

COMPARATIVE ANALYSIS OF THE SPORTS PERFORMANCE OF U18 RUGBY PLAYERS AT AN INTERVAL OF 16 YEARS

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Abstract

Aim. The study presents the results obtained by two groups of rugby players under the age of 18. Recent data from Swedish boys show that physical activity in children aged 11-12 years was a quarter lower in 2013 compared to 11-12 years in 2000 (Raustorp, Pagels, Froberg, & Boldemann, 2015). The analysis of the effort component of the competitive model reveals the following: effective game time 38', edges 30-35, ordered piles 25-30, agglomerations 160-180, phases game 120-140. The nature of the various types of effort encountered in the game of rugby is as follows: waiting, walking, running at different temperatures, fighting, pushing, shocking, jumping. During the last two decades the tactics have undergone a number of changes generated by adaptations of the rules of play and thus the training programs have correlated with the new guidelines. In this context

Methods. The values resulting from the measurements have brought to the attention of specialists a lack of training and an inferior level of athletic qualities between the two groups. The values recorded in the following tests were compared: Suspension test. Sargent test. Cooper's test. Number of passes at 5 meters front alternately left-right. 30 Seconds Sit To Stand Test. The first testing took place in 2008. Testing was conducted at an interval of 16 years, both batches were performed at the date when the 18-year-old tests were performed.

Results. A difference of 35.20% is found between the two measured values (Fig 1) in $\frac{3}{4}$ compartment, the group two having a lower readiness level. The next test was - Hanging tractions, where we find differences between both compartments, the results of the players in the second group were not inferior to those in the first group, in the case of the $\frac{3}{4}$ compartment.

Conclusions. We believe that account should be taken of the generation-specific differences in health policy forecasts and future forecasts, selection in performance sport and, in particular, in the design of selection programs, early preparation and the correlation of results with the performance of other generations of athletes.

Keywords: Adapting the preparation, understanding the context, predicting evolution or evolution.

Introduction

Although there are several decades in which the specialists of the field presented in different ways and perspectives the discrepancy between scientific research of the field and concrete practice, in the field, in which the coaches proceed intuitively, usually following the example of their own coaches, even after the courses were presented with the latest selection and training techniques. This task can be fulfilled by the coach by playing his managerial role, through using the resources of the club for building the proper knowledge environment. Creating knowledge in organizations helps the rugby club to establish a competitive advantage (Nonaka, 1994; Perry et al. 2006), The truth is that a good theory and training methodology represents a model of effective action provided that it is accepted and presented in a known language. There is talk about the increasing loss of humanistic character of sport and the dehumanization of the athlete in competition, but it starts from training, from doping substances, anabolics and other products that artificially increase the capacity for performance, but have negative effects on physical and mental health. Specialty knowledge is gained as well through experience (Carter, 2006) - most of the rugby coaches being former rugby players -, as through the coaching courses which a person has to attend if he/she wants to receive his license, which gives him the right to train a rugby team.

The study compares the population of athletes under 18 to 16 years of age. The structure and characteristics of these two groups of subjects at a distance of 20 years are obviously different. There is a worldwide consensus on the health benefits of regular engagement in physical activity of at least moderate intensity (Haskell et al., 2007). The studies presented show values from adults but from the young population and are focused on adults rather than athletes, but it is important to add a note on the young generation. So far, it may be true that every recent generation is doing better than its predecessors. However, in some countries, this peak may have already been exceeded. Recent data from Swedish boys show that physical activity in children aged 11-12 years was a quarter lower in 2013 compared to 11-12 years in 2000 (Raustorp, Pagels, Froberg, & Boldemann, 2015). Therefore, in many countries, initiatives are introduced to improve population activity levels (Reis et al., 2016). Following the idea of the first 'tobacco free generation' (Beaglehole, Bonita, Yach, Mackay, & Reddy, 2015), we may also strive for the first inactivity free generation, to prevent inactivity-related

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health problems in the future. This is important because life style over the complete life course may contribute to health problems and disease at older ages.

Rugby effort is characterized by varying intensity, alternating maximal and submaximal efforts with moderate and small, anaerobic efforts with aerobic, neuromuscular efforts with cardiorespiratory and endocrine-metabolic efforts. The analysis of the effort component of the competitive model reveals the following: effective game time 38', edges 30-35, ordered piles 25-30, agglomerations 160-180, phases game 120-140. The nature of the various types of effort encountered in the game of rugby is as follows: waiting, walking, running at different temperatures, fighting, pushing, shocking, jumping. Compared with previous research, there are substantial changes in the game of rugby: the notable decrease in the number of edges in a game from 40-50 to an average of 32.95, so "30-35 edges per game. In the same context, the evolution of the results to the ordered pile was framed by decreasing the values from 35-40 ordered pile per game to an average of 26.54 per game, so "20-30 ordered pile per game. At the same time, we see the sharp increase in the number of agglomerations from 60-80 to an average of $x = 170$, so about 160-180 agglomerations in the game. These developments suggest a transfer of effort from the zone of fixed moments, where it is mostly static, to the zone of fixing points, where effort is mostly dynamic, so we can talk about a dynamization of effort, which implies an increased demand from the players. The third aspect is that the difference between the two components of the game was emphasized, namely the fixed moments and the fixing points. The next is the increase of more than 1' in the value of the average effective playing time as well as the sharp decrease in the average number of playing phases reveals an optimization of the average duration of a playing phase to $x = 17$ ". These results in conjunction with the distribution of the play phases on the long-range levels mean a transfer of the alactacid anaerobic zone requests to the lactic acid anaerobic zone, so that the proportion of the play phases with a duration of more than 20" doubled from 15% to 30%. An overview of the rugby effort is not satisfactory if a distinction is not made between the forward and quarter compartments. Thus, the forward compartment has the main task of gaming the possession of the ball at fixed moments and then the use of possession in actions characterized by penetration play and participation in agglomerations. In order to gain possession of the balloon, the forwards support the efforts of force, detention and resistance in the regime of other qualities, required by binding, pushing and shock of pushing both in ordered piles and in agglomerations. Also, in the group-penetrating and supporting game they put short and medium range speed efforts, explosive contact force and resistance pushing force to which repeated physical contacts are added, due to special mental stresses.

The main task of the three-quarter compartment is to rapidly transmit the balloon to the free zones in order to achieve the positional or super-numerical advantage and the marking of the tests. Thus, the structure of its specific effort is characterized by the manifestation of reaction, execution and movement speed, dynamic and explosive force, high level skill, resistance in the regime of these qualities, combined with a developed sense of anticipation and ability to analyze and decide quickly. Consequently, the physical training of rugbyists is imperatively necessary to be modeled according to the competition specifics, as it follows from the previous statements. In this study we have resumed a series of training programs used more than 20 years ago coordinated by the coach in close liaison with the team captain. The role of the team captain is very important throughout the overall training period. In a rugby team, the coach has a leading position. He has to influence his players and the persons he is working with in such a way that together they fulfill the objectives of the team (Conquet and Devaluez, 1978). Match records have highlighted the emergence of technical mistakes that we have not seen in recent years. Use of recordings to guide training, video images, further support quantitative data (Groom R, Cushion C. Coaches perceptions of the use of video analysis: A case study and provide coaches and athletes with visual feedback to change behaviors and further develop understanding and awareness (Groom R, Cushion C, Nelson L.). As part of a collective approach, recognizing and integrating the experiences of athletes can help practitioners to be more "athlete-centered" with the well-being of players at the forefront of contact coaching (Mouchet et al., 2013).

Methods

Seven tests were used to carry out this study, which we present below - Test suspension. Description of the sample - the player jumps and grabs the support bar. Hands are placed in pronation, body immobile, lower limbs in full extension. A traction is performed, the chin must pass over the bar, and the player remains suspended and the time it remains in position will be recorded, necessary materials: support bar, timer. Sargent test. Description of the sample - two measurements are made: - the first, when the player is on the ground, near the wall and with the arm raised in maximum extension; - the second, when the player will perform three jumps, from a semi-flexible position, without elk, 30 cm from the wall. The extended arm will mark the maximum place of the jump on the wall. The best jump that will be subtracted from the first measurement, noting the difference, which will serve as the criterion of appreciation, necessary materials: - a flat ground surface - a vertical calibrated wall from 5cm to 5cm. Cooper's test. Description of the sample - the player has to perform a resistance run for 12 minutes. The start is unobtrusive, with the timer running simultaneously. After 12 minutes of running, at the timer signal, the player stops at the place where it is located, until performance recording, necessary materials: running space marked and measured. Timer. In the next test, the passes were counted at 5 meters, face alternately left-right during one minute. The 30 Second Sit to Stand Test is also known as 30 Second Chair Stand Test (30CST), was initially designed for testing leg strength and endurance in older adults. This test was developed to overcome the floor effect of the five or ten repetition sit to stand test in older adults (Rikli, Jones, 1999). There is also some consideration for its use as a physical performance test in the younger adult and athletic populations, but further

investigation may be necessary. The two groups consisted of subjects less than 18 years of age with the same age. Running sample 10x5m. Required materials: a flat surface with a length of 5m and a width of 1m. Description of the sample: from the feet, with free departure, the player must run at a maximum speed of 10 times 5m. Steering changes will be made beyond the marking line, existing at each end. The timer will be 10m from the track, laterally starting the timer when the player's back foot leaves the ground. Traction Sample - Sample Description: The player jumps and grabs the support bar. Hands are placed in pronation, body immobile, lower limbs in full extension. As many tractions as possible shall be made, the chin shall exceed the bar level, and a full extension shall be made after each traction. The values measured in 2008 belong to group one. Players in the second group under the age of 18 have been tested this year. The program through which we intervened for the purpose proposed was structured in several packages. Thus the first training program was P01, it was - Commute + push, the collective was divided into pairs and executed: Running in tempo 4/4 , 10 m (round trip). Push 2 to 2, continuous 7 min. Tempo 4/4 run, 10 m, round trip. Push 2 to 2, continuous 7 min. Tempo running 4/4, 15m, (round trip). Push 2 to 2, continuous 5 min. Tempo running 4/4, 10m, (round-trip). Push 2 to 2, continuous 10 min. Tempo running 4/4, 5m, (round trip). Push 2 to 2, continuous 7 min. Break 2-3 minutes. P02, Large Commute + Jumping. P03, Tempo varied+passes+pushes+battle. P04, Intervals. P05, Jumping. P06, Circuit A. P07, Jumping+running. P08, Circuit B. P08, Command - execution. P10, Game Forms - The team of players is divided into two teams, which will alternately evolve as follows: at the signal the first team goes into the game played until the last player reaches the ball, then goes into a group-penetrating game, also until all players take part. At this point, a clutter will be made and the ball will be passed on to the other team, which will alternate the forms of the game, create a clutter and retransmit the ball to the first team. This exercise is performed between the two target fields until the teacher orders. Congestion is carried out in the space of 15m. P11, Margins+Piles+Plywood - The collective is divided into groups of 8 players. They will go through a circuit consisting of 5 workshops: start from workshop no. 3 / reposition from the edge on zone II , mol , JGP on 15m / ; run tempo 3/4 to workshop 5 / pick up a colleague and keep 5" / ; run tempo 2/4 to workshop 1 / tidy pile or yoke with push 10m / ; run tempo 4/4 to workshop 2 / 3 plywood / ; run tempo2/4 to workshop 4 / 3x10m / ; ride back to workshop 3. P12, Jump+Push - Work on groups 3 players like this: one player will execute and two will assist him. The performer performs 5 jumps, running in tempo 4/4, on 15 m, with running pass and 5 plonjoins, turning 180*, running tempo 2/4 with running pass on 10m, 10 genoflexions with extensions. The analysis and interpretation of the results recorded after the six weeks of training is the content of a future work.

Results

In this paper we present the measured and harvested values from the applied tests and compare them with those we measured 20 years ago. The first values were recorded in the sample: Suspension test - The values recorded by the forward compartment players in the second group are lower compared to those recorded 16 years ago. A difference of 12.83% is observed between the two measured values at the forward compartment and a percentage difference of 10.39% for the three-quarters compartment. The second test was the Sargent test, where we found differences between both compartments, the results of the players in the second group were lower than those in the first group.

Table 1. Values compared between the two groups measured at the first test - on the two compartments

Tests	group one		group two	
	forward	3/4 lines	forward	3/4 lines
1. Suspension test.	51.25	54.57	28.6	48.9
2. Sargent test.	51.25	51.43	48.3	49.1
3. Hanging tractions	8.18	17.7	5.3	9.4
4. Speed running sample 10x5m	20.2	18.06	21.6	19.2
5. Cooper's test.	2634.38	2882.1	2560.2	2780.15
6. Number of passes at 5 meters	26.3	28.2	24.2	26.4
7. 30 Seconds Sit To Stand Test	28.2	31.4	24.6	32.8

For the three-quarter line compartment the following values were recorded in the sample: Hanging tractions - The values recorded by the players in the second group are lower compared to those recorded 16 years ago. A difference of 35.20% is found between the two measured values (Fig 1) in $\frac{3}{4}$ compartment, the group two having a lower readiness level. The next test was - Hanging tractions, where we find differences between both compartments, the results of the players in the second group were not inferior to those in the first group, in the case of the $\frac{3}{4}$ compartment.

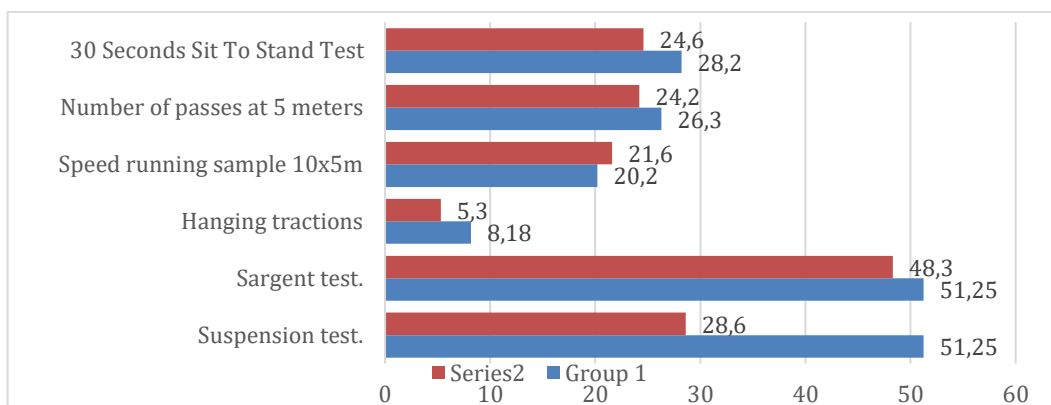


Figure 1. Graphical representation of the measured values and comparison between the two groups – the forward compartment.

We have seen that there is a situation where the second group, of those who are now involved in the training program, are performing better than those measured 16 years ago. For the sample of 30 Seconds Sit To Stand Test, (Fig 2) where the group values were 32.8 compared to 31.4, higher compared to group 1 by 4.26%.

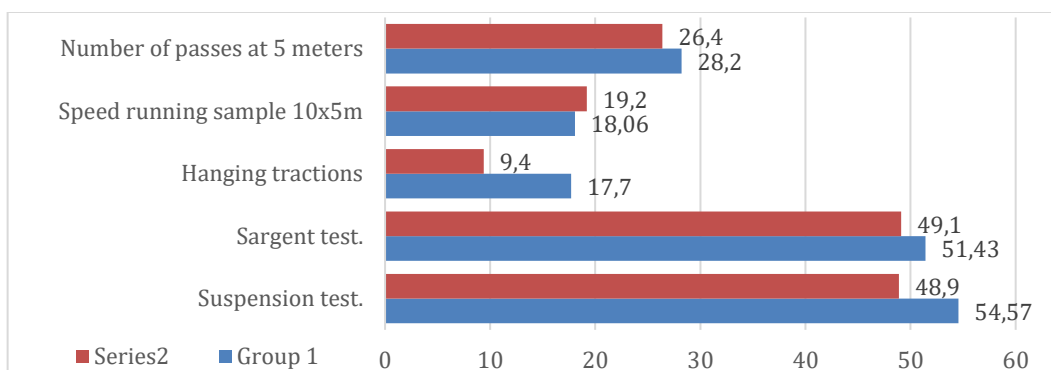


Figure 2. Graphical representation of the measured values and comparison between the two groups - the compartment of the back lines

Conclusions

The findings of this study show, overall, that the values analyzed. the recent ones compared to those measured 16 years ago have a lower sports participation and thus a lower specific training level. They are not accompanied by clear inter-generational differences in levels of awareness of the importance of individual physical and technical training. Especially generations born between 1985 and 1990 reported a sporting participation greater or equal than their predecessors. But compared to athletes who today are under 18 years old, it is superior. Even in retrospect. throughout life, much lower participation rates have been observed in sport in recent generations. The results of this cross-cutting study show that sporting performance is limited for those who are now part of the current generation of athletes. The study carried out gives a significant picture of these trends. A systematic review published in 2009 showed that. for adults in European high-income countries. shows that leisure time and physical activity in the sporting context tends to increase over time. compared to the occupational physical activity that is declining (Knuth & Hallal). 2009). More recently published studies have shown a reduction in adult physical activity in Poland (Kwasniewska et al. 2016). in the USA. United Kingdom. Brazil and India (Ng & Popkin). 2012). in Canada (Foulds. Warburton. & Bredin. 2013). and China (Ng. Howard. Wang. Wang. Su. & Zhang. 2014). We mention that in the presented studies there is no correlation of age groups. but the presented trends can make a significant contribution in the complex framework of understanding globally this decrease but also the causes that have contributed decisively to this process. We therefore believe that account should be taken of the generation-specific differences in health policy forecasts and future forecasts: selection in performance sport and, in particular, for the design of selection programs; early preparation and correlation of results with the performance of other generations of athletes.

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