

FACTORS BRINGING INFLUENCE OVER SPORTS DEVELOPMENT OF 10-11 YEARS OLD BOYS PRACTICING BASKETBALL GAME

(Preliminary communication)

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Abstract

The influence of sports has an incredible effect over the human body. This influence is based on different factors. Depending on the predominate factors the development of the human is directed in one or another direction. The goal of this study is to determine the influence of some of the sports factors over the male athletes practicing basketball game. To achieve this goal we have tested 31 boys at the age of 10-11 years, practicing basketball game. This group of children was tested with 28 test separated in 4 groups – physical development, conditional abilities, coordination abilities, technical abilities. The results were calculated with math-statistical methods. To achieve the goal we have used factor analysis. As a result of the analysis we have determine that 7 are the major factors for tested boys at the age of 10-11 years practicing basketball. The most important factor is the rounds measurements of the body, after that is the accuracy with hands and the third one is the length of the body parts.

Keywords: *factor analysis, motor tests, anthropometric measurement, situational motor test, physical development, conditional abilities, coordination abilities, technical ones*

INTRODUCTION

The children's development is under the influence of many factors – external, internal, social environment and many others. As a major component for a good and harmonic development of the children, and not only, is practicing different sports and sports activities (Popov (Попов), 1995; Slanchev (Слънчев), 1998).

The sport has its vital influence over the functions of all organs and systems in the human body; this statement has been proved by many specialists. The sport is powerful instrument for improvement of the whole physical condition of the man (Brestnichki (Бре-стнички), 2007, 2008).

The goal of this study is to determine the influence of different sports factors over boys practicing basketball game.

To achieve this goal, we have to determine the level of physical development, conditional abilities, coordination abilities and technical ones. After that we have to determine the factors and the factors' weight formed in between all of the above abilities shown by the 10-11 years old boys.

METHODS

The subject of our study is the factors bringing influence over the human sports development in the fol-

lowing components - physical development, conditions abilities, coordination abilities and technique.

For the study we have used 31 male athletes at the age of 10-11 years practicing basketball game. To determine their level of physical development, conditional, coordination and technical level, we have tasted them with 28 test, separated in four groups:

I group – 10 tests for examining the physical development; II group – 6 tests for examining conditional abilities; III group – 4 tests for examining coordination abilities and IV group – 8 tests for examining technical abilities. All of the used tests have been proved in practice. To process the results to the analyses we have used math-statistical method - factor analysis.

RESULTS AND DISCUSSION

The achieved results from 10-11 years old boys practicing basketball game have been processed with factor analysis. That analysis is helping us to determine the components which are more important and have influence over the tested people. Also we can form different factors in which are included the tested indexes with similar effect and importance for the development of the examined children. Using math-statistical methods we have formed factor matrix with 7 factors with total factor weight of 81.04 % out of 100 % output dispersion of

the tested indexes. The percentage proportions among the different factors are shown on Table 1. From the figure we could see that the factors dispersion has small difference – 2-3%.

Table 1. Factor structure research indicators of basketball players aged 10-11 years

Factors	Percentages
F1	17,57
F2	15,30
F3	13,77
F4	12,60
F5	9,19
F6	6,90
F7	5,72

On Fig. 1 are presented the 7 factors and the components included in each factor. From the figure we could see that in the first factor, which define 17.57 % from the output dispersion, are included 4 indexes. All of the included indexes in this first factor are important for the physical development of the children. They are part of the round measurements. Out of these four indexes, the one with biggest factor weight is the round of the arm. This fact we could interpreted with major role of the arm in the basketball game. If the arm is not strong enough, all the techniques will not be done correctly. The other three indexes which are including in this first factor are: forearm – 929 factor weight, tight – 927 and body weight – 901. We could name this first factor round measurements.

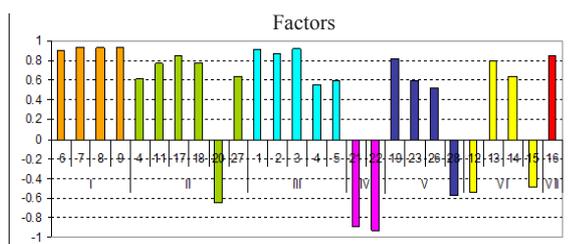


Fig. 1. Factors and factor weights in participants (players) from the age of 10-11 years

The second factor define 15.30 % off the whole output dispersion. In this factor are included 6 indexes. The biggest factor weight – 855 has the accuracy with the arm. This fact we interpreted with the need of precision and accuracy in the basketball game. The aim (basket) is small enough and the player needs high accuracy to score points. Also we have to be very precision when we passing the ball to teammate, because the opponent is always there on the court ready to steal the ball. Smochevski (Смочевски, 2003) has determined that the accuracy with one hand is very important for the shoot in the basket. The other 5 factors included in this second

factor are balance and 20 m running (factor weight-776); coordination in running (-653); shooting from 4 m (645) and palm length (609). All these indexes included in the second factor have a major role for the shooting and in the passing. For the good shot is very important that the basketball player has big palm for better control of the ball. Also the good balance of the body for a better stop and performance of the jump shot. Quickness is another skill - which could help the athletes to avoid the block of their shot. And last, but not least, is the coordination of running. Addition to the above statement is the statement of Tsenich (Ценић), 2002) that one of the major requirements for the good shooting and passing is the good balance.

The third factor in our study defines 13.77 % off the output dispersion. In this factor are included 5 indexes. The factor with biggest factor weight is the length of the arm – 916. After the arm is the tall of the athletes – 906. These two indexes are major once for the selection of basketball athletes. The other three indexes included in the third factor are: length of leg (866); length of span (597); and length of palm (556). This factor could be defined as the length factor. As we mentioned earlier the length measures are major factor in the selection of the future basketball athletes. In now a days, the tendencies in sports are to be recruited taller athletes, because the statistics shows that the teams with taller athletes are always taking the prizes' places.

The fourth factor has 12.60 % off the output dispersion. This factor includes two indexes – dribble with convenient hand and dribble with inconvenient hand. Bigger factor weight has the index – dribble with inconvenient hand – 926. Dribble is important basketball technique. This technique needs to be mastered very well from the athletes, because this is the way the player moves around the court with the ball, without warring that the opponent will still the ball from him.

The fifth factor includes 4 indexes. Its output dispersion is 9.19 %. In this fifth factor the biggest weight is for the index not rhythmical taps (816), which evaluate the coordination and rhythmic abilities of the tested person. The other three indexes included in this factor are: two hands pass (594); lay up shot (520) and defense move (-573). In all of these basketball techniques the major role is the coordination and the rhythm of the hands. While passing the ball, the basketball athlete need very well to coordinate and synchronized both hands, so the ball could reach the final destination. Also whole body coordination is very important for the lay up shot with the inconvenient hand. Defense to be successful, the basketball athlete has to be fast in the movement with the arms and legs and to be able to put his hands on the way of the ball right on time.

The sixth factor includes 4 indexes – backwards running, long jump, throwing of medical ball and shuttle. This factor includes only conditional indexes and that's why we could name it conditional factor. Its dispersion is 6.90 % off the output dispersion. The index with biggest weight is long jump (800). This index is evaluat-

ing the conditional ability - power strength of the legs, which is very important for the basketball game. If the basketball player has good power strength in the legs, he will be able to start faster and easily, to jump higher, will be able to move faster in defense stand. The other three indexes included in this sixth factor, in order of their weight, are: throwing of medical ball (640); backwards running (-547); shuttle (492).

The last seventh factor includes only one index. This index has a factor weight of 849. This index evaluates the flexibility of the athlete and has a major role in the good mobility of the body. The good flexibility helps performance of the elements with high coordination and technical difficulty. Also the good flexibility of the body is prevention against any muscles, joint and bones traumas.

CONCLUSION

All these seven factors which we define in this study, in the order we described them are showing significant role for the 10-11 years old boys practicing basketball game.

All the factors are close to each other and the difference of the dispersion percent in between them is very low.

The major factor is the first one. It has the biggest dispersion and we defined it as round measurements. Second factor is the accuracy and the third factor is length measurements.

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