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Study of the total parameters of young Algerian footballers according to different age groups

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ABSTRACT

The evolution of soccer performance in recent years has led to sometimes profound revisions in the conception of training and player education. Currently and more particularly in Algeria, the contents of training are based much more on the level of the physical and physiological capacities of the player to the detriment of other aspects like the technical level or the morphological state of the players. In this respect, we believe that the multiplicity of factors influencing soccer performance depend on their interrelationships, taking into consideration both anthropometric parameters and physical factors. The relationship between morphology and specific tasks related to each discipline is rarely analyzed, despite the few studies developed in Poland (Lakomy, 1978). Therefore, the aim of this work is to identify the reality of the relationship between morphology, especially the indices of physical development and the development of physical and technical qualities of footballers under 20 years old.

Keywords : total parameters, soccer, age groups

1. Introduction :

It is known that team sports such as soccer are very complex due to the anthropometric, physiological, psychological, perceptual and technical parameters involved (Williams and Frank, 1998), in addition to the requirements related to the knowledge of the game in order to develop any game strategy. As such, it is apparent that any initiative to identify talent early on must consider all of these factors, while coupling them with the effects of growth throughout the child's developmental cycle (Malina et al. 2006). This multidisciplinary, which is specific to football and which is recognized by science, is however not fully characterized, as current scientific knowledge is far from objectively identifying all the variables of importance in football. Indeed, even today, it is difficult to develop reliable tests that can objectively specify the perceptual aspects and cognitive attributes that should characterize young football talents (Williams and Davids, 1998). Football is more of an appreciable than a quantifiable sport, as it is very difficult to mathematically quantify the variability of cognitive and affective processes during the course of the game.

In order to answer this problem, relating to the effects of training on the level of development of the physical and technical qualities and anthropometric indices of young Algerian footballers over three successive years, we proposed an original training program that meets both the needs of the game and those of identifying football talent. This experience, which involved 92 children aged between 11 and 14, enabled us to note an improvement in the level of development of the physical and technical qualities of the young people concerned by the monitoring and evaluation.

2. Methodology :

Work sample : Our sample concerns young footballers, measured during three consecutive years. The sample comes from a club belonging to the Interregional Division, namely the Jeunesse Sportive d'El Biar (J.S.E.B), which is a reference in terms of football training, due to the impressive number of players trained by this association and who have distinguished themselves both nationally and internationally.

The club has provided us with both players and coaches. We have selected a total of 92 young footballers, in four (4) age categories (in accordance with the rules of the International Federation of Football Association and the Algerian Federation of Football), namely

- Under 12 years old;

- the under 15 years old

- the under 17 years old;

- the under-19 years old

For the purposes of analysis, the under-15 group was made up of subjects aged 12-14 years and most subjects were measured twice a year over the 3 years of the study. The data collected underwent a descriptive analysis by age group and a repeated measures treatment. All these young footballers trained more or less regularly for between 3 and 5 hours per week (average of 4 hours per week) on the basis of 8 to 10 months per year, for a minimum of two (2) years and a maximum of six years. It should be noted that with the experimental program, we increased the number of training hours progressively according to the age groups studied.

The sample of this study composed of 120 young footballers aged between 10 and 19 years, whose data were collected between 2006 and 2008, are distinguished by the following characteristics. All the players selected were

subjected, for the first time, to anthropometric measurements in April 2006, i.e. in the middle of the competitive period for the under 15s, under 17s and under 19s, who also trained regularly, with the exception of the 10-12 year olds who only trained, without taking part in official competitions.

3. Results

The results relating to the total parameters of the young footballers, highlight for :.

- **Players born in 1992**

Tab. n°1 : Total parameters of young footballers' born in 1992.

	April 2007		April 2008		April 2009	
	Average	SD	Average	SD	Average	SD
Month	4,5	3,23	4,5	3,23	4,5	3,23
Weight cm	54,07	7,38	59,98	6,25	63,63	6,16
Height kg	166,31	6,93	167,12	4,55	170,66	4,32

Table n°2: Data on the age distribution of young footballers born in 1992 by month of birth and quarter

Month	January	March	April	June	July	Agust	October	November	Total
Number	8	7	4	3	2	2	2	2	30
Quarter	**1er**		**2ème**		**3ème**		**4ème**		
Number	**12**		**6**		**4**		**8**		30

Tab. n°3 : Total parameters of young footballers' born in 1993.

	April 2007		April 2008		April 2009	
	Average	SD	Average	SD	Average	SD
Month	5,35	2,98	5,35	2,98	5,35	2,98
Weight cm	45,721	8,57	49,67	7,15	53,18	7,11
Height kg	156,67	9,31	158,85	7,61	161,99	7,53

Tab. n°4: Data on the age distribution of young footballers born in 1993 by month of birth and quarter

Month	January	March	April	June	July	Agust	October	November	Total
Number	3	4	5	2	5	3	2	4	3
Quarter	**12**			**10**			09		

- **Tab. N°5 :Total parameters of young footballers' born in 1994.**

	April 2007		April 2008		April 2009	
	Average	SD	Average	SD	Average	SD
Month	5,35	2,98	5,35	2,98	5,35	2,98
Weight cm	45,721	8,57	49,67	7,15	53,18	7,11
Height kg	156,67	9,31	158,85	7,61	161,99	7,53

- **Table n°6: Data on the age distribution of young footballers born in 1994 by month of birth and quarter**

Month	January	February	March	April	May	June	Agust	Sept.	October	Novem.	Decem	Total
Quarter	4	6	2	1	3	2	1	3	2	4	2	30

- Age

It is known that the system of youth competitions is constructed in categories based on chronological age, with the idea of offering the same chances of participation and success to children. Based on the fact that relative age effects have a definite impact on selection procedures according to Helsen et al.1999, one of the aims of this presentation of age is to determine the distribution of players according to the months and quarters of the year, in order to better understand the differences in physical development of children and to help us understand the natural basis for selection and training of young children.

To do this, we studied the distribution of birth months of players (born in 1992, 1993 and 1994), according to year and month of birth. For the homogeneity of recording, we consider January as the first month of the selection year, i.e. month 1, and so on until December which represents month 12.

The analysis of the data collected allowed us to highlight the relationship between the number of players by age category for each sample and the

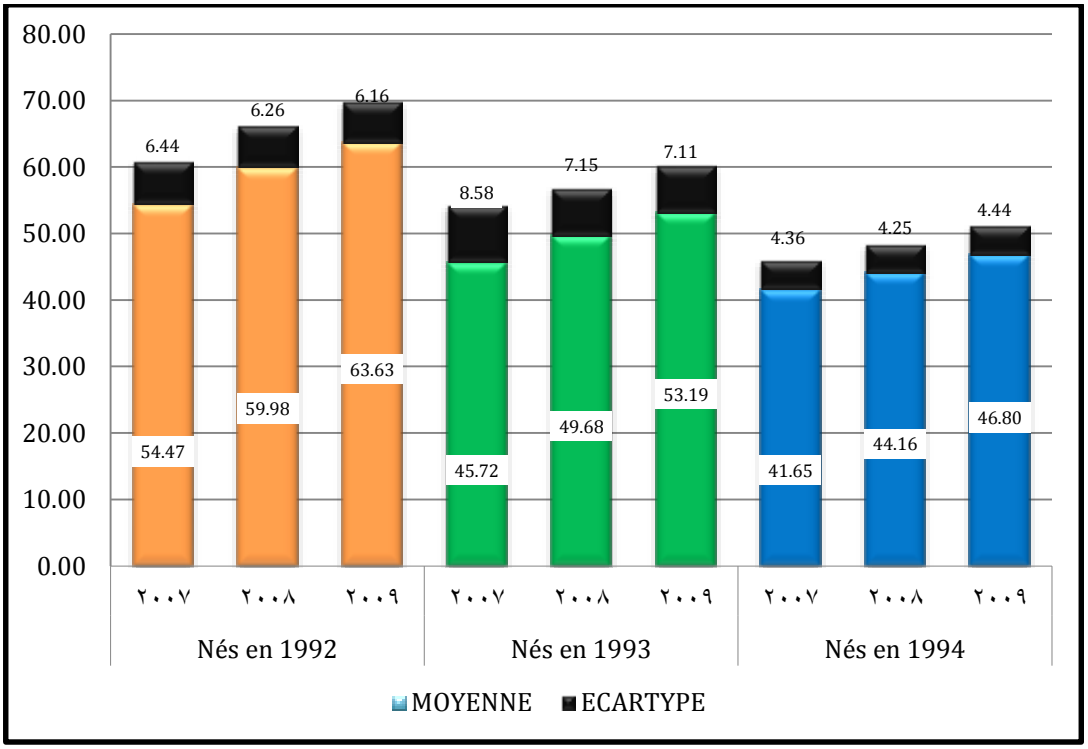
corresponding month of birth according to the principle retained. Several players were born in the first quarter of the selection year, 15 for the 1992 and 12 for the 1993 and 1994, i.e. a total of 39 players out of 94. The January and February births are also the most numerous, 32 out of 39. In addition, we found that there were few players born in the last quarter of the year: 04 in 1992, 03 in 1993 and 08 in 1994, i.e. a total of 15 out of the 94 in the sample. Thus, by this distribution of birth months, we can speak of an over-representation of players born in the first quarter of the year who, generally speaking, are better developed physically than the other players, who are fewer in number, especially those born in the subsequent quarters.

Considering the opinion of Helsen et al (1998) on the impact of relative age on selection, these findings have important implications for coaches in the detection and training of young people, in general, and talent, in particular. The other factor, often not considered, is the experience of the players. Indeed, players born in January are not only older than those born in December of the same year, but probably more experienced (Helsen et al, 1998).

Helsen et al (2000) and other authors believe that if the player is selected on the basis of physical characteristics, this could be problematic, as his maturation is completed, technical ability becomes the overriding factor in achieving success. Therefore, if in practice size (height) is very often the basis for the selection of young players, many talented young players are lost to football, as they are not physically developed for their relative age, but technically gifted, and will not have the chance to continue training, such as those born in the first quarter of the selection year.

Weight data results

Fig. 1 : Weight of young soccer players (2007-2009)



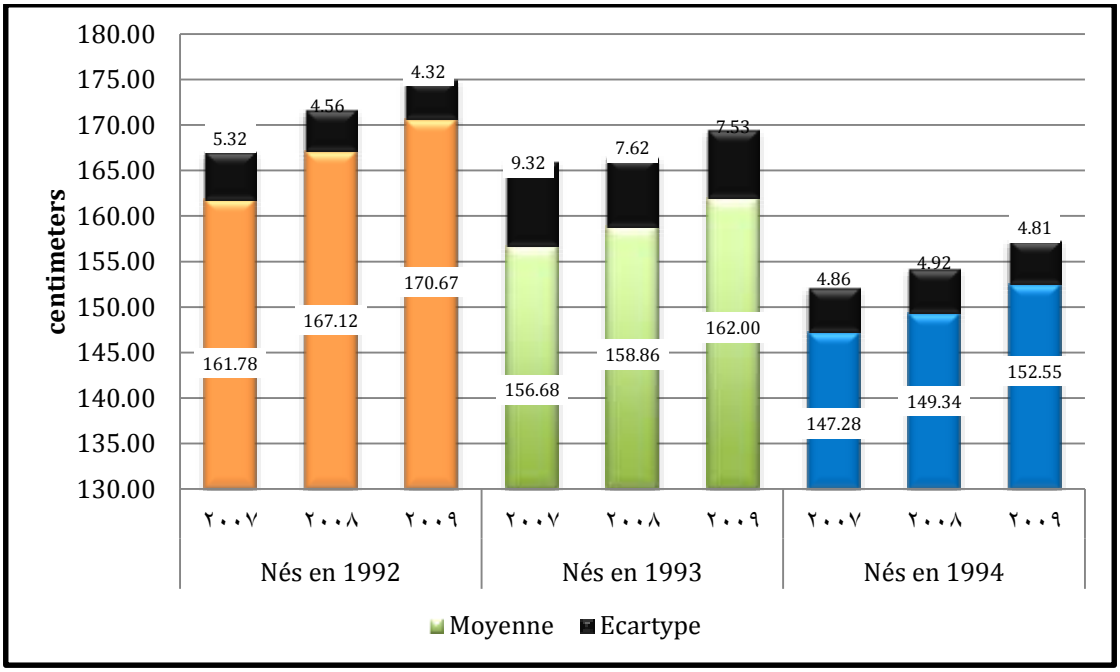
Young footballers born in 1992 are distinguished, for the years 2007, 2008 and 2009, by an average weight equal to 54.071 ± 7.381kg, 59.983 ± 6.259 kg and 63.633 ± 6.610 kg. We note the large difference in weight (between 24 and 25 kg over the three years) between the heaviest and lightest player (maximum and minimum).

For young people born in 1993, the following data on weight over the three years of the study show that in 2007, the average for this category was 45.721 kg ± 8.5, in 2008 it rose to 49.676 kg ± 7.154 and 53.185 kg ± 7.111 in 2009. It should be noted that for this age group, the difference in weight between the heaviest young child and the lightest over the three years (2007 to 2009) is around 35, 25 and 24.5 kilograms.

For youngsters born in 1994, it should be noted that they weigh less than young footballers born in 1993 and 1992. We note that the evolution of the weight is also in constant progression for this age category, namely 37.8 ± 8.999 Kg in 2007, 41.837 ± 9.409 Kg in 2008 and 46.803 ± 4.444 Kg in 2009.

Height data.

Fig.2 Height data of young soccer players (vertex) (2007 - 2009)



In terms of stature, we observe the same evolutionary trend in the data for young players, with a gain in height fluctuating between 1 and 3 cm from one year to the next. Thus, the average height measurements of young people born in 1992 are respectively for the years 2007, 2008 and 2009 of the order of 166.313 ± 6.932 cm, 167.123 ± 4.558 cm, and 170.665 ± 4.322 cm. From the point of view of maximum and minimum values, and with regard to this age category (born in 1992), it should be noted that the differences decrease from year to year, 25.5 cm for 2007, 18.3 cm for 2008 and 16.8 cm for 2009.

4. Discussion.

The average height and weight of young Algerian footballers tend to fluctuate from the reference averages recommended by the World Health Organization for sedentary young people aged 8 ± 14 years. However, during adolescence (15 years), average heights are below the reference averages (Malina R.M. et al. 2000). We noted that there are few studies that follow young footballers, and the study by Froberg et al. (1991) showed that at 14.2 years of age, young footballers are distinguished at the peak of growth by an average height near the standard average, which is also the case for the young players selected for this study.

Achieving a good sporting result is above all the result of a serious follow-up of an adapted and structured training. Nevertheless, each individual has an initial potential (of which morphology is a part) that is more suited to certain sports than others. As morphology and anthropometric profile are considered as determinants of future performance by certain federations, the detection of

young talent takes this area into account. It seems, however, that this influence of morphological aptitudes is of lesser importance in certain team sports, notably football.

For young people born in 1993, the data concerning weight over the three years of the study are as follows: in 2007, the average for this category is equal to 45.721 kg ± 8.579; in 2008 it changed to 49.676 kg ± 7.154 and 53.185 kg ± 7.111 in 2009. It should be noted that for this age group, the difference in weight between the heaviest young child and the lightest over the three years (2007 to 2009) is of the order of 35, 25 and 24.5 kilograms.

In view of the figures for the weight of young people born in 1994, it should be noted that these are arithmetically lower than those of young footballers born in 1993 and 1992. It should be noted that the evolution of the weight is also in constant progression for this age category, namely 37.8 ± 8.999 Kg in 2007, 41.837 ± 9.409 in 2008 and 46.803 ± 4.444 Kg in 2009.

Conclusion

It should be noted that the average height and weight of the young footballers in the study sample tended to fluctuate between the reference averages recommended by the World Health Organisation for sedentary young people aged between 8 and 14 years, whereas in adolescence (15 years) the average heights were below the reference averages.

It is useful to know that there are few studies that follow young footballers, and the study by Froberg et al (1991) showed that at 14.2 years of age, young footballers are distinguished at the peak of growth by an average height that corresponds more or less to the standard average, which is also the case for the young players chosen for this study.

In the light of these fragmentary results, and knowing that the achievement of a good sporting result is the fruit of adapted, structured and seriously followed training. It seems logical to us to relativise the importance and influence given to morphological aptitudes in a sport like football; despite their determining character, in the detection of young talents.

5. Bibliography List :

Baxter-Jones, A.D.G. and Helms, P.J. (1996). Effects of training at a young age: A review of the Training of Young Athletes. PediatricExercise Science e, 8, 310-327.

Claessens A.L. (1999). Talent detection and talent development: Kinanthropometric issues. ActaKinesiologiaeTartuensis, 4, 47± 64.

Helsen W. F., Hodges N. J., Van Winckel, J., &Starkes, J. L. (2000). The roles of talent, physical precocity and practice in the development of soccer expertise. Journal of Sports Sciences,18, 1 – 10.

Malina, R. M. (1994). Physical growth and biological maturation of young athletes.Exercise and Sport Sciences Reviews, 22, 389 –434.

Malina, R.M. (1994). Physical growth and maturation of young athletes.Exercise and Sport Sciences Reviews, 22, 389± 433.

Malina, R.M. (1998). Growth and maturation of young athletes ± is training for sport a factor? In Sports and Children (edited by K.-M. Chan and L.J. Micheli), pp. 133± 161. Hong Kong: Williams & Wilkins.

Reilly, T. (1994). Motion characteristics. In Football (Soccer) (edited by B. Ekblom), pp. 31± 42. Oxford: Blackwell Scientific.

Wilson, G., Newton, R. U., Murphy, A. J., & Humphries, B. (1993). The optimal training load for the development of dynamic athletic performance. Medicine and Science in Sports and Exercise, 25, 1279 – 1286.

Wisloff, U., Helgerud, J., & Hoff, J. (1998). Strength and endurance of elite soccer players.Medicine and Science in Sports and Exercise, 30, 462 – 467.