage, the studies were devoted to the study of indicators of the overall body dimensions of football players of the national teams of the participating teams of the 2018 World Cup. The study involved 736 football players aged 19 to 45 years. Such research methods as the analysis of scientific and methodical literature and methods of mathematical statistics were used.*

Results: *presents the age and anthropometric indicators of football players – participants of the 2018 World Cup. It has been established that football players participating in the 2018 World Cup have characteristic overall body dimensions and a number of their differences depending on the sporting role. Football players do not unite in one group, but are divided into classes according to the game specialization, which completely negates the thesis about the "universal" football player.*

Conclusions: *the data obtained suggest that the peak of sportsmanship in football is in the age range from 25 to 29 years. This age range included 342 people from 736 participants of the 2018 World Cup.*

Keyword: *age, body length, body weight, goalkeepers, defenders, midfielders, attackers.*

Introduction

Manning national teams, first of all, involves attracting the strongest players at the moment without regard to their age. Therefore, a particular distribution of players participating in the World Cup, for different age groups, reflects not the level of individual skill of the players, but most likely their ability to increase skill and achieve the highest level of skill at a certain time.

Currently, studies of the morphological indicators of young football players have been conducted [5–9; 12] and highly qualified football players [1–3; 10].

S. Golomazov and B. Chirva [4] identify five fairly distinct zones in the age distribution of players:

– prospect zone (up to 20 years);
– zone of growth of skill (up to 24 years);
– the flowering of skill (from 25 to 29 years);
– zone of extinction (from 30 to 34 years);
– zone of veterans (from 34 years).

But at the same time, experts note [4], one cannot ignore the fact that the development of football makes new demands on both technical skills and tactical thinking of players.

As part of the problem of age characteristics of physical condition, the average age of 20 teams participating in the 1994 World Cup in the USA was analyzed. The data obtained by the specialists allow us to say that the peak of sportsmanship in football is in the age range from 24 to 30 years. This age range included 272 people from 372 participants in the 1994 World Cup.

At the same time, the analysis of the preparedness of the football players of the national teams made it possible to conclude that by the age of 19, players would achieve physical fitness indicators typical of adult athletes. Achieved conditions are maintained for 10 years, and further begins the process of reducing the level of development, above all, distance speed and speed endurance [13].

As a result of another study, experts found that at the 2014 World Cup, the average age of the football teams participating was 26,9±0,1 years. The age of the players ranged from 18 (Cameroonian footballer Fabris Olinga) to 43 (Colombian footballer Farid Mondragon) years.

The oldest team in this World Cup was the national team of Argentina (28,7±0,6 years). The youngest team was formed by the national team of Ghana (25,0±0,6 years) [14].

At the 2014 World Cup, the average body length of the football teams participating was 181,7±0,3 cm. At the same time, the body length of the players was in the range from 163 cm (Italian national football player Lorenzo Insigne and Cameroon national team Edgar Sally) to 201 cm (national football player England Fraser Forster).

The average body mass of football players participating in the 2014 World Cup was 75,6±0,3 kg. Footballers' body weight varied from 58 kg (Algerian football player Abdelmumen Jabu, Ghana national team Harrison Affoul, France national team Mathieu Valbuuena) to 96 kg (Belgium national football player Daniel vann Beyten) [14].

Despite the fairly high weight-height performance, some players have successfully performed at competitions at vari-

ous levels. So, the main heavyweight of all the heavyweights is the 33-year-old Wimbledon English striker Adebayo Akinfenva (103 kg). With the growth of 180 centimeters Akinfenva weight passes for a hundred pounds.

In turn, Christopher Samba with a height of 193 centimeters during a career, the weight reached 101 kilograms. Before "Dynamo" and "Anji", this player played in England for Blackburn.

36-year-old Nikola Zigic with a height of 202 centimeters has a weight of 97 kilograms. N. Zigic played for the team, "Red Star", "Racing", "Valencia", "Birmingham". He scored 20 goals in 57 matches for the Serbian national team and was recognized as the player of the year.

The Belgian national team player Romelu Lukaku with a height of 190 centimeters weighs 94 kilograms. Now Lukaku shares first place in the sniper race in the English Premier League.

One of the indicators of the physical condition of football players can serve as the ratio of the components of body weight (muscle and fat). These components, being very labile, can both characterize the skill level of an athlete, and to some extent reflect the features of the training process [11].

Purpose of the study: to determine the age and overall dimensions of the body of football players – participants of the World Cup 2018.

Material and Methods of the research

According to the goal and objectives, the research program included methods of theoretical analysis and synthesis of scientific and methodological literature, methods of studying anthropometric characteristics, methods of mathematical processing of results.

Analysis, study and synthesis of domestic and foreign scientific and methodological literature allowed us to consider the model indicators of the sports capabilities of football players. Age and anthropometric indicators of highly qualified football players were considered.

At the second stage, the studies were devoted to the study of indicators of the overall body dimensions of football players of the national teams of the participating teams of the 2018 World Cup. The study involved 736 football players aged 19 to 45 years.

All research results were processed by generally accepted methods of mathematical processing of experimental data with the calculation of the arithmetic mean (x) and the standard error of the arithmetic mean (m). The methods of mathematical statistics are used in accordance with known recommendations using computer software "EXCEL" and "SPSS".

Results of the research

Table 1 presents the overall dimensions of the football players participating in the 2018 World Cup.

The results of the table indicate that the average age of football teams participating in the World Cup 2018 was 27,4±0,1 years. The age of football players ranged from 19 (7 football players) to 45 years (1 football player).

Table 1
Morphological indicators of football teams participating in the World Cup 2018

No.	Team	Age	Body length, cm	Body weight, kg
1.	Australia	27,6±0,9	181,1±1,5	76,4±1,7
2.	England	25,5±0,7	183,0±1,4	74,0±1,8
3.	Argentina	29,0±0,7	179,2±1,5	75,4±1,6
4.	Belgium	27,1±0,7	185,2±1,7	78,7±1,7
5.	Brazil	28,0±0,7	179,9±1,5	74,7±1,7
6.	Germany	26,6±0,6	185,6±1,0	79,6±1,3
7.	Denmark	26,5±0,7	185,5±1,6	79,5±1,6
8.	Egypt	28,4±1,1	182,1±1,4	76,7±1,3
9.	Iran	26,7±0,8	184,3±1,1	77,5±0,9
10.	Iceland	28,0±0,9	185,4±1,2	79,6±1,3
11.	Spain	28,0±0,8	179,8±1,4	74,3±1,4
12.	Colombia	27,8±0,8	180,4±1,3	74,9±1,2
13.	Costa Rica	29,2±0,7	180,9±1,2	75,5±1,6
14.	Morocco	26,7±1,0	183,0±1,3	75,3±1,4
15.	Mexico	28,7±1,0	179,3±1,4	72,3±1,3
16.	Nigeria	25,4±0,7	184,3±1,4	77,4±1,4
17.	Panama	28,4±1,1	183,2±1,1	77,8±1,3
18.	Peru	26,9±0,8	178,4±1,2	74,2±1,4
19.	Poland	27,8±0,8	183,3±1,4	76,7±1,1
20.	Portugal	27,9±1,1	179,4±1,4	72,9±1,6
21.	Russia	28,2±0,9	184,3±1,2	76,9±1,3
22.	Saudi Arabia	28,0±0,8	176,5±1,5	70,7±1,6
23.	Senegal	26,5±0,7	185,0±1,5	77,3±1,4
24.	Serbia	26,3±1,0	186,1±1,3	78,1±1,5
25.	Tunisia	26,0±0,7	183,6±1,2	75,4±1,1
26.	Uruguay	27,6±0,9	181,0±1,5	75,2±1,4
27.	France	25,6±0,8	183,2±1,6	76,6±1,8
28.	Croatia	27,4±0,7	185,1±1,3	79,0±1,4
29.	Switzerland	26,6±0,8	183,6±1,0	78,7±1,2
30.	Sweden	27,7±0,6	185,8±1,1	79,3±1,1
31.	South Korea	27,3±0,6	181,8±1,5	74,3±1,4
32.	Japan	28,1±0,7	178,7±1,2	71,9±1,1
Minimum value		19	164	58
Maximum value		45	201	99
Average value		27,4±0,1	182,4±0,3	76,1±0,3

The youngest were:

1. Trent Alexander-Arnold (England);
2. Ashraf Hakimi (Morocco);
3. Daniel Arzani (Australia);
4. José Luis Rodriguez (Panama);
5. Francis Uzoho (Nigeria);
6. Moussa Vahe (Senegal);
7. Kilian Mbappй (France).

The oldest player in this championship was Essam El-Hadhari (Egypt).

The oldest teams at the 2018 World Cup were the national teams of Costa Rica (29,2±0,7 years) and Argentina (29,0±0,7 years). The youngest team was formed by the national teams of France (25,6±0,8 years), England (25,5±0,7 years) and Nigeria (25,4±0,7 years).

In addition, at the present time, specialists from different sports pay much attention not only to the age of athletes, but also the date of their birth. So, according to some experts, more likely to become a high-class football player for those born at the beginning of the year.

The analysis of applications of teams and club teams of different levels indicates a noticeable superiority of players born in the first half of the year. This position is explained by the authors because UEFA considers the age of a player only by the year of birth, while the date and month have no meaning. Yes, and set in football schools around the world is made exclusively by the year of birth. With this method of selection, the biggest advantage is given to players born in January. After all, some of them are ahead in the development of their peers, born in December, by almost a year.

The results of our research confirm this position and indicate that the majority of football players participating in the 2018 World Cup were born in the first half of the year, mainly in January, February and March.

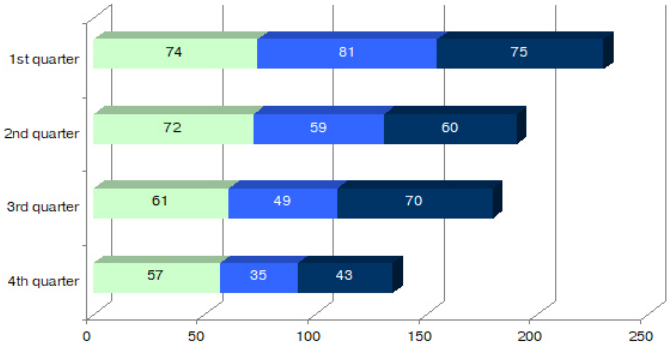

Figure 1. Number of football players participating in the 2018 World Cup, born in different months

From table 1 it can be seen that the average body length of the players was 182,4±0,3 cm. The body length of the players was in the range of 164 cm (Saudi Arabia's Yahya Al-Shehri) to 201 cm (Croatia's Lovre Kalinic).

The average body mass of the football players participating in the 2018 World Cup was 76,1±0,3 kg. The body weight of the players ranged from 58 kg (England football players Jesse Lingard and France national team Tom Lemar) to 99 kg (Panama football player Roman Torres).

Table 2 presents the morphological indicators of football players participating in the 2018 World Cup in various game positions.

Table 2
Morphological indicators of football players of different game teams participating in the 2018 World Cup

Position	Age	Body length, cm	Body weight, kg
Goalkeepers (n = 96)	29,1±0,4	188,8±0,5	82,2±0,6
Defenders (n = 242)	27,6±0,3	183,5±0,4	76,9±0,4
Midfielders (n = 288)	26,7±0,2	179,3±0,4	73,0±0,4
Forwards (n = 110)	27,0±0,4	182,8±0,6	77,3±0,6

If we look at the table according to the game positions of football players, then there is a tendency to decrease the age along the conditional line of the players 'position from their gates to the opponents' gates. Thus, the average age of goalkeepers is 29,1±0,4 years, defenders – 27,6±0,3 years, midfielders – 26,7±0,2 years, attackers – 27,0±0,4 years.

The goalkeepers were higher than the length of the body (188.8 ± 0.5 cm), relative to the defenders (183,5±0,4 cm), midfielders (179,3±0,4 cm) and attackers (182,8±0,6 cm).

A similar trend is observed in terms of body weight of football players participating in the 2018 World Cup. Thus, the average body weight of goalkeepers was 82,2±0,6 kg, defenders – 76,9±0,4 kg, midfielders – 73,0±0,4 kg and forwards – 77,3±0,6 kg.

Conclusions / Discussion

As a result of the study, data on model indicators of the sports opportunities of highly qualified football players of different playing positions were confirmed. The data on the age and anthropometric indices of highly qualified football players were supplemented and expanded.

The data obtained suggest that the peak of sportsmanship in football is in the age range from 25 to 29 years. This age range included 342 people from 736 participants of the 2018 World Cup

As a result of the study, it was established that the football players participating in the 2018 World Cup have characteristic body dimensions and a number of their differences depending on the sporting role. Football players do not unite in one group, but are divided into classes based on game specialization, which completely negates the thesis of the "universal" football player.

The results of our research are confirmed by previous studies [8–10].

Prospects for further research. Further research will be aimed at conducting a comparative analysis of the overall body dimensions of football players participating in the 2014 World Cup and the 2018 World Cup.

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