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Sustainable Sport Development: The Influence of Competitive-Grouping and Relative Age on the Performance of Young Triathletes

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Abstract: Competitive-grouping by chronological age is a common organizational strategy in competition which may unintentionally promote relative age effects, for the benefit of older individuals within the same competitive-group, especially in young athletes. This work presents the aim of analyzing differences in young triathletes on their performance within each competitive group. A total of 1243 entries of both sexes, both children—13–14 years old—and cadets—15–17 years old—participated. Firstly, we identified the year in the competitive group and relative-age semester for all the triathletes who competed in a total of six seasons from 2013 to 2018. Secondly, the performance indicator was calculated in all the segments in a triathlon competition for all triathletes. The Kruskal-Wallis Test and U Mann Whitney Test was applied. It was observed that all cadet triathletes born in the first semester of the year (S1, born in January–June) were faster; for both boys and girls. Likewise, it was observed that older triathletes who competed within the same category were faster, but only in males and for both competitive groups: children ($p < 0.0083$), and cadet ($p < 0.0033$). In conclusion, families, coaches and sports political agencies need a greater knowledge and understanding of the effects of relative age and competitive grouping to understand the important role of age in the development of sports talent demonstrated in this study.

Keywords: triathlon; maturity; talent identification; youth; children; swim; cycle; run; performance indicator

1. Introduction

1.1. Contextualization of Triathlon as Sustainable Sport for Personal Development

For a sport to be considered sustainable, it must contain four dimensions: its impact on the social dimension, its impact on the environment dimension, its impact on the economy dimension of the place and its impact on the institutions [1]. The triathlon could be considered a sustainable sport since: (a) there are events for both men and women, respecting gender equality; (b) it is an accessible sport for athletes with disabilities with a wide range of categories; (c) it is an outdoor sport that is practiced in a natural environment like the sea, and in the city, pausing traffic pollution during the event; (d) bicycles are used as an environment-friendly means of transport; (e) it encourages active and passive tourism, and (f) it is an Olympic sport represented by an international federation —International Triathlon Union—and over 120 national federations. However, a number of aspects that are appointed in this section must be carefully considered for triathlon to become a sustainable sport with personal development, within social dimension.

The triathlon is a sport in which, according to its nature and conditions during the competition—swimming in open waters, the use of drafting, the variety of the used route and the terrain type, etc.—it is so difficult to track the performance of the triathlete with a specific field test [2]. It is easier to evaluate performance in other sports than in triathlon [3] such as, for example, swimming or track and field, where influential environmental factors—temperature, humidity, wind, etc.—are controllable or more stable. In those sports, performance is usually measured through personal marks like the time, distance, weight, etc. [3]. Conversely, there are no records or personal marks in triathlon races. Although many authors have used partial or total time as a researching variable [4–6], the nature of triathlon makes it difficult to use the absolute time as a comparative variable, even intra-individually. Each triathlon takes place in specific meteorological conditions and different circuits for the same distance, i.e., Olympic, Sprint, etc., among other factors [3]. Accordingly, a lot of researches relate performance to the athlete's position in the race [4,5]. However, performance is not always represented by triathletes' desired position. For example, in case 1, the triathlete A reaches the finish line 2 s after the faster triathlete, so it is probably a final sprint; in case 2, the triathlete B reaches the finish line 30 s after the faster triathlete. Position of triathlete A and B could be the same, that is, the second place, but they cannot be considered to have had the same performance for both cases. If the variable is defined as the position in the race, the same performance is found statistically in both cases. For this reason, a triathlon performance indicator is needed to analyze young triathletes' performance, and to identify strengths and weaknesses like performance factors in order to develop triathlon talent [7]. Therefore, the triathlon itself as a sport cannot be analyzed as if the three sports were performed independently, due to the competition itself is a key factor in terms of talent identification [8].

1.2. Competitive Grouping and Relative Age in Sports Development

In a separate issue, in order to establish a competitive grouping by political organizations, one of the basic criteria used is the year of birth [9,10]. This is a simple approach, used by entrenched systems such as education, but with some disadvantages for the optimal individual development [11]. However, for a competitive grouping to be effective, we should compare the performance of the triathletes on an equal baseline and consider the maturity differences of the triathletes according to their year of birth or even their month of birth [12]. An individual born in January is almost twelve months older than any other individual born in December of the same year; therefore, both physical and psychological advantages and disadvantages that could appear could be attributable to that [9,12]. The consequences attributed to those differences have been studied as the Relative Age Effects—RAEs—which are more prominent in younger age groups [13–16]. In triathlon, like in other sports, it is considered that groups are brought together within competitive categories with a range of two years—children (13–14 years old)—or three years—cadets (15–17) years old [2,8,17]. The adequacy of this competitive organization has not been investigated and, therefore, it is necessary to analyze the effects of the RAE on young triathletes in order to the abovementioned differences could increase significantly within competitive grouping.

These differences can be interpreted as a systematic discrimination and/or unequal opportunities for those individuals born shortly before the cut-off date of the competitive selection year [18]. On the one hand, the comparison between triathletes with maturity differences at a given time could lead to some individuals having the sensation of not having a sufficient sporting competence or ability and to feel that not all the levels of success are reachable to those individuals [19], which could decrease the self-determined motivation towards sporting practice [20] and could increase the possibilities of dropout [21–23]. As an example of this, we could mention a scientific study with footballers, which shows that those athletes born in the last month of the year, who were not selected for a specific competition, dropout in their career at a young age [24]; this consequence has been studied by some authors as the Galatea effect in sport [25]. Otherwise, opposite results have been evidenced in shooting sports, where dropout was similar in boys and girls without influence from RAE [26]. Although the current research is not intended to assess the dropout rate, it is considered a necessary aspect in the state of art of the issue. On the other hand, decisions made by the coach or scout and the criteria set out in the technification programs, i.e., plans offered by federations to athletes who have shown their giftedness in order to reach high performance, may be conditioned by short-term performance, giving even more importance to maturity aspects than the own potential of the athlete [2,27]. This can undermine the chances for the development of the long-term sports talent [28], which could prevent the vulnerable individuals from the deliberate practices that are needed to reach the expert performance [16,29].

In this sense, regarding the RAEs' influence on the decisions of the coaches, it has been seen in handball matches that those sub-13 male players with a higher RAE had more chances of being selected to participate in the competition than those with a lower RAE of the same category [27]. This data emphasizes the idea that older individuals have greater chances of learning within a competitive environment. In addition, this higher expectation of coaches, or even family, would benefit the most advantageous RAEs individuals, a fact that is known as the Pygmalion effect in sport [25,30]. Thus, the consequences of the RAEs come to form a loop that feeds itself back and which is always in favor of the individuals who most benefit RAEs. This fact is also studied in sport, e.g., the Matthew Effect [25], which needs to be neutralized from a professional point of view.

RAEs appear to be complex phenomena, with sociocultural antecedents combining with inter-individual age, physical differences and competitive grouping to affect sport attainment [9]. Some proposals have been recommended to resolve it. Among these proposals, a change in the age-group cut-off date (e.g., from January to June), rotating cut-off dates from year to year [31], or altering age-grouping bandwidths [9,32] have been recommended.

Many studies have investigated the RAEs in young people and adults in sports (see reviews [9,12,14]). The results are mixed, depending on the age of participants, the sport analyzed, and the sex, among other factors.

RAEs have been widely investigated in team sports. Some research reports the existence of RAE in soccer [15,23,24,33–38], basketball [39], volleyball [33,40,41], baseball [33], hockey [42–44] and handball [27]. Conversely, some research reports no RAE in basketball, handball, American football and rugby [33]. However, literature is relatively scarcer in individual sports. Hancock et al. [16] found RAE in female gymnasts under 15, and inverse RAE in gymnasts over 15. Nakata et al. [33] investigated many Japanese top-level sports. These authors found RAE in badminton and Ekiden (like track and field but long distance). They found no RAE in golf, horse racing and sumo. Medic et al. [45] investigated the RAE in both swimming and track and field. These authors found that RAE exists in both sports and sex, highlighting a greater effect on males and in swimming. Some research evidences that the RAE exists and is consistent in athletics. Pizzutto et al. [46] claimed that the possibility of reaching the IAAF Top ten was dependent on the relative age. Saavedra et al. [47] found that RAE exist in all categories of male. In females, RAE exist in youth and absolute categories only. These authors showed a clear influence of the month of birth in terms of performance observed, especially in lower categories [47]. Similarly, Costa et al. [48] found RAE in young elite swimmers, with stress having a greater effect on boys. Finally, RAE have been observed in international triathletes who participated in the Olympic Games [49]. These authors assessed the quartile of birth of the total sample (male and female, n = 111) and found a greater frequency in triathletes born in the first months of the year (Q1 = January–March > Q2 = April–June > Q3 = July–September > Q4 = October–December; $p = 0.07$). However, the authors also analyzed the semester of birth including Q1 and Q2 in Semester 1 and Q3 and Q4 in semester 2. The authors concluded that only in males, there was a higher presence of Olympic triathletes born in the first semester. Ortigosa-Márquez et al. [17] analyzed the presence of RAE in the national selection processes of Spanish triathletes in both cadet (15–17 years old) and youth (18–19 years old). They also concluded that RAE was present only in males and more significantly in cadet category. In line with these results, Ferriz et al. [8] found a greater medal achievement in cadet triathletes born in the first months of the year, especially gold medal winners. Moreover, RAE was also present in technification programs.

1.3. Aim and Hypothesis

Once a state of art picture is provided, more research is needed to establish how different variables affect talent development in young triathletes—age, sex, performance level, experience, etc. Therefore, this work presents the main aim of analyzing the existence of differences in young triathletes on their performance in competition within each competitive group—children and cadets—considering year and relative-age semester. Based on the results of the previous literature mentioned above, it was initially hypothesized that:

Hypothesis (H1). *Older male triathletes will have faster times than younger male triathletes in overall performance within the same competitive group.*

Hypothesis (H2). *Older female triathletes will not have faster times than younger female triathletes in overall performance within the same competitive group.*

2. Materials and Methods

2.1. Sample

A total of 1243 entries of both sexes, both children—13–14 years old—and cadets—15–17 years old—participated in this investigation (Table 1). Valencian Federation of Triathlon in Spain was informed of the aim of the study and gave its consent for the publication of the data, anonymously, after signing a confidentiality agreement, in line with the principles of the Helsinki declaration [50]. This investigation was previously approved by the Ethics Committee of the University of Alicante (UA-2016-06-0).

Table 1. Frequency of participation according to sex, competitive and relative-age semester group.

Semester of Birth	Female (n = 458)					Male (n = 785)				
	Children (n = 244)		Cadet (n = 214)			Children (n = 371)		Cadet (n = 414)		
	IF1	IF2	CD1	CD2	CD3	IF1	IF2	CD1	CD2	CD3
S1	69	69	52	43	26	81	100	85	69	37
S2	56	50	44	33	16	88	102	86	85	52
Total	125	119	96	76	42	169	202	171	154	89

IF1 = First season in Children; IF2 = Second season in Children; CD1 = First season in Cadet; CD2 = Second season in Cadet; CD3 = Third season in Cadet; S1 = Born in first semester (January-June); S2 = Born in second semester (July-December).

2.2. Procedure

We identified both year in the competitive group and relative age semester for all the triathletes that participated in Valencian Federation League of triathlon in Spain, one of the official Spanish leagues in which a larger number of young triathletes participate, during the previous six seasons 2013–2018—1Y2S = First season in competitive group and second relative-age semester; 1Y1S = First season in competitive group and first relative-age semester; 2Y2S = Second season and semester; 2Y1S = Second season and first relative-age semester; 3Y2S = Third season and second relative-age semester; 3Y1S = Third season and first relative-age semester.

Then, the performance indicator was calculated in all the segments that enclose a triathlon [8] except for the transitions for which data was unavailable. This performance indicator is calculated from the results in the competition, which are obtained through a chip-timing system that allows us to check a partial for each individual with a high level of precision.

In order to avoid bias in the investigation, we calculated the average value of the performance indicator of the competition for each triathlete and season, i.e., the same individual could register different entries for different seasons. Thus, this registry of the data contributes to a greater understanding of the case, due to the same triathlete being able to provide data related not only with its first year of the season—1Y2S—but also with its second year—2Y2S—of the next season.

A performance indicator is expressed from 0 to 10,000; with 10,000 being the score for the best time of the segment and, therefore, the best performance [3,8]. The rest of the triathletes' performances were calculated as a proportional part of the mentioned best time (Equation (1)). It was calculated for all the segments of a same race: swimming performance indicator (SPI) cycling performance indicator (CPI) running performance indicator (RPI) and overall performance indicator (OPI).

$$\mathrm{PI} = \frac{Best\ time}{Personal\ time} \times 10,000 \tag{1}$$

2.3. Statistical Analysis

All continuous variables in the data set were subjected to a normality test (Shapiro-Wilk for $n < 50$ and Kolmogorov-Smirnov for $n > 50$). The data were further subjected to a chi-square analysis and a Kruskal-Wallis Test for non-parametric samples. Firstly, chi-square analysis was used to analyze the representation of comparative groups (equal groups). Secondly, Kruskal-Wallis Test was applied to analyze differences in performance between groups. Moreover, post-hoc test through U Mann Whitney Test was applied to assess the significant differences between the groups. The level of significance was established at $p < 0.05$ in all cases except for the correction of Bonferroni. The statistical programs Statistics Product and Service Solutions (IBM® SPSS® Statistics Version 24.0.0.0) (International Business Machines Corp., Madrid, Spain) and Microsoft Excel® in its 2016 version (Microsoft Corp., Redmond, WA, USA) were used.

3. Results

3.1. Distribution of the Sample According to Sex and Season

The distribution did not overrepresent any semester of birth in any competitive group evaluated ($p > 0.05$).

3.2. Performance in Triathlon According to Competitive Grouping and Relative-Age Semester

First, based only on the relative-age semester in child category, it was observed that the best results were obtained by triathletes born in first semester of the year—*S1*, born in January–June—for both boys (87.5%) and girls (62.5%). In addition, all cadet triathletes born in S1, i.e., males and females performed better in all the dependent variables: SPI, CPI, RPI and OPI. This analysis is based only on the percentages observed in Table 2. Secondly, we observed a statistically higher performance of older triathletes who competed within the same category, but only in males, in both competitive groups: children ($p < 0.0083$), and cadet ($p < 0.0033$).

As a result, U Mann-Whitney test and effect size (Table 3) indicated that, on the one hand, in the children category the younger triathletes—1Y2S and 1Y1S—had statistically lower performance compared to their second season peers—2Y1S and 2Y2S—in all variables, except in RPI for 1Y1S ($p = 0.009$; Figure 1). On the other hand, in the cadet category, it was observed that younger male triathletes—1Y2S—had statistically lower performance than their older peers—3Y1S—in all the segments of a triathlon and lower than 2Y1S and 3Y2S in OPI (Figure 2). In addition, 1Y1S had a lower performance in OPI than older triathletes—3Y1S.

Table 2. Kruskal-Wallis Test for performance for the segments of triathlon according to the different groups (Average ± Standard Deviation).

		Younger → Older						Chi-Square (K-W Test)
		1Y2S	1Y1S	2Y2S	2Y1S	3Y2S	3Y1S	
IFF	SPI	8111 ± 960	8288 ± 974	8339 ± 1062	8576 ± 1072	–	–	7226
	CPI	8394 ± 914	8450 ± 909	8714 ± 869	8604 ± 871	–	–	4226
	RPI	8001 ± 1224	8170 ± 1084	8323 ± 1076	8206 ± 1094	–	–	1805
	OPI	8360 ± 935	8506 ± 896	8710 ± 833	8669 ± 862	–	–	5109
CDF	SPI	8562 ± 996	8604 ± 1287	8438 ± 1074	8676 ± 1072	8253 ± 1296	8740 ± 916	2733
	CPI	8693 ± 858	8933 ± 824	8634 ± 841	8885 ± 833	8490 ± 1188	8966 ± 768	5349
	RPI	8062 ± 975	8284 ± 1136	7989 ± 1147	8255 ± 1005	8005 ± 1181	8293 ± 1057	3656
	OPI	8519 ± 887	8727 ± 968	8506 ± 912	8726 ± 866	8332 ± 1079	8825 ± 813	4783
IFM	SPI	7499 ± 1101	7640 ± 1003	8040 ± 1042	8167 ± 1101	–	–	22,676 ***
	CPI	8089 ± 1059	8335 ± 862	8794 ± 847	8742 ± 873	–	–	34,255 ***
	RPI	7445 ± 1169	7737 ± 1265	8124 ± 1284	8248 ± 1155	–	–	25,939 ***
	OPI	7886 ± 994	8120 ± 943	8519 ± 898	8545 ± 939	–	–	32,431 ***
CDM	SPI	8002 ± 1027	8231 ± 1132	8286 ± 1120	8444 ± 1195	8460 ± 1143	8799 ± 961	13,585 *
	CPI	8406 ± 929	8602 ± 883	8677 ± 804	8773 ± 954	8835 ± 773	8975 ± 863	12,039 *
	RPI	7878 ± 1042	8138 ± 1207	8102 ± 1117	8450 ± 1083	8225 ± 1152	8766 ± 930	19,645 *
	OPI	8280 ± 828	8430 ± 941	8590 ± 803	8737 ± 869	8730 ± 817	9013 ± 714	24,964 ***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; SPI = Swimming Performance Indicator; CPI = Cycling Performance Indicator; RPI = Running Performance Indicator; OPI = Overall Performance Indicator; IFF = Female children; CDF = Female Cadets; IFM = Male children; CDM = Male cadets.

Table 3. U Mann-Whitney Test for performance according to the different competitive groups in males. Only significant Z-statistic values (Bonferroni correction: $p < 0.0083$ for children and $p < 0.0033$ for cadet) are presented. The size effect has been shown in parentheses.

Vs		IFM				CDM			
		SPI	CPI	RPI	OPI	SPI	CPI	RPI	OPI
1Y2S	2Y2S	−3548 (0.26)	−4849 (0.35)	−4063 (0.29)	−4778 (0.35)	–	–	–	–
	2Y1S	−3704 (0.27)	−4111 (0.30)	−4366 (0.32)	−4328 (0.31)	–	–	−3265 (0.25)	−4244 (0.32)
	3Y2S	–	–	–	–	–	–	–	−3038 (0.23)
	3Y1S	–	–	–	–	−3423 (0.26)	−2925 (0.22)	−3902 (0.30)	−4244 (0.32)
1Y1S	2Y2S	−2887 (0.21)	−3939 (0.29)	–	−3520 (0.26)	–	–	–	–
	2Y1S	−3139 (0.23)	−3206 (0.23)	–	−2,946 (0.21)	–	–	–	–
	3Y1S	–	–	–	–	–	–	–	−3114 (0.24)

SPI = Swimming Performance Indicator; CPI = Cycling Performance Indicator; RPI = Running Performance Indicator; OPI = Overall Performance Indicator; IFM = Male children; CDM = Male cadets.

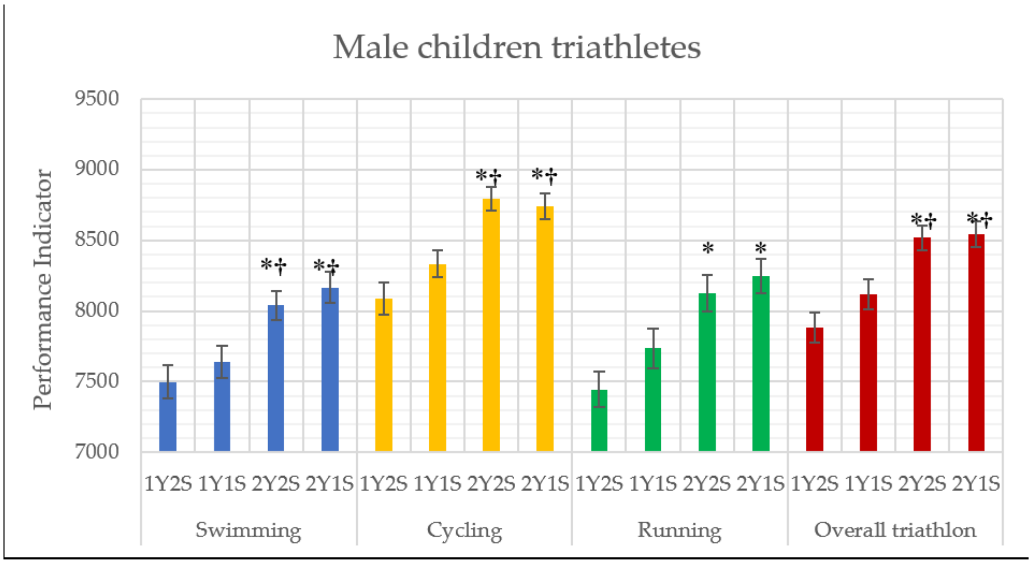

Figure 1. Bars graph representing the results of post-hoc Bonferroni test for the performance difference depending on the relative-age semester and season of male children triathletes (* = $p < 0.0083$ compared to 1Y2S; † = $p < 0.0083$ compared to 1Y1S).

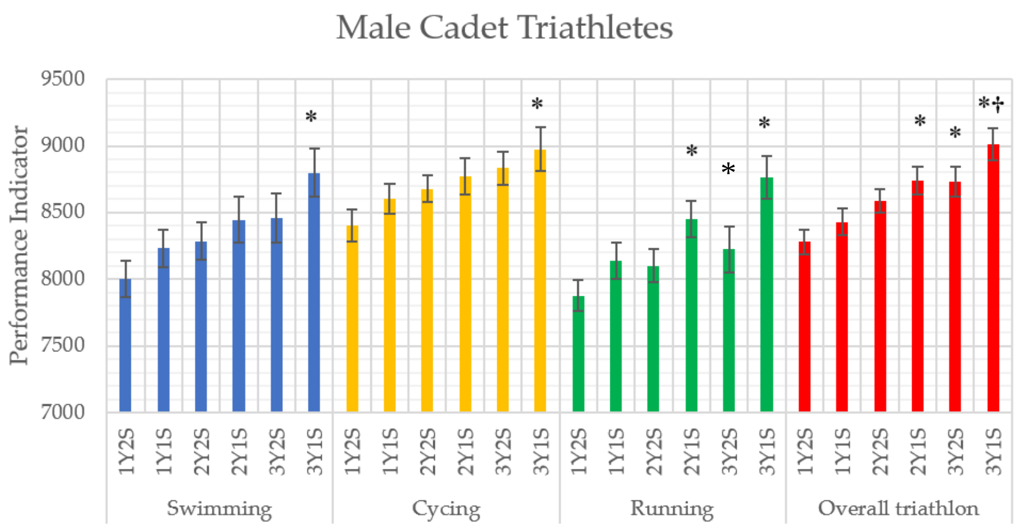

Figure 2. Bars graph representing the results of post-hoc Bonferroni test for the performance difference depending on relative-age semester and season of male cadet triathletes (* = $p < 0.0033$ compared to 1Y2S; † = $p < 0.0033$ compared to 1Y1S).

4. Discussion

The purpose of the current study was to analyze the existence of differences on young triathletes' performance in competition within each competitive group, children and cadets, considering year and relative-age semester.

The most relevant results of this investigation showed a significant performance difference in male in favor of older triathletes in both categories, especially in children. This allows us to accept the proposed research hypothesis (H1).

Although in this investigation we are not studying the RAEs themselves but the involvement of the competitive grouping by the age of birth criteria in the performance, these results are consistent with those observed by other authors, where the girls did not show RAEs in their performance in the national youth selection process in triathlon [17], swimming [51], athletics [13,18] or rugby [52]. Also, Werneck et al. [49] observed no RAEs in adult female triathletes during their participation in the Olympic Games of London in 2012. It is common to find studies which show the very disparate results between boys and girls [53]. Therefore, our results allow us to accept the proposed research hypothesis (H2). Apparently, RAEs and competitive grouping shown in the previous literature are both prominent factors which influence male triathletes in order to have the chance of reaching the highest level of development of sports talent [9].

Although statistical differences attributed to competitive grouping was not observed for girls in this investigation, it should be noted that 62.5% and 100% of the best performances were observed by the female triathletes born in the first half of the year in child and cadet category, respectively. While no statistical differences were found, this high percentage may partly make the difference needed to justify the predominance of females born in the first months of the year in the selection of talent in triathlon or in the fact of achieving a medal [8]. Nevertheless, in a revision and meta-analysis carried out by Smith et al. [54], they concluded that RAEs also affects the female sports context. Indeed, these authors claim RAE magnitudes reduced with age and performance level; possibly suggestive of a declining influence of growth and maturational processes on sporting involvement, that in women happens two years before men [55]. This early maturation by girls, or even a lower level of performance [54], could partially explain the results of this study. However, it should be mentioned that further studies are needed in relation to female triathletes to establish stronger conclusions for this sport. These studies should be based on the different categories and level of triathletes.

The performance shown in competition by triathletes, especially for boys, seems not only to depend on relative age but competitive grouping. As expected, the results of this work show lower performance for younger triathletes within each competitive group and, consequently, higher performance for older triathletes, according to other recent investigations [13]. These results appear to indicate that, on the one hand, relative age could influence the performance in triathlon, as noted that 87.5% and 100% of the best performances were observed by the male triathletes born in the first half of the year in child and cadet category, respectively. Those results may support the relative age as a factor that must be considered for the identification, selection and development of the talent in triathlon [8].

In line with the previous paragraph, there was a more significant effect on the difference in performance within competitive grouping for the lowest category of athletes, i.e., children between 13 and 14 years old, as other recent studies have been claimed [51,54,56–59]. This point seems to reinforce the importance of considering both RAEs and maturation state [60] in the competitive grouping in order for the athlete to develop to the highest level of performance [14]. Being relatively older and, simultaneously, on a higher maturity status corresponds to a substantial advantage in the characteristics that are related to performance [61].

Finally, the identification of the factors for the development of sports talent is a very complex process [11]. There are influential factors of the first level such as genes or training [62]; and second level ones such as RAEs [63]. The results shown by this study prove that for competitive grouping of young triathletes, i.e., children (two-year range), and cadets (three-year range), by political organizations could also be an influential factor for the sustainable sport development of a triathlete. So far, the results of other studies in triathlon do not give any sound conclusion to be drawn from female triathletes. However, in male triathletes it seems to be evident that there exist differences caused by competitive grouping and RAEs [8] and that this needs to be neutralized from the early stages of the sports talent development pathway [17]. Families, coaches and sports political agencies need a greater knowledge and understanding of the effects of relative age and competitive grouping, especially in male triathletes, to understand the important role of age in the development of sports talent demonstrated in this study. Thus, it is necessary to make changes in the organization of competitive groups in order to neutralize those differences that benefit to older athletes, attributed to sport policies, especially for triathletes in the smaller and close categories to peak height velocity [55], i.e., approximately 13–14 years old in males; 11–12 years old in females.

5. Limitations and Future Lines of Research

The study contains some limitations. Although the variable used, i.e., performance indicator in triathlon, is considered an adequate tool for testing the performance in triathlon, especially for tracking, this variable is limited to winner time. This is better than using average time of all triathletes like proposed Clotet and Perez [64] but winner time is up to that individual. As mentioned above in the materials and methods section, the performance indicator in a triathlon was calculated as the average value of the performance indicator of the competitions for each triathlete within a season. Sometimes, for some triathletes, there are two competitions, but for others there are three competitions. Future research should seek to test possible solutions to RAEs in sport, especially in triathlons. However, testing solutions to RAEs is difficult in reality because interventions could potentially be putting youths' future athlete development at risk [65]. This would also be interesting for future research by analyzing how sports development and active lifestyle (for avoiding dropout) are influenced by a coach's style affects (motivational climate, training, formation, autonomy support, etc.), and family or friends' expectations, among other things. Quantitative and qualitative research are necessary to analyze the dropout rate and its causes in triathletes at both sex and level of performance.

6. Conclusions and Practical Proposals

There is a subtle relative age effect in observed performance; i.e., triathletes born in the first half of the year showed a higher performance (although not statistically significant) than the same group born in the second half of the year. Moreover, older male triathletes have a significantly higher performance than younger triathletes within both children—13–14 years old—and cadets—15–17 years old. Contrastingly, female triathletes do not show the same behavior as male triathletes, that is, older female triathletes do not show a significantly higher performance. For this reason, the results shown in this work should be considered in order to rethink a fairer competition system and encourage the development of sports talent, especially when talking about triathlon. It is necessary to make a more specific competitive grouping criterion in which the athletes' ages are closer together. As a proposal, it could be appropriate to establish a separated ranking within the same race, i.e., a different classification for each group—1Y1S; 1Y2S; 2Y1S, etc. Another proposal that could be appropriate is to reserve several places for the youngest triathletes which may reduce dropout [23,53] and the loss of sports talent.

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