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THE RELATIVE AGE EFFECT IN SUCCESSFUL NATIONAL FOOTBALL TEAMS

VPLIV STAROSTI NOGOMETAŠEV PRI USPEŠNIH NOGOMETNIH REPREZENTANCAH

ABSTRACT

The aim of the present study was two-fold; (1) to examine the relative age effect of football players representing their countries and reaching the podium in the FIFA U17 and U20 World Cups between 2009 and 2019, and (2) to analyze the relative age effect according to players' positions. This study was a retrospective cross-sectional design. A total of 756 male football players were included in the study. Dates of birth of football players were grouped into periods of three months in a quartile year. All data is presented in frequency and percentage. Chi-square was applied to determine differences in the inter-group distributions. The odds ratio, confidence interval (95%) and Cramer's V were calculated. The findings emphasized the relative age effect in successful national teams participating last six U17 and U20 World Cup. The relative age effect of U17 was higher compared to U20 ($\chi^2 = 70.974$; $p < 0.001$, $\chi^2 = 39.587$; $p < 0.001$ respectively). As a result of the research, players born in the first quartile of the year have been represented on podium more than those born in the last quartile, significantly. The findings of this study confirm the presence of relative age effect among football players reaching the podium in the last six U17 and U20 World Cup. Coaches and sports scientists are suggested to take the relative age effect into reconsideration to reduce this bias and to improve the system leading to loss of talents as a consequence.

Keywords: talent identification, birth distribution, player selection, annual age grouping

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IZVLEČEK

Pričujoča študija ima dva cilja: (1) preučiti vpliv starosti nogometašev, ki predstavljajo svoje države in dosegajo stopničke v FIFI U17 in svetovnih prvenstvih do 20 let med letoma 2009 in 2019, ter (2) analizirati vpliv starosti glede na položaje igralcev. V študijo smo vključili 756 nogometašev. Datume rojstev nogometašev smo razvrstili na četrtine lets. Za določitev razlik v porazdelitvah med skupinami smo uporabili hi-kvadrat test ter izračunali razmerje verjetnosti, interval zaupanja (95%) in Cramerjev koeficient. Ugotovili smo, da ima starost vpliv na uspešnost reprezentanc, ki so uvrstile zadnjih šestih svetovnih prvenstev do 17 let in do 20 let. Relativni starostni učinek U17 je bil večji v primerjavi z U20 ($\chi^2 = 70{,}974$; $p < 0{,}001$, $\chi^2 = 39{,}587$; $p < 0{,}001$). Igralci, rojeni v prvem kvartilu leta so dosegali značilno boljše rezultate kot tisti, rojeni v zadnjem kvartilu leta. Ugotovitve pričujoče študije potrjujejo prisotnost relativnega starostnega učinka pri nogometaših, ki so dosegli stopničke na zadnjih šestih svetovnih prvenstvih U17 in U20. Predlagamo, da trenerji in športni znanstveniki ponovno razmislijo o učinku vpliva starosti, z namenom zmanjšanja to pristranosti in izboljšanja sistema, ki lahko posledično izgubi talente.

Ključne besede: identifikacija talentov, porazdelitev rojstev, izbira igralcev, letna starostna skupina

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INTRODUCTION

In any sports branch, some children are older than their peers. This is a phenomenon commonly known as the relative age effect (RAE) (Musch & Hay, 1999). RAE is affected by physical, cognitive, and physiological differences. Therefore, athletes born at the end of the year are expected to be systematically disadvantaged throughout childhood (Fumarco & Rossi, 2018). As a result of this, the tendency to select the relatively oldest football players in each category is called RAE (Gil et al., 2014).

From the first stages of life, children are divided into chronological age groups. This grouping aims to provide equal opportunities for children. Similarly, athletes are divided into different game categories according to their chronological age in order to ensure equality in the competition and the same opportunities for success in young people (Musch & Grondin, 2001). For example, in 1997, Fédération Internationale de Football Association (FIFA) set the beginning of the selection year for football players in international tournaments and competitions as January 1. While applying this selection criterion, the primary purpose was to ensure that children have a fair chance of competition and equal success for all (Helsen, Van Winckel, & Williams, 2005). However, the classification of these categories does not seem sufficient due to the 12-month difference between the youngest and oldest athletes. Because significant anthropometric and physiological changes occur in children during adolescence (Augste & Lames, 2011), the athlete born in January will have a one-year advantage compared to his peer born in December (Arrieta, Torres-Unda, Gil, & Irazusta, 2016). However, as Williams pointed out, by the age of 17, most football players are expected to be close to the level of physical and psychological maturity. Thus, it is thought that the psychological and physical differences between the old and young players are reduced (Williams, 2010).

Barnsley et al. (1985) researched RAE in Canadian professional ice hockey players and reported that 40% of players were born in the first quartile of the year (Barnsley, Thompson, & Barnsley, 1985). From then, RAE has become a popular subject in the field of sports science (Wattie, Schorer, & Baker, 2015) and has been researched in many sports branches (Cobley, Baker, Wattie, & McKenna, 2009; Smith, Weir, Till, Romann, & Cobley, 2018) Although there are contradictory findings related to the presence of RAE, many studies reported an unequal distribution of birthdates among athletes in many sport branches, and those born in the first quartile of the same age group were selected more than their peers born in the last quartile (Helsen et al., 2005; Işın & Melekoğlu, 2020; Williams, 2010). However, RAE was not

suggested in sports that did not require physical attributes such as golf and shooting sports (Smith et al., 2018).

Studies investigating RAE in football have focused on professional male football players and youth players (Barnsley, Thompson, & Legault, 1992; Helsen et al., 2005; Salinero, Pérez, Burillo, & Lesma, 2013; Yagüe, de la Rubia, Sánchez-Molina, Maroto-Izquierdo, & Molinero, 2018). However, these studies researched professional leagues and international tournaments and competitions of national teams (World cup, European cup, etc.) (Yagüe et al., 2018). Although RAE is a widely studied topic, studies have mostly focused on the effects of RAE in a single tournament or competition as an investigation of participation trends. Among football players born in the same year, relatively older players have better physical attributes (Malina et al., 2000) which directly or indirectly affect their performances positively (Arrieta et al., 2016). Given this aspect, it can be suggested that RAE may be more prominent among successful teams/players. Thus, success is another essential issue to consider the effect of this phenomenon since professional careers of athletes are built upon those career achievements. Therefore, it is insufficient to focus on only one tournament and participation trends in that specific tournament. A longitudinal approach is needed to present the real setting in football regarding RAE with additional tenets of elite sport like success. For this reason, the aim of this study was two-fold: (1) to investigate the relative age effect among football players reached the podium (Champion, runner-up, and third place) in the FIFA U17 and U20 World Cups between 2009-2019, and (2) to analyze RAE among football players according to their positions. In accordance with the aims of this study and the relevant literature, it was hypothesized that;

1 - Significantly bias distribution among award-winning football players will be present in favor of those born in the first quartile.

2 - A strong RAE will be present particularly among midfielders and defenders.

3 - The RAE will exist throughout the years.

METHODS

Experimental Approach to the Problem

This study examined the birthdates of the football players of the countries that were successful in the FIFA U17 and U20 World Cups from 2009 to 2019. Another aim was to analysis RAE of the football players according to their positions. As mentioned (Williams, 2010), the birth

rate was assumed to be equal in all months (per month; %8.33, per quartile; %25.0). Birth dates of football players are grouped as a four-quartile year (Q); football players born in January, February and March included in the 1st quartile (Q1), football players born in April, May and June in the 2nd quartile (Q2), football players born in July, August and September in the 3rd quartile (Q3) and football players born in October, November, and December in the 4th quartile (Q4). Birth dates, name-surname, playing positions, and country information of the players from the official website of FIFA (www.fifa.com) were obtained. Football players were evaluated in four categories by their playing positions as reported in the squad list: goalkeeper (GK), defender (DF), midfielder (MF), and forward (FW). This study was retrospective cross-sectional design and carried out according to the Declaration of Helsinki. This study was approved by the clinical research ethics committee (2020 / KAEK-230).

Participants

A total of 24 countries participated in each tournament, and each country reported 21 players (three of whom must be goalkeepers) in the squad list. The present study consisted of a total of 756 male football player from the successful countries (champion, runner-up and third place) in the FIFA U17 and U20 World Cups between 2009-2019 were included in this study.

Statistical analysis

Since the cut-off date for football players is accepted as January 1 (González-Víllora, Pastor-Vicedo, & Cordente, 2015), January was accepted as the first month and December as the last month for all statistical analysis. All data used in the study are presented in frequency and percentage (%). SPSS 23.0 and Windows Office Excel were used for statistics. The statistical significance value was accepted as $p < 0.05$, $p < 0.01$ and $p < 0.001$.

For the observed and theoretically expected differences among the distribution of birth dates, chi-square ($\chi 2$) tests were used. Cramer's V was used to determine the effect size. According to Cramer (2016), the effect sizes are divided into 3 as small effect (V = 0.06-0.17), medium effect (V = 0.18 - 0.29) and large effect (V = 0.30). The Odds ratio and confidence interval (%95) were calculated to determine the comparisons of Q_1 vs. Q_4, Q_2 vs. Q_4, and Q_3 vs. Q_4.

RESULTS

In this study, birth month distributions of 756 male football players were analyzed. There was an obvious relative age effect in each year both in U17 and U20 World Cup ($\chi^2 = 70.974$; $p < 0.001$, $\chi^2 = 39.587$; $p < 0.001$, respectively). For all player groups, the number of football players born in Q1 (40.6%) was higher than the number of football players born in Q4 (16.9%) (OR=2.40; 95% CI 1.80-3.20). The effect size observed of the RAE in U17 World Cup noted large in the case of 2011, 2017, and 2019 medium in the case of 2009 and 2015 and small in the case of 2013. The effect size of observed of the RAE in U20 World Cup noted large in the case of 2019, medium in the case of 2011, 2015 and 2017 and small in the case of 2009 and 2013. A significant difference was found among Q_1 vs. Q_4 and Q_2 vs. Q_4 for the entire cohort of players ($\chi^2 = 107.799$; $p < 0.001$). It was determined that football players born in Q_1 in the U17 and U20 World Cup s have nearly 2.50 times more chances to be selected compared to those born in Q_4. Football players born in Q_1 in the last U17 vs. U20 World Cup s were selected more than those born in Q_4 (Table 1.).

According to the playing positions of football players, football players under 17 showed a significant difference in the birth-date distribution for DF, MF, and FW ($\chi^2 = 38.552$; $p < 0.001$, $\chi^2 = 26.200$; $p < 0.001$, $\chi^2 = 9.636$; $p < 0.05$., respectively); whereas football players under 20 showed a significant difference for MF and FW ($\chi^2 = 23.474$; $p < 0.001$, $\chi^2 = 10.900$; $p < 0.05$., respectively) (Table 2.).

Figure 1. The percent of age distribution (by month) of successful national teams' football players at last six U17 and U20 FIFA World Cup.

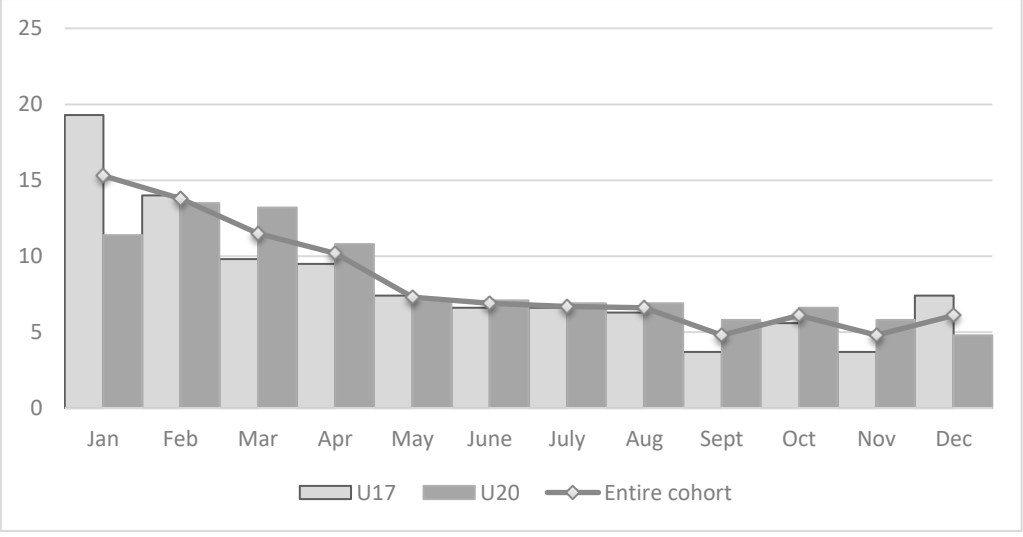

Table 1. The birth month distribution of the football players, chi-square (χ^2), Cramer's V and Odds ratio comparisons (95% confidence interval).

		Quartile of birth						Odds ratio (CI 95%)		
		Q_1 (n; %)	Q_2 (n; %)	Q_3 (n; %)	Q_4 (n; %)	χ^2	V	Q_1-Q_4	Q_2-Q_4	Q_3-Q_4
U17	**2009** (n:63)	27 (42.9)	9 (14.3)	9 (14.3)	18 (28.6)	14.143[b]	0.27	1.50 (0.60-3.76)	0.50 (0.17-1.45)	0.50 (0.17-1.45)
	2011 (n:63)	30 (47.6)	17 (27.0)	10 (15.9)	6 (9.5)	21.127[c]	0.33	5.00 (1.63-15.34)	2.83 (0.88-9.07)	1.67 (0.49-5.70)
	2013 (n:63)	23 (36.5)	15 (23.8)	14 (22.2)	11 (17.5)	5.000	0.16	2.09 (0.77-5.70)	1.36 (0.48-3.88)	1.27 (0.44-3.65)
	2015 (n:63)	23 (36.5)	19 (30.2)	5 (7.9)	16 (25.4)	11.349[a]	0.25	1.44 (0.56-3.70)	1.19 (0.45-3.12)	0.31 (0.09-1.06)
	2017 (n:63)	31 (49.2)	12 (19.0)	13 (20.6)	7 (11.1)	21.000[c]	0.33	4.43 (1.51-13.01)	1.71 (0.53-5.49)	1.86 (0.59-5.89)
	2019 (n:63)	29 (46.0)	17 (27.0)	12 (19.0)	5 (7.9)	19.476[c]	0.32	5.80 (1.79-18.84)	3.40 (1.01-11.49)	2.40 (0.68-8.42)
	All (n:378)	163 (43.1)	89 (23.5)	63 (16.7)	63 (16.7)	70.974[c]	0.25	2.59 (1.72-3.89)	1.41 (0.92-2.17)	1.00 (0.64-1.57)
U20	**2009** (n:63)	21 (33.3)	15 (23.3)	10 (15.9)	17 (27.0)	3.984	0.15	1.24 (0.48-3.18)	0.88 (0.33-2.36)	0.59 (0.21-1.68)
	2011 (n:63)	18 (28.6)	22 (34.9)	16 (25.4)	7 (11.1)	7,667	0.21	2.57 (0.84-7.87)	3.14 (1.05-9.45)	2.29 (0.74-7.08)
	2013 (n:63)	23 (36.5)	12 (19.0)	13 (20.6)	15 (23.8)	4.746	0.16	1.53 (0.59-3.98)	0.80 (0.29-2.24)	0.87 (0.31-2.40)
	2015 (n:63)	28 (44.4)	16 (25.4)	12 (19.0)	7 (11.1)	15.286[b]	0.28	4.00 (1.35-11.82)	2.29 (0.74-7.08)	1.71 (0.53-5.33)
	2017 (n:63)	24 (38.1)	15 (23.8)	11 (17.5)	13 (20.6)	6.270	0.18	1.85 (0.70-4.88)	1.15 (0.42-3.20)	0.85 (0.29-2.45)
	2019 (n:63)	30 (47.6)	15 (23.8)	12 (19.0)	6 (9.5)	19.857[c]	0.32	5.00 (1.63-15.34)	2.50 (0.77-8.11)	2.00 (0.60-6.66)
	All (n:378)	144 (38.1)	95 (25.1)	74 (19.6)	65 (17.2)	39.587[c]	0.19	2.22 (1.47-3.33)	1.46 (0.96-2.24)	1.14 (0.73-1.77)
	Entire cohort (n:756)	307 (40.6)	184 (24.3)	137 (18.1)	128 (16.9)	107.799[c]	0.22	2.40 (1.80-3.20)	1.44 (1.06-1.95)	1.07 (0.78-1.47)

Q_1: January-March, **Q_2:** April-June, **Q_3:** July-September, **Q_4:** October-December, **V:** effect size; **small effect:** V = 0.06 - 0.17, **medium effect:** V = 0.18 - 0.29, **large effect:** V ≥ 0.30, **χ^2:** chi square, Significant difference [a] ($p < 0.05$), [b] ($p < 0.01$), [c] ($p < 0.001$)

Table 2. The birth month distribution of the football players' playing positions, chi-square (χ^2), Cramer's V and Odds ratio comparisons (95% confidence interval).

		Quartile of birth						Odds ratio (CI 95%)		
		Q_1 (n; %)	Q_2 (n; %)	Q_3 (n; %)	Q_4 (n; %)	χ^2	V	Q_1-Q_4	Q_2-Q_4	Q_3-Q_4
U17	**GK** (n:54)	21 (38.9)	13 (24.1)	8 (14.8)	12 (22.2)	6.593	0.20	1.75 (0.62-4.93)	1.08 (0.36-3.22)	0.67 (0.21-2.15)
	DF (n:116)	57 (49.1)	26 (22.4)	14 (12.1)	19 (16.4)	38.552[c]	0.33	3.00 (1.44-6.23)	1.37 (0.62-3.00)	0.74 (0.31-1.74)
	MF (n:120)	52 (43.3)	27 (22.5)	28 (23.3)	13 (10.8)	26.200[c]	0.27	4.00 (1.81-8.82)	2.08 (0.90-4.78)	2.15 (0.94-4.94)
	FW (n:88)	33 (37.5)	23 (26.1)	13 (14.8)	19 (21.6)	9.636[a]	0.19	1.74 (0.77-3.93)	1.21 (0.52-2.83)	0.68 (0.27-1.72)
U20	**GK** (n:54)	22 (40.7)	13 (24.1)	9 (16.7)	10 (18.5)	7.778	0.22	2.20 (0.76-6.36)	1.30 (0.43-3.97)	0.90 (0.28-2.91)
	DF (n:114)	40 (30.8)	36 (27.7)	33 (25.4)	21 (16.2)	6.185	0.13	1.90 (0.91-3.99)	1.71 (0.81-3.46)	1.57 (0.74-3.34)
	MF (n:130)	50 (43.9)	27 (23.7)	20 (17.5)	17 (14.9)	23.474[c]	0.25	2.94 (1.41-6.13)	1.59 (0.73-3.50)	1.18 (0.52-2.64)
	FW (n:80)	32 (40.0)	19 (23.8)	12 (15.0)	17 (21.3)	10.900[a]	0.21	1.88 (0.80-4.42)	1.12 (0.45-2.75)	0.71 (0.27-1.85)

Q_1: January-March, **Q_2:** April-June, **Q_3:** July-September, **Q_4:** October-December, **V:** effect size; **small effect:** V = 0.06 - 0.17, **medium effect:** V = 0.18 - 0.29, **large effect:** V ≥ 0.30, **χ^2:** chi square, **GK:** goalkeeper, **DF:** defender, **MF:** midfielder, **FW:** forward, Significant difference [a] ($p < 0.05$), [b] ($p < 0.01$), [c] ($p < 0.001$)

DISCUSSION

The aim of this study to analyze if RAE exists in the FIFA U17 and U20 World Cup competitions. In accordance with this purpose, the birth dates of the football players of the countries that were successful in the FIFA U17 and U20 World Cups from 2009 to 2019 were examined.

Most of the studies focused on RAE in football have determined that players born in the first months of the year are more successful in this sport (Augste & Lames, 2011). For this reason, clubs in more prestigious or higher leagues have selected the football player considering the RAE (González-Víllora et al., 2015). The most important reason for this is that there is a 12-month difference between the player born in January and born in December within the same calendar year. Because relatively younger players in age cohort will have a positive advantage with regard to physical, physiological and psychological development compared to the relatively smaller (i.e., born at the end of selection year) peer (Vaeyens, Philippaerts, & Malina, 2005). In this context, it is seen that maturity is one of the most determining factors in the selection process of football players (Práxedes, Moreno, García-González, Pizarro, & Del Villar, 2017).

The present study stated an unequal birth month distribution among football players. The birth month's distribution was higher in favor of football players born in the first months of the year, for all competitions. In other words, the number of those born in Q_1 is more than the number of those born in Q_4. For all football players in under 17 and 20, 40.6 % were born in Q_1, while only 16.9% were born in Q_4. Similarly, Williams (2010) was determined that 40% of the countries participating in the U17 World Cup between 1997-2007 were composed of football players born in Q_1, and only 16% were selected from those born in Q_4 (Williams, 2010). Simmons and Paull (2001) emphasized that none of the 59 players in the Swedish football team under 17 were born in the last two months of the selection year. Unlike these results, 39 (66%) players were born in Q_1 (Simmons & Paull, 2001). Helsen et al. (2005) reported that for almost all countries participating in the Youth European Cup, those born in the Q_1 were more than those born in Q_4. These results may be an indication that coaches tend to select football players born in Q_1. Since only successful national teams are evaluated in this study, it is not possible to comment for the last six U17 and U20 World Cup s. However, as stated in previous studies (Helsen et al., 2005; Williams, 2010), the rate of relative age effect is high in youth tournaments.

It may explain the relative age effect of successful teams, as there are similar results in the last six tournaments.

The relationship between RAE and success has been investigated in limited number of research. Ford and Williams (2011) investigated relationship between RAE and success in male professional team sports (football, baseball, ice hockey, and Australian football), and reported no distribution bias for relatively older or younger players. However, Ferriz-Valero et al. (2020) presented a strong RAE among medal owners in Valencian Triathlon League between 2012 and 2016 in favor of early born athletes. Similarly, Bilgiç and Devrilmez (2021) noted a strong RAE among European badminton players reaching the podium in U15, U17 and U19 continental championships in favor of those born in Q_1. Those aforementioned results might seem incompatible with each other, the nature and characteristics demands of sports regarding team and individual are better to be taken into consideration. Although Ford and Williams (2011) reported contrary results, our findings confirm the presence of RAE in a team sport which calls for further research in the field.

There are several possible theories about observing the RAE in youth football players. First, relatively older players in age cohorts are expected to be better physical performances and more physically mature than their younger counterparts. Studies in Canadian hockey players as well as Portuguese and Mexican football players show that skeletal maturity may play a significant role in the selection process of football players (Malina, Meleski, & Shoup, 1982; Malina et al., 2000). Gill et al. (2014) stated a significant relationship between the anthropometric and physical performances of young football players and their chronological ages. Those born in the first quartile were taller than their peers born in the other quartile. Moreover, those born in Q_1 performed better in the physical tests (velocity and agility) (Gil et al., 2014). Carling et al. (2009) reported that football players born in Q_1 performed better than their peers born in the following quartiles, but there was no significant difference in any of their fitness levels In the light of these results, these differences in physical performance in favor of those born in the first quartile of the year increase their chances of being selected. It will cause the coaches, who want to benefit from these differences positively, to tend to select football players born in Q_1.

Another theory is that the players born at the beginning of the selection year are seen to be more talented by coaches. This allows them to be transferred to elite teams and, as a result, to receive higher quality coaching (Helsen, Starkes, & Van Winckel, 1998; Jiménez & Pain, 2008). Helsen et al. (1998) reported that football players who were born at the end of the year from the age of

12 tent to drop-out of football more. Nevertheless, Jimenez & Pain (2008). have thought that the RAE will lead to negative processes in the selection of athletes. They reported that compared to his peers born earlier in the same selection year, the chances of being selected, although they were more talented as athletes, being born in the last quartile of the year were low, resulting in potential talented players dropping-out of sports.

Another aim of this study was to research the RAE of football players according to their positions. This present study observed RAE for all positions except GK for U17. RAE found in MF and FW for U20. Salinero et al. (2013) researched RAE by positions in England, Spain, Italy, France and Germany professional football. MF was the one most affected by RAE. Among the top five leagues, RAE was not observed only in the Premier league' midfielders. The second position most influenced by RAE in European leagues was DF and existed in England, Italy, and Spain. RAE in FW only appeared in England. Hurley et al. (2019) found that among the international athletes, RAE was observed in DF and MF, whereas USA athletes showed RAE for MF and GK. Del Campo et al. (2010) stated that playing position did not have any effect on RAE. Based on all these results, the relationship between playing positions and RAE could not be found clearly. This may be because teams select players for their game plans and strategy, because it can be expected that this effect will be higher in goalkeepers and defenders where physical characteristics predominate, and this effect will be less in midfielders where technique is at the forefront. However, as a result of this study, the existence of RAE in the selection of midfielders in both age groups supports the idea that teams selected players according to their game strategies.

Limitations of the study

There are certain limitations of this study. Firstly, all the data analyzed in the research were obtained from the official website of FIFA. Although it is considered the most reliable source, certain limitations regarding data should be considered accordingly. Anthropometric and performance-related data were not analyzed and related within the concept of RAE due to limited data source. Further studies are needed to consider those variables to reach a broader conceptualization and understanding of RAE from different tenets of sport performance. Furthermore, only football players reaching the podium in the last six FIFA U17 and U20 World Cups between 2009-2019 were included in this study. Thus, further research is better to consider a broader period of time for both youth and adult categories.

CONCLUSION

The present study revealed a strong relative age effect in the last six World Cups. In both the U17 and U20 World Cups, the number of football players born in Q_1 was higher than the number of football players born in Q_4. It can be thought that coaches would have chosen this direction in order to benefit from the physical superiority of those born earlier in the same selection year. Considering that those born in Q_1 U17 have more chances to be selected, the same effect is expected to continue in the U20. This is because unselected players tended to drop-out football. Therefore, the fact that more athletes are active in the first quartile leads to the selection of more athletes than the first quartile. This will result in successful clubs having more players in the first quartile. However, in this study, the relative age effect of U20 World Cup decreased compared to U19 World Cup. The reason for this may be that physical differences decrease with maturation. Because coaches now focus on skills rather than physical attributes.

Practical Implications

- Coaches and sports scientists should be aware of the relative age effect and attempt to reduce this effect.
- Talent is as important as physical attributes. Considering that physical differences decrease with maturation, coaches should pay attention to the period of time instead of a point in time while considering talent.
- In younger age groups where physical differences are clearer, tournaments can be designed to cover two different age groups (1st group: January-June; 2nd group: July-December). In this case, both the advantages of more advanced physical attributed are eliminated, and the development of talented athletes can be followed.
- Finally, talent selection is very important at the U17 level. Players who are not selected in this age group usually drop out football. In this case, it leads to double advantages to athletes in the first quartile as being selected for the U20 national teams too.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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