

IS THE RELATIVE AGE EFFECT PREVALENT IN ELITE BRAZILIAN MALE FUTSAL? AN INVESTIGATION BASED ON AGE CATEGORIES AND PLAYING POSITIONS

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Abstract:

This study aimed to investigate the existence of relative age effect (RAE) in male Brazilian futsal athletes according to age categories and playing position. Data from male futsal athletes from the top five teams in Brazil were collected during May and June 2021. The distribution of birth dates of 387 male futsal athletes was analyzed, based on their age categories (U15, n = 97; U17, n = 88; U20, n = 116; senior, n = 86) and playing positions (defender, n = 76; winger, n = 162; pivot, n = 69; goalkeeper, n = 80). Chi-squared tests were used to analyze the birth dates distribution based on quarter and semesters of the year according to age categories and playing positions. The overall analysis of birth quarter indicated a higher occurrence of births in the first quarter of the year ($p < .001$; $V = 0.188$). The age categories analysis indicated a uniform distribution in U15 ($p = .09$; $V = 0.15$) and unequal distributions in U17 ($p < .001$; $V = 0.29$), U20 ($p < .007$; $V = 0.19$) and senior ($p < .01$; $V = 0.21$) categories. The playing position analysis indicated a uniform distribution for the pivots ($p = .11$; $V = 0.17$) and unequal distribution for goalkeepers ($p < .04$; $V = 0.19$), wingers ($p < .002$; $V = 0.19$) and defenders ($p < .002$; $V = 0.27$). We concluded that RAE was present in Brazilian elite men's futsal, especially in the U17, U20, and senior categories, and goalkeepers, wingers, and defenders. Our results reinforce the need to consider the effects of relative age in the development of Brazilian elite futsal players.

Key words: RAE, birth-date, birth effect, talent selection, elite athletes

Introduction

Age categories in team sports for young players are often determined according to the athletes' birth years. Based on this separation emerges the relative age effect (RAE), which is understood, from a developmental point of view, as the set of differences related to the birth date of athletes within the same age category (Andronikos, Elumaro, Westbury, & Martindale, 2016). These differences may provide a possible advantage to athletes born closer to the beginning of the selection year when compared to those born later (Ostapezuk & Musch, 2013). This effect can influence not only the

athletes' recruitment but also how they develop their motor skills or athletic capacity (Lidor, Maayan, & Arnon, 2021). For this reason, RAE has been extensively researched as a factor that can influence the selection and talent identification in different team sports (Rada, Padulo, Jelaska, Ardigò, & Fumarco, 2018; Rubajczyk & Rokita, 2020; Schorer, Cogley, Büsch, Bräutigam, & Baker, 2009; Schorer, Wattie, & Baker, 2013).

Specifically in Brazil, recent studies have found evidence of RAE in team sports like volleyball (Castro, Aguiar, Figueiredo, Laporta, Costa, et al., 2022), handball (Costa, et al., 2021; Figueiredo,

Gantois, Lima-Junior, Fortes, & Fonseca, 2020), beach handball (Figueiredo, Ribeiro, Fialho, Silva, Gantois, et al., 2020), track and field (Figueiredo, et al., 2021), soccer (Figueiredo, et al., 2022), and futsal (Castro, Aguiar, Clemente, Lima, Costa, et al., 2022; Castro, Figueiredo, Ribeiro, Oliveira, Aguiar, et al., 2022; Ferreira, et al., 2020; Morales Júnior, Alves, Galatti, & Marques, 2017).

One of the explanations for the differences found between individuals within a category is based on the fact that older athletes are more likely to present advanced maturation compared to the athletes born farther from the starting selection cut-off date. Accordingly, these athletes may benefit in terms of sports performance, depending on the specific demands of the modality and their developmental characteristics. Wattie, Schorer, and Baker (2015) propose a constraints-based model (individual, environment, and tasks constraints) to explain RAE (Kelly, Coté, Hancock, & Turnnidge, 2021). In this constraints-based model (Wattie, et al., 2015), the individual constraints refer to athlete's individual qualities, such as body composition, sex-specific qualities, height, and maturational status; the environmental constraints relate to the sport's popularity, policies, and physical environment; and the task constraints regard the sport's specificity, the physical capabilities that are more important for success, and its competitive level (Wattie, et al., 2015). In general, relatively older athletes are more likely to exhibit advanced physical characteristics and enter puberty earlier than their younger peers (Cobley, Baker, Wattie, & McKenna, 2009; Lovell, et al., 2015; Musch & Grondin, 2001). This gives to relatively older athletes performance advantages in most team sports, including futsal (Figueiredo, Seabra, Brito, Galvão, & Brito, 2021). These advantages occur due to more favourable and developed attributes such as height, muscle mass, aerobic power, muscle strength, endurance, and speed (Malina, Bouchard, & Bar-Or, 2004), factors that may influence performance in this modality (Castro, Aguiar, Figueiredo, Laporta, Costa, et al., 2022; Figueiredo, Seabra, Brito, Galvão, & Brito, 2021).

In this sense, some studies indicate that the RAE will be gradually reduced throughout the athletes' sports career, until it ceases to exist (Bjørndal, Luteberget, Till, & Holm, 2018; Brazo-Sayavera, Martínez-Valencia, Müller, Andronikos, & Matindale, 2018; Buekers, Borry, & Rowe, 2015; de la Rubia, Lorenzo-Calvo, & Lorenzo, 2020; Joyner, et al., 2020). Even though the reduction in RAE can be explained by a maturational bias (considering that the division by age groups usually ends around 19-21 years of athletes' age, when physical maturity differences are expected to be irrelevant), this explanation depends on whether relatively younger athletes remain actively engaged in the

sport modality during the years of selection or not (Cobley, et al., 2009). Another explanation for this phenomenon is given by Mann and van Ginneken (2017), who affirm that although RAE may cause a biased talent identification in young categories, relatively younger players may be more likely to succeed in the long run, considering that they must consistently overcome the challenges of training and competing against older children, which can lead to advantages. However, some studies have reported that RAE remains up to senior elite sports in some contexts where this effect is very pervasive in younger categories (Costa, et al., 2021; Figueiredo, Ribeiro, Fialho, Silva, Gantois, et al., 2020; Joyner, et al., 2020; Lidor, et al., 2021).

Another aspect that should be considered when investigating RAE in team sports is the athletes' playing positions since they present specific demands. Evidence from studies with Brazilian soccer (Figueiredo, et al., 2022) and handball (Figueiredo, Gantois, Lima-Junior, Fortes, & Fons, 2020) athletes, indicate that RAE is more prevalent in playing positions in which physical capabilities are more determinant for success. Furthermore, some RAE investigations have tried to determine whether this effect is associated with competitive success. To illustrate, Arrieta, Torres-Unda, Gil, and Irazusta (2015) found that relatively older players scored more points and showed increased performance index ratings compared to relatively younger athletes in European basketball championships. However, the investigation of the association between RAE and the performance obtained during games in team sports is still limited, especially when it comes to futsal.

Futsal is a multiple-sprint sport with intermittent high-intensity activities. Its popularity has grown in recent years with more than 12 million players involved in the sport (Beato, Coratella, & Schena, 2016). However, studies that have investigated RAE in futsal athletes are still scarce. In the senior or professional futsal categories, studies have indicated controversial results. In the study of Brazilian athletes, Morales Júnior, et al. (2017) found evidence of RAE in male athletes, which was later confirmed by Castro, Aguiar, Clemente, Lima, Costa, et al. (2022), with the addition that the effect seemed position-dependent in the latter sample of elite athletes. On the other hand, Carraco, Galatti, Massa, Loturco, & Abad (2020) indicated that being born in the first months of the year did not seem to determine success in the modality. Lago-Fuentes, Rey, Padrón-Cabo, Prieto-Troncoso, & García-Núñez (2020) even found a reverse RAE, corroborating that RAE findings in futsal are still controversial.

Although most RAE research approaches and methodologies have been used to document the "why" and "how" of the relationship between

characteristics of the athlete's birth date and development, it is argued that more studies on specific contexts are still necessary (Kelly, et al, 2021). In addition to the controversial RAE results found in futsal, no previous research has analyzed the RAE in Brazilian male futsal players from different age categories while considering playing positions. Thus, this study aimed to investigate the existence of RAE in the most competitive teams of male Brazilian futsal athletes according to age categories (from U15 to senior) and playing positions. Our hypothesis is that RAE will be found in athletes from different age categories and playing positions, considering the theoretical model from team sports proposed by Wattie, et al. (2015).

Methods

Participants

This is a retrospective and descriptive study with a cross-sectional design. The sample of this study was composed of 387 male futsal athletes from the top five teams in Brazil, divided by age categories: U15 (n = 97; mean age = 13.8 ± 0.8 years), U17 (n = 88; mean age = 15.8 ± 0.7 years), U20 (n = 116; mean age = 18.2 ± 0.9 years) and senior (n = 86; mean age = 26.3 ± 6.1 years); and playing positions: defender (n = 76), winger (n = 162), pivot (n = 69), and goalkeeper (n = 80). All athletes competed in national and international competitions for their respective team in the 2021 season. The division from U15 to senior categories was chosen because these are the competitive age categories and playing positions defined in Brazil. To select the sample, the Brazilian teams that most participated and won titles in national and international championships in the last five years were considered, since no official teams rankings are maintained by futsal federations either in Brazil or worldwide. To illustrate the relevance of these teams in Brazil and worldwide, in the last five years they won five national titles and four international titles. The exclusion criterion was the absence or inconsistency in any of the information necessary for the research, such as the athletes' date of birth, age category and playing position.

Data collection and procedures

This study applied similar methods as were used in previous studies in futsal (Lago-Fuentes, et al., 2020). Data were obtained from the official teams' websites or made available by the teams upon request made by the researchers. Once data were collected, a member of the technical staff of the teams that made up the sample checked it for reliability purposes. All data collection procedures occurred during May and June 2021. The information included players' date of birth, playing positions (goalkeeper, winger, defender, or pivot), age categories (U15, U17, U20, and senior), and teams.

All information was kept confidential and was used specifically for this study, after athletes' anonymity and the teams' agreement.

For the purpose of this study, we defined the birth year as beginning on January 1st, as used by the other studies in sports (Cobley, et al., 2009). The data were organized in a spreadsheet, and the variables analyzed included the athletes' birthdate quarters, as used in the previous studies in futsal (Carraco, et al., 2020; Morales Júnior, et al., 2017): quarter one: Q1 (January-March), quarter two: Q2 (April-June), quarter three: Q3 (July-September), and quarter four: Q4 (October-December), age categories (U15, U17, U20, and senior), and playing positions (defender, winger, pivot, and goalkeeper).

Statistical analysis

The frequencies of Brazilian futsal athletes born in each of the quarters were presented in absolute values. Chi-square tests (χ^2) were performed to compare the birthdates' distribution by age categories and playing positions. The observed distributions of athletes' birthdates in each quarter were compared with the expected frequencies (Edgar & O'Donoghue, 2005). The effect size (Cramer's V) of the chi-square tests was calculated for all analyses, considering 0.1 a small effect, 0.3 a medium effect and 0.5 a large effect, based on Cohen (1988). Additionally, odds ratio (ORs) and 95% confidence intervals for Q1 versus Q4 and the first versus the second semester (1st:2nd) were calculated, similarly to Figueiredo, Ribeiro, Fialho, Silva, Gantois, et al. (2020). Analyses were performed using the Statistical Package for the Social Sciences (SPSS), version 20.0 (Chicago, USA). The significance level was set to 0.05. Multiple comparisons between the quarters were performed as *post-hoc* analyses, when necessary. In these cases, Bonferroni's corrections were performed, and the significance level was adjusted to 0.0083.

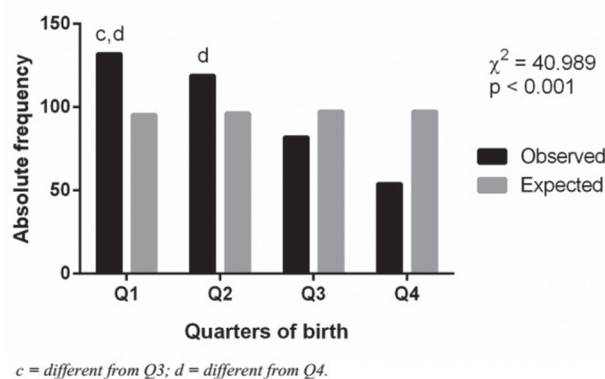
Results

The analysis of the overall sample of futsal athletes indicated an uneven distribution according to the quarters of birth ($\chi^2 = 40.989$; $p < .001$; $V = 0.188$), with a small effect size, as seen in Figure 1. The *post-hoc* analyses indicated more athletes in Q1 compared to Q3 and Q4 ($p < .0083$). Moreover, more athletes were found in Q2 compared to Q4 ($p < .0083$).

The analysis of futsal athletes' birthdates distribution according to age categories indicated an even distribution in the U15 ($p = .09$; $V = 0.15$) category (Table 1). On the other hand, uneven distributions were found in the U17 ($p < .001$; $V = 0.29$), U20 ($p < .007$; $V = 0.19$) and senior ($p < .01$; $V = 0.21$) categories. In these cases, small effect sizes were reported, and *post-hoc* analysis revealed an overrepresentation of athletes born in Q1 compared

to Q4 ($p < .0083$) in the U17 and U20 categories. As for the senior category, the *post-hoc* analysis revealed an overrepresentation of athletes born in Q2 compared to Q4 ($p < .0083$).

The analysis of futsal athletes' birthdates distribution according to playing positions indicated an even distribution for pivots ($p = .11$; $V = 0.17$) (Table 2). On the other hand, uneven distributions were found for goalkeepers ($p < .04$; $V = 0.19$), wingers ($p < .002$; $V = 0.19$) and defenders ($p < .002$; $V = 0.27$). In these cases, small effect sizes were reported. The *post-hoc* analysis failed to identify the differences in the case of goalkeepers. However, the *post-hoc* analysis revealed an overrepresenta-



c = different from Q3; d = different from Q4.

Figure 1. Quarters of birth distribution of the overall Brazilian futsal athletes

Table 1. Quarters of birth distribution of Brazilian futsal athletes according to age categories

Age category	Q1 (Exp) [%O-E]	Q2 (Exp) [%O-E]	Q3 (Exp) [%O-E]	Q4 (Exp) [%O-E]	χ^2	p	V	OR – Q1:Q4 95% IC	OR – 1 st :2 nd 95% IC
U15	29 (24) [5.2]	29 (24.2) [5]	25 (24.4) [0.6]	14 (24.4) [-10.8]	6.493	0.09	0.15	2.53 1.24 to 5.13	2.21 1.25 to 3.25
U17	39 ^d (21.7) [19.6]	21 (21.9) [-1]	19 (22.2) [-3.6]	9 (22.2) [-15]	22.005	<0.001	0.29	6.99 3.14 to 15.47	4.59 2.44 to 8.65
U20	40 ^d (28.7) [9.8]	36 (28.9) [6.1]	22 (29.2) [-6.2]	18 (29.2) [-9.7]	12.323	<0.007	0.19	2.87 1.52 to 5.37	3.61 2.1 to 6.2
Senior	24 (21.3) [3.2]	33 ^d (21.4) [13.5]	16 (21.7) [-6.6]	13 (21.7) [-10.1]	11.558	<0.01	0.21	2.17 1.02 to 4.59	3.86 2.05 to 7.26

Note. Q1-Q4 = birth quarters; (Exp) = expected distribution; [%O-E] = relative difference between the observed and expected distribution; χ^2 = chi-square; p = level of significance; V = effect size; OR – Q1:Q4 = odds ratio from Q1 to Q4; OR – 1st:2nd = odds ratio from 1st semester to 2nd semester; d = different from Q4.

Table 2. Quarters of birth distribution of Brazilian futsal athletes according to playing positions

Playing position	Q1 (Exp) [%O-E]	Q2 (Exp) [%O-E]	Q3 (Exp) [%O-E]	Q4 (Exp) [%O-E]	χ^2	p	V	OR – Q1:Q4 95% IC	OR – 1 st :2 nd 95% IC
Goalkeeper	29 (19.8) [11.5]	23 (19.9) [3.8]	16 (20.2) [-5.2]	12 (20.2) [-10.2]	8.938	<0.04	0.19	3.22 1.51 to 6.86	3.45 1.8 to 6.6
Winger	50 (40) [6.2]	56 ^{c,d} (40.4) [9.7]	29 (40.8) [-7.3]	27 (40.8) [-8.5]	16.638	<0.002	0.19	2.23 1.32 to 3.79	3.58 2.26 to 5.66
Defender	29 ^d (18.8) [13.4]	22 ^d (18.9) [4]	20 ^d (19.1) [1.1]	5 (19.1) [-18.6]	16.548	<0.002	0.27	8.76 3.24 to 23.5	4.16 2.11 to 8.18
Pivot	24 (17) [10.1]	18 (17.2) [1.2]	17 (17.4) [-0.6]	10 (17.4) [-10.7]	6.014	0.11	0.17	3.14 1.37 to 7.16	2.42 1.22 to 4.79

Note. Q1-Q4 = birth quarters; (Exp) = expected distribution; [%O-E] = relative difference between the observed and expected distribution; χ^2 = chi-square; p = level of significance; V = effect size; OR – Q1:Q4 = odds ratio from Q1 to Q4; OR – 1st:2nd = odds ratio from 1st semester to 2nd semester; c = different from Q3; d = different from Q4.

tion of athletes born in Q2 compared to Q3 and Q4 ($p < .0083$) for wingers. Additionally, the *post-hoc* analysis indicated an overrepresentation of athletes born in Q1, Q2 and Q3 compared to athletes born in Q4 ($p < .0083$) for defenders.

Discussion and conclusions

The present study aimed to investigate the existence of RAE in male futsal athletes that play on the most competitive Brazilian teams according to age categories (U15 to senior) and playing position (defender, winger, pivot, and goalkeeper). In the general analysis of birth quarter, the results indicated a higher occurrence of births in the first quarter of the year. In the analysis by age categories, there was a uniform distribution in U15 and an unequal distribution in U17, U20, and senior age categories. In the analysis by playing position, a uniform distribution was found for the pivots and an unequal distribution for goalkeepers, wingers, and defenders. According to our results, we confirmed our hypothesis, evidencing RAE across age categories (specifically in U17 to senior) and playing positions (specifically in goalkeepers, wingers, and defenders).

The overall analysis of our sample indicated more athletes in Q1 compared to Q3 and Q4. Moreover, more athletes were found in Q2 compared to Q4. Similar results were found by Morales Júnior, et al. (2017), who also found the RAE in a sample of 376 male athletes that participated of the 2013 Brazilian National Futsal League (LNF). However, the differences were related to the semesters, indicating that in that season there were more futsal players born in the first semester of the year than in the second.

On the other hand, different results were presented by Carraco, et al. (2020), who analyzed the birth dates of 950 players competing in FIFA Futsal World Cups (years of 2008, 2012, and 2016), and found no significant differences between quarter or semesters, which means that the authors did not find the RAE in their study. A similar result was presented in the study by Lago-Fuentes et al. (2020), which did not identify differences between the birth quarter of professional futsal players in the First Division of the Spanish National Futsal League between 2006-2007 and 2014-2015 seasons. It is noteworthy that the aforementioned studies were carried out only with senior elite futsal athletes, unlike our sample, which was composed of elite athletes from the U15 to senior categories.

Regarding the age categories, the analysis indicated an even distribution in the U15 category. This led us to speculate that the talent selection processes in younger generations of futsal players might not be based on the factors that could have increased the likelihood of the RAE in this sports system (Andronikos, et al., 2016). Similar results

were reported in an investigation with elite female Brazilian handball players conducted by Figueiredo, Gantois, Lima-Junior, Fortes, & Fonseca (2020), in which the RAE was only found in U20 and senior categories, but not in the U18 category. This may indicate a paradigm shift in the talent selection models applied in younger categories, with coaches being more aware of the existence of RAE. However, to confirm these speculations we recommend longitudinal investigations with future generations of elite Brazilian futsal players and the assessment of the knowledge of coaches from different categories about the RAE.

Regarding the U17, U20, and senior categories, uneven distributions of birthdates were reported, with an overrepresentation of athletes born in Q1 compared to Q4 in the U-17 and U20 categories, and in Q2 compared to Q4 in the senior category. These results are in line with findings from other sports. For instance, Lidor et al. (2021) investigated 1397 young Israeli athletes (14 to 18 years of age) of both genders and observed the presence of the RAE in male swimming, basketball, soccer, and handball athletes, with a higher representation of those born in the first two quarters of the year compared to those born in the last two quarters. Additionally, Costa et al. (2021) evaluated the RAE in the Brazilian handball men's teams that competed in the World Championships of the U19, U21, and senior categories, and observed the prevalence of RAE in all categories.

However, Bjørndal et al. (2018) conducted a study with youth, junior and senior male and female international team selections of Norwegian handball players, and identified uneven birth dates distributions for youth and junior male and female athletes (favoring the relatively older players), but not an uneven distribution in the senior category. In other study, conducted by Figueiredo et al. (2021), involving Portuguese soccer and futsal players of both genders from U7 to U19 categories, the authors observed the RAE in futsal only in U7 and U9 categories, with an overrepresentation of athletes born in Q1 and Q2 compared to Q4. These results are different from those found in our study, as we did find the RAE in the upper categories of futsal. In addition, the categories that showed the effect in the study by Figueiredo et al. (2021) were not analyzed in the present study.

According to the constraints-based model (Wattie, et al., 2015), the presence of the RAE among age categories can be observed at different stages of the athletes' sports career, depending on the influence of physical maturation on performance in specific tasks. Other factors presented by this theoretical model (Wattie, et al., 2015) are the influences of sporting popularity in the country, indicating higher levels of competitiveness in youth categories, and the rules for the participation of

young people in the sport context in amateur or professional manner. Thus, due to the culture and a large number of futsal players in Brazil, there is greater concern with competitive aspects, thus increasing the RAE chances (Morales Júnior, et al., 2017).

Although some studies indicate that the RAE decreases or even disappears in senior elite sports (Bjørndal, et al., 2018; Brazo-Sayavera, et al., 2018; Buekers, et al., 2015; de la Rubia, et al., 2020; Joyner, et al., 2020) due to a smaller influence of the physical maturity bias (Cobley, et al., 2009), our study showed that the RAE was maintained even in the senior category. Some explanations can be proposed: 1) the popularity of futsal in Brazil—environmental constraints (Wattie, et al., 2015), as previously explored; and 2) as the effect was found in most of the younger categories, there were increased opportunities for athletes born in the first quarter of the year to reach the senior level.

Regarding the playing position, the analysis indicated an even distribution for pivots and uneven distributions for goalkeepers (no differences identified), wingers (overrepresentation of athletes born in Q2 compared to Q3 and Q4), and defenders (overrepresentation of athletes born in Q1, Q2 and Q3 compared to athletes in Q4). Figueiredo, Gantois, Lima-Junior, Fortes, & Fonseca (2020), in their study with U19 to senior Brazilian handball teams, only found RAE prevalence for male athletes in the wingers and defenders' positions. Despite being different modalities, they have very similar characteristics (invasion team sports), which may justify the similarity between the results. In another sport with the same particularities, the soccer, Towlson et al. (2017) investigated the RAE on young elite soccer players and found a likely small effect in the U13-14 category regarding the playing positions, with lateral-defenders and central-midfielders being older than central-defenders. No differences were found in the U15-16 and U17-18 categories.

In a study with futsal athletes Carraco, et al. (2020) found no differences between playing positions. Our results also differ from those found by Lago-Fuentes et al. (2020), who presented a reversed RAE for pivots and goalkeepers in an investigation of 1873 professional futsal players who played in the First Division of the Spanish National Futsal League. Different physical demands may be the cause of the prevalence of RAE in different categories (Wattie, et al., 2015). Additionally, the needs for different physical and maturational capacities in the various playing positions of futsal must be considered. We did not perform the analysis of playing positions separated by age categories, which did not allow us a more specific discussion.

A limitation of the present study was that it did not compare athletes from different competitive levels and from teams with different classifications. In this study, all athletes competed at national and international levels and played on teams classified as the best in the country. In addition, our study only investigated male athletes; therefore, investigations with female athletes are warranted. It is also noteworthy that, due to the specificity of the sample, our results must be interpreted with caution. Considering the scarcity of studies that investigated RAE on futsal and the influence of multiple factors within each sports context, we suggest that future studies investigate the occurrence of RAE in futsal athletes from different categories according to competitive level, gender, and selection for national teams in different countries.

Our results have important practical applications, suggesting that organizations (mainly national and international federations), clubs, and coaches must consider the effects of the relative age in the processes of talent detection and selection in futsal, as well as in the division of age categories. Our findings indicated that athletes who were born in the last quarter of the year (Q3 and Q4) might not have the opportunity to play in the senior categories, and even to become professional players. Therefore, it is possible that youngsters who could become great futsal athletes are not provided with equal opportunities to develop in the sport.

Ultimately, we observed that the RAE was present in Brazilian elite men's futsal, especially in the U17, U20, and senior categories, and in goalkeepers, wingers and defenders. Our results reinforce the importance of trying to reduce the advantage of athletes who are born in the first quarters (Q1 and Q2) of the year. In addition, we demonstrated that this advantage extends to the most competitive teams of the senior category in Brazil, that is, throughout the entire sporting career of a male futsal athlete. We also highlight the need for national and international federations to review the criteria for the separation of categories, considering other factors than birth date.

In this sense, aiming to reduce the RAE and maturity-related biases, Helsen et al. (2021) propose the grouping of young team sports considering the midway point of athletes' chronological and estimated developmental age. Considering the fact that the RAE was present in most categories in our study, we suggest the division of young futsal categories also considering the athletes' maturation level, with the objective of giving equal opportunities to athletes from all birth quarters to reach senior and/or professional levels.

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