HOSTED BY

ELSEVIER

CrossMark

Available online at www.sciencedirect.com

ScienceDirect

Journal of Sport and Health Science 3 (2014) 273–278

www.jshs.org.cn

Original article

The relative age effect has no influence on match outcome in youth soccer

Donald T. Kirkendall

Center for Learning Health Care, Duke Clinical Research Institute, Durham, NC 27715, USA

Received 30 April 2014; revised 5 June 2014; accepted 3 July 2014
Available online 31 July 2014

Abstract

Purpose: In age-restricted youth sport, the over-selection of athletes born in the first quarter of the year and under-selection of athletes born in the last quarter of the year has been called the relative age effect (RAE). Its existence in youth sports like soccer is well established. Why it occurs has not been identified, however, one thought is that older players, generally taller and heavier, are thought to improve the team's chances of winning. To test this assumption, birth dates and match outcome were correlated to see if teams with the oldest mean age had a systematic advantage against teams with younger mean ages.
Methods: Player birth dates and team records ($n = 5943$ players on 371 teams; both genders; U11–U16) were obtained from the North Carolina Youth Soccer Association for the highest level of statewide youth competition.
Results: The presence of an RAE was demonstrated with significant oversampling from players born in the 1st *vs.* the 4th quarter (overall: 29.6% *vs.* 20.9% respectively, $p < 0.0001$). Mean team age was regressed on match outcomes (winning %, points/match, points/goal, and goals for, against, and goal difference), but there was no evidence of any systematic influence of mean team age and match outcomes, except possibly in U11 males.
Conclusion: Selecting players based on physical maturity (and subsequently, on age) does not appear to have any systematic influence on match outcome or season record in youth soccer suggesting that the selection process should be focused on player ability and not on physical maturation.
Copyright © 2014, Shanghai University of Sport. Production and hosting by Elsevier B.V. Open access under CC BY-NC-ND license.

Keywords: Match outcomes; Relative age effect; Soccer; Youth sport

1. Introduction

Youth sports should be an opportunity for young players to improve their skills, increase their tactical awareness, gain physical and psychological fitness, and, most importantly, have fun playing a game with others of similar abilities. Unfortunately, youth sports like soccer have become so organized that parents, coaches, administrators, and players strive to move up from recreational play to the more competitive travel teams. Each year, the goals are to play with and against better players, be taught by better coaches, and to play in more competitive matches and leagues. Next year, the cycle repeats itself.

One question that probably should be asked (but has not to my knowledge) is what do the selecting coaches look for at these annual auditions. Perhaps the coaches are looking at each player's skills, inherent physical characteristics (e.g., speed) or other less objective features like "soccer intelligence", "coach-ability", or potential. The selection process is to serve what purpose? Are coaches trying to find players who fit their "style" and want to try and develop them to be successful in the next age group or do they look for players who will give them the best opportunity to win now? While "travel team" coaches have yet to be surveyed about their prioritization of selection criteria, the prevailing thought is that winning is at the core of the selection process, whether decisions are made consciously or unconsciously.

E-mail address: Donald_kirkendall@yahoo.com
Peer review under responsibility of Shanghai University of Sport.

2095-2546 Copyright © 2014, Shanghai University of Sport. Production and hosting by Elsevier B.V. Open access under CC BY-NC-ND license.
http://dx.doi.org/10.1016/j.jshs.2014.07.001

Most youth leagues are set up according to age with arbitrary cutoff dates in order to minimize developmental differences between age and ensure more equitable competition.[1] When combined with a coach's preoccupation with winning, this well-intentioned policy has resulted in players being selected who, on some level, appear to be older relative to their similar aged peers; they are early maturers. The assumption is that the interaction of skill, tactical understanding, cognitive ability, maturity, physical stature, and more has a greater probability of being found in the oldest players in each age grouping. The most widely recognized proxy being height.[2,3]

This favoritism toward selecting players born early in the birth year has been termed the relative age effect (RAE). It was first identified in the Canadian hockey and was hypothesized to play a role in success in hockey, defined as playing in the National Hockey League.[4] There have been subsequent descriptions of an RAE in most team sports like basketball,[5] volleyball,[6] soccer,[7–14] baseball,[15] *etc*. The presence of an RAE in individual sports is not as ubiquitous, but is apparent in skiing (downhill and Nordic),[1] tennis,[16] archery (JH Williams, personal communication), and, oddly, National Association for Stock Car Automobile Racing (NASCAR).[17] Individual esthetic sports (dance, gymnastics, figure skating, diving)[1] seem less prone to an RAE. The selection process that results in an RAE has been reported in North America, Asia, Europe, Africa, and South America. Interestingly, the RAE was reversed in African U-17 teams.[18]

In an attempt to determine factors that influence player selection and retention, numerous papers have explored a multitude of variables. Coaches may be looking for differences in performance characteristics like endurance, speed, *etc*., between players born early (first quarter) *vs.* later (last quarter) in the birth year hoping that the older player will have superior performance in all the fitness variables. But the only difference Figueiredo and colleagues[19] found in 11–14-year boys was in endurance. Maybe the coaches are trying to choose players with the highest skill level. The same project showed no difference in dribbling, passing, shooting skills[19] and that has been reported elsewhere.[20] A main difference between players selected for more advanced teams early (i.e., early maturers) *vs.* younger (late maturers) that has been reported is physical maturation (as height and mass) and the accompanying performance factors known to be influenced by muscle mass (sprinting, explosive power).[21] When the smaller players are not selected, they do not have the advantage of better coaching, teammates, and competition[22] and as a result fall behind in skill performance[23] and are more likely to drop-out of the sport.[22,24,25] This pattern is not consistent with the goal of developing all players in youth sports.

While the RAE and the reported differences or similarities within an age group are most apparent during adolescence, its presence is less apparent in adulthood amongst professionals. It appears that late maturers continuing in the game eventually catch up (physically, physiologically, emotionally) with their early maturing counterparts[26] and on a couple levels have more successful careers in terms of professional longevity and salary.[27]

These findings may reflect a conscious or unconscious desire by the selecting coach to select players who offer the best opportunity to win resulting in the RAE. What is interesting is that despite this issue being recognized and studied for nearly 30 years, there are no reports that say whether the process used to select participants for a team actually results in better team performance where performance or success is defined as variables like winning percentage or points per match. If the selection process as currently conducted works as intended, "older" teams would have a better record than the "younger" teams. Reported here are data that show the presence of an RAE in youth soccer in the US and the lack of any correlation between team age and team performance.

2. Methods

The US Youth Soccer Association is one of the governing bodies that regulate youth soccer. Each US state has an affiliated youth soccer association that governs youth soccer on the local level. The North Carolina Youth Soccer Association (NCYSA) oversees competitive soccer at the recreational (U5–U18 plus adults), Challenge (1st level of travel soccer requiring an audition, U10–U18), and Classic (highest level of travel soccer, also U10–U18) for both males and females. In North Carolina, the boy's scholastic season is August through November and the girl's scholastic season is February through May. Players are restricted from playing on both a club and a school team, so the seasons of interest were fall 2010 (females) and spring 2011 (males), the seasons of most participation.

The NCYSA provided the database on Classic players for the competitive year 2010–2011. The database was de-identified for name, player ID, address, and other identifying data. What was retained was a database that contained each player's birth month, birth date, birth year, competitive age group (i.e., U12, U14, *etc.*), gender, and team name for the age groups with the greatest participation (U11–U16). The competitive year cutoff for North Carolina (as defined by US Youth Soccer) begins at August 1 and ends at July 31. Each player's birth month and year were recoded to the 1st quarter through the 4th quarter of the birth year. Players who were "playing up" (e.g., a U12 age player on a U13 age team) were coded as the 5th quarter and then excluded from analysis.

The NCYSA posts the season's records on its website. A database was developed that contained each team's name, age group, gender, matches won, matches lost, matches drawn, goals for, and goals against. From this, winning percentage (wins/total number of matches), win + draw percentage (wins + draws/total), goal difference (GF-GA), and points, based on the traditional 3 points for a win and 1 point for a draw.

In order to correlate team age with team performance, a statement of team age needed to be developed. Within each competitive age group, August 1 was recoded as "1", August 2 was recoded as "2", *etc*., through July 31 recoded as "366".

Download English Version:

https://daneshyari.com/en/article/1084149

Download Persian Version:

https://daneshyari.com/article/1084149

Daneshyari.com