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Comparison of relative age of elite athletes participating in the 2008 Brazilian soccer championship series A and B

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The relative age of athletes has raised the attention of many researchers. The focus of these investigations understands the interference of this parameter in the identification of talents and the training of future elite athletes. Thus, the aim of this paper was to to evaluate and compare the existence of differences between semesters and birth date quartiles in professional soccer participating in the Brazilian Soccer Championship Series A (1st division) and B (2nd division) in 2008. Fourty clubs that participated in the Brazilian Soccer Championship Series A and B were evaluated, totalizing 1022 players (483 players in the 1st division and 539 players in the 2nd division). The players were grouped per birth date into year quartiles and semesters. The data showed that there was a preference of clubs from the two championship series for hiring athletes born in the 1st semester. Further, differences were absent only between quartiles 2 and 3 and a clubs` preference for 1st quartile athletes was also observed. We can conclude that the relative age stands out as a variable in the elite soccer athlete selection and training, as the comparisons show the clubs` preference for athletes born early in the year.

Key words: soccer, age, elite, players

Among the several psychosocial variables, the relative age resulting from the categorization of athletes` birth date or birthday quartile has raised the attention of many researchers (Coté, Macdonald, Baker & Abernethy, 2006; Glamser & Vicent, 1999; Simmons & Paull, 2001; Vicent & Glamser, 2006). The focus of these investigations understands the interference of this parameter in the identification of talents and the training of future high performance elite athletes. Ferreira (1999) defines quartile as "any of the three quarter values that divide the frequency distribution area of a domain area into four equal parts of the total area". The sport birth date quartile is defined as the subdivision of the birth year of athletes in months in four equal areas as categories (e.g. athletes with birth date in January, February, and March belong to the 1st quartile).

In sports literature, it is common to find studies (Vaeyens, Philippaerts & Malina, 2005; Vicent & Glamser, 2006) on relative age referred to as the difference in age between people in the same age group involved in the practice of a certain sport. According to Folgado, Caixinha, Sampaio and Maças (2005), the first studies on relative age were made in the education area. Researchers sought to identify children with birth dates closer to the beginning of the year who performed better comparatively to children born closer to the

end of the year. In sports, the relative age is an advantage factor in the selection of athletes, as individuals born closer to the beginning of the year tend to be either favored or disregarded, particularly because of physical aspects in relation to other athletes born closer to the end of the year (Musch & Grondin, 2001; Musch & Hay, 1999).

Musch and Grondin (2001) made an extensive revision of studies on relative age in different sports, including soccer. In their meta-analysis of 11 specific studies on relative age in soccer in 11 countries, they identified a preference for athletes born in the first two quarters of the year. This finding is relevant in sports practice and investigation, since in general, all the investment clubs make in the identification, selection, and training of young talents in the soccer starter category aims to form of professional (elite) soccer athletes.

The professional soccer category (to which soccer elite athletes belong) is a mirror of the whole training process carried out at the starter category, that is, if the selection process of elite athletes (developing athlete) does not employ mechanisms to minimize the negative effects of relative age, some elite athletes will face the harsh reality that privileges maturational factors (i.e. physical factors) at the expenses of tactic-technical skills and psychological features.

Therefore, this study aims to evaluate and compare the existence of differences between semesters and birth date quartiles in professional soccer participating in the Brazilian Soccer Championship Series A (1st division) and B (2nd division) in 2008.

Methods

Sample

It was evaluated all 40 clubs that participated in the Brazilian Soccer Championship Series A and B (2008), totaling 1,022 athletes (M= 25.34, SD= 4.51), with 483 players (M= 25.06, SD= 4.33) in the 1st division and 539 athletes (M= 25.59, SD= 4.66) in the 2nd division of Brazilian soccer.

The athletes were grouped per birth date into quartiles as follows: 1st quartile (January, February, March), 2nd quartile (April, May, June), 3rd quartile (July, August, September), and 4th quartile (October, November, December).

The semester grouping followed the same rationale: 1st semester (from January to July) and 2nd semester (from July to December).

Instruments

The instruments used were the 2008 Placar magazine, issue 1456-A and the websites of the participating clubs. The athlete birth dates informed in the Placar and the websites that did not agree were excluded from this study, a total of 16 individual birth dates (1.56%).

Statistical Treatment

Statistical analyses, means, standard deviation, frequency distribution, and inferential chi-square test were performed with the package SPSS 12.0.

Results

Table 1 presents the general data per semester and the birth date quartiles for Series A and B of the Brazilian Soccer Championship. It was observed the preference of clubs from the two championship series for hiring athletes born in the 1st semester.

Table 2 locates the differences per for fro Brazilian soccer athletes. Notice that differences were absent only between quartiles 2 and 3. It can also be observed the Brazilian clubs` preference for 1st quartile athletes to the others.

Table 1. Comparison of relative age of Brazilian soccer athletes

Semester	*N*	χ^2	*p*
1° Semester	596	28.278	0.000*
2° Semester	426		

Table 1. Comparison of relative age of Brazilian soccer athletes (*continuation*)

Quartile	*N*	χ^2	*p*
1° Quartile	330	39.746	0.000*
2° Quartile	266		
3° Quartile	234		
4° Quartile	192		

*p< 0.01

Table 2. Quartile comparison within Series A and B championships

Quartile Comparison	χ^2	*p*
1° x 2°	6.872	0.009**
1° x 3°	16.340	0.000**
1° x 4°	36.483	0.000**
2° x 3°	2.048	0.152
2° x 4°	11.956	0.001**
3° x 4°	4.141	0.042*

*p< 0.05 **p< 0.01

Discussion

In relation to the semester of birth, our results confirm the results of Vaeyens et al. (2005), who also found a preference for 1st semester-born athletes in a longitudinal study of Belgian soccer athletes. Musch and Hay (1999) compared the relative age plots for the general population of different countries (Brazil, Japan, Australia, and Germany) and for professional soccer players and identified a significant preference for 1st semester-born players.

The analysis of the differences found in birth date quartile reveals that they are very close to the results in the international literature. Glamser and Vicent (1999) investigated birth date quartile in American athletes and concluded that athletes born in the beginning of the year who became professionals predominate. Musch and Hay (1999) also found the predominance of soccer players born in the 1st and 2nd quartiles in a study of professional athletes from different social-cultural contexts and countries when compared to the general population.

A decade later, the results found in the Brazilian professional soccer for year 2008 are similar to those reported by Musch and Hay (1999) in their analysis of Brazilian championship professionals (1995-1996) with the clubs` preference for athletes born in the 1st and 2nd quartiles over 50% of the sample and a low score of athletes born in the 4th quartile.

Therefore, we conclude that the relative age stands out as a variable in the elite soccer athlete selection and training, as the comparisons show the clubs` preference for athletes born early in the year. However, it is necessary to analyze the relative age phenomenon in Brazilian soccer from a broader perspective considering aspects like sports organization in Brazilian athlete training, biological and maturational parameters, and socio-cultural aspects. In fact, a type of research we are conducting now.

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