

AGE, PARTICIPATION TIME AND PERFORMANCE IN BASKETBALL PLAYERS IN OLYMPIC GAMES

José D. Alfonso, Enrique Ortega y José M. Palao

KEY WORDS: Participation; performance; team sport; training and sport talent.

ABSTRACT: The purpose of this piece of work was to know the ages of the players with the highest performance, through the participation time and the performance indicators of basketball players in Olympic Games. The final objective is to provide more significant values which allow to guide training processes to trainers and club's youth coordinators. Results showed the following: a) in guard position, players with more than 29 years old are the ones who have better statistical in most of the indicators, either for men or women; b) in forward position, the age range varies between 27-29 in men and between 26-29 in women; c) the age range in centers diversify between 25-28 in most indicators in men, while in women it is above 28 years old

Introduction

High sport performance is determined by a whole of factors which interact during the sport career of sportmen taking them into high performance levels for the required discipline (Lorenzo and Sampaio, 2005).

For each of those factors, Bloom (1985), has already identified the need to establish several stages for sportman development, so it would take into account the maturing process of the player, either physically or psychologically. Between these stages it is common to find, in most of the specialized publications (Ibáñez, 2005; Sáenz-López et al., 2006), an initiation stage, where youth sportman begins his sport practice in an organized way; development stage, with an increasing in the quantity of dedication hours; and the perfecting stage, in which sportsmen reach the highest sport level. Furthermore, there seems to be basis for establishing maturing stages in a basketball player's life which make possible, in an integral way, the development of sport talent and minimize drop-out (Lorenzo, 2000).

In the stages of establishment in a basketball player's life, age is used as a limiting factor in the periods decision (Platonov, 1993; Giménez, 2000 citado en Sáenz-López et al., 2006; Ortega et. al, 2006 y 2007), from there it is the need to determine which are the formation periods and which are the highest sport performance.

The purpose of this document is to know the ages of the players with the highest performance, through the participation time and the performance indicators of basketball players in Olympic Games, with the aim to contribute more

reference values which allow to guide training processes to trainers and club's youth coordinators.

Method

The sample consisted of 252 basketball players members of the 24 teams that disputed Olympic Games of Beijing 2008, from which 127 were males and 125 females (N=252). Information was taken from the official webpage of that Olympic Games edition (<http://en.beijing2008.cn>). The following variables were examined:

a) Age (from the birth date) and sex; b) position; and c) performance indicators (minutes per game, field goal throws, field goal throws attempted and field goal percentages, three-point goals, three-point goals attempted and three-points percentage, free throw goals, free throw attempted and free throw percentage, defensive and offensive rebounds, assists, turn overs, steals, blocks, received fouls, total points and points per game.

The nonparametric test H of Kruskal-Wallis was used, with a significance level of $p < .0,5$.

Results

In table 1, it can be observed average values of the different performance indicators object of study according of the specific position and the age, in men basketball players.

Results in table 1, indicates that in the specific position of guard, players who show upper values in the different indicators object of study, are those who are more than 29 years old (except for free throws percentage).

On the other hand, in connection with specific position of forward, players with an age between 27-29 years old show upper values in

	GUARD POSITION			FORWARD POSITION			CENTER POSITION				
	Up to 24 years old	Among 24-27 years old	More than 27 years old	Up to 24 years old	Among 24-27 years old	More than 27 years old	Up to 25 years old	Among 25-28 years old	More than 28 years old		
Minutes per game	14.69	18.00	15.89	22.80*	14.81	16.43	16.55	15.73	15.38	18.86	16.63
Field goal throws	8.38	10.25	5.89	12.73	9.13	7.27	16.82*	5.45	17.63	23.43*	12.00
Field goal throws attempted	16.13	19.44	16.11	23.73	16.13	15.40	29.82*	13.45	29.50	40.71*	21.25
Field goal percentage	48.50	44.75	35.44	49.27	57.50	44.07	63.73*	37.64	51.38	54.14	53.00
Three-point goals	4.63	4.88	6.22	8.80*	3.31	4.67	3.82	5.09	.75	.71	2.25
Three-point goals attempted	12.50	14.31	18.22	23.33*	8.88	12.60	10.27	14.36	2.00	2.71	5.25
Three-point percentage	31.88	29.31	32.22	34.07	22.44	32.27	27.18	36.73	11.00	23.14	16.50
Free throw goals	8.75	6.31	5.78	10.07*	7.13	5.87	9.36	6.18	11.38	16.29*	5.38
Free throw goals attempted	10.50	9.00	7.78	12.20*	9.50	8.33	12.27*	7.64	20.00	21.71	9.13
Free throw percentage	67.00	66.81	68.56	64.80	56.94	58.93	69.82	68.09	46.63	71.57*	58.88
Offensive rebounds	3.56	4.31	4.60	4.80	4.56	5.60	7.09*	3.27	9.13	11.00	6.75
Defensive rebounds	9.88	9.31	8.33	13.27*	13.13	11.53	19.45*	12.18	16.00	19.71*	12.21
Assists	10.31	7.63	7.11	16.73*	4.31	4.93	5.00	3.55	3.00	5.57	5.13
Turn overs	7.44	9.00	7.78	11.60	5.56	6.87	8.91	5.73	7.25	10.43	6.38
Steals	5.38	4.63	3.33	7.33*	4.50	3.67	4.68	3.45	2.88	2.91	2.75
Blocks	.69	.44	.33	.93	1.38	1.33	3.09	.64	3.75	4.00	1.50
Received fouls	9.88	9.31	8.22	13.80*	8.19	7.13	13.36*	9.09	17.63	19.43	10.25
Total points	39.38	41.44	36.22	61.93*	35.31	34.40	54.45*	32.36	48.88	65.29*	36.13
Points per game	5.87	6.80	5.26	8.83*	5.71	6.79	7.37	6.03	8.06	10.39*	6.30
Number of players	16	16	9	15	16	15	11	11	8	7	8

	GUARD POSITION			FORWARD POSITION			CENTER POSITION				
	Up to 24 years old	Among 24-27 years old	More than 27 years old	Up to 24 years old	Among 24-27 years old	More than 27 years old	Up to 25 years old	Among 25-28 years old	More than 28 years old		
Minutes per game	15.64	16.40	19.85	20.30	14.54	18.75	22.71*	16.89	14.42	18.36	21.90*
Field goal throws	5.82	7.93	10.46	8.60	11.38	12.75	14.71	8.67	10.33	17.00	20.00*
Field goal throws attempted	16.27	17.00	23.38	19.10	24.69	30.09	32.12	18.89	22.67	37.64	43.00*
Field goal percentage	37.64	45.43	39.08	36.10	44.38	42.00	45.29	43.00	43.42	40.73	45.70
Three-point goals	4.00	3.53	4.38	6.60*	2.15	3.10	5.81	6.29*	1.00	3.60	.67
Three-point goals attempted	11.20	10.40	13.46	20.50*	7.00	8.50	17.19	18.86*	3.75	9.80*	3.83
Three-point percentage	26.70	27.40	24.08	28.50	21.46	35.10	35.56	42.14	10.00	33.20	13.67
Free throw goals	7.22	6.15	5.14	9.25	6.73	11.10	10.18	7.11	4.67	10.70	11.64*
Free throw goals attempted	9.22	8.31	7.00	11.50*	9.64	15.00	13.29	9.56	8.08	15.90	16.91*
Free throw percentage	69.78	72.54	79.00	79.33	70.18	71.60	74.71	59.89	58.67	65.00	66.55
Offensive rebounds	4.89	4.50	4.00	6.42	5.75	8.40	9.53	4.50	8.64	10.20	13.09
Defensive rebounds	8.18	12.64	11.77	12.20	11.08	14.18	20.00*	8.22	16.33	21.40	22.45
Assists	7.10	9.92	12.13	12.30	2.90	5.00	9.41*	6.44	3.10	4.82	6.00
Turn overs	9.27	7.53	9.90	11.77	9.33	8.64	12.59*	7.00	8.08	10.18	12.50
Steals	3.67	5.33	6.60	6.92	3.82	3.73	7.47*	4.75	2.38	4.91	5.56*
Blocks	1.00	3.00	1.00	1.00	2.17	2.00	1.80	2.00	5.80	4.56	5.00
Received fouls	9.20	8.14	7.33	10.69*	8.25	12.55	12.59	10.67	7.83	15.82	17.20*
Total points	28.45	30.73	42.62	45.11	34.92	44.00	56.00*	39.11	26.33	50.55	51.90
Points per game	5.17	4.87	6.25	6.72	5.92	6.49	8.75	7.06	4.48	7.33	8.69*
Number of players	11	15	13	10	13	11	17	9	12	11	10

Table 2.- Average performance indicators values according to the position and age of women basketball players

the different performance indicators, except those related with 3 point throws where players above 29 years old present higher values.

Finally, when analyzing players in centre specific position, information in table 1 indicates that those who are aged between 25-28 years old, present upper values in the different performance indicators object of study, except in 3 point throws in and out.

In table 2, the average values of the different performance indicators can be observed, according to the specific position of the player and the age, in women basketball players.

In table 2, it can be observed that in the specific position of guard players who show upper values in the different indicators, are those who are more than 29 years old (except in 2 point throws and blocks).

When examining the forward position, in table 2 players between the ages of 26 and 29 years old are the ones who present higher values in the different performance indicators, except in free throws in and out and in indicators related to three points throws where players upper 29 show upper values.

Finally, when analyzing specific position of centre, information in table 2 indicates that players up to 28 years old, show upper values in most of the performance indicators, except in those related to three points throws, where players between 24-29 years old show upper values.

Discussion

Results corroborate, in most of the factors, researches done by Ortega et. Al

(2007) in NBA with averages in performance indicators upper to 26-27 years old, and also in ACB and LEB (Ortega et. al. 2006).

Therefore, there should also be taken into account this factor, within the complex of interactions to study in the players selection. In punctual competitions like Olympic Games, it is specially important to choose players that can develop a better performance in a shorter period of time and with a high number of games; experienced players are used to be the most useful and efficient, as the obtained results show.

On the other hand, if they are taken into account the orientations in developing ages provided by authors like Baker (2003), which indicate a period of 13 years to achieve the highest performance, the age of beginning of specific training would be around 14-15 years old. Giménez 2000, mentioned in Sáenz-López et al. (2006), indicates the beginning of specific training between 13-14 years old, with a wealth of experience of 6-8 years in which the specialization will occur and a perfecting stage from 20-22 years old, what as a whole and, taking like reference the 27 years old obtained as highest performance values, confirm the 13 years of average of specific training. In any case, these values can not be considered an exact law, because depending on the degree of psychomotor development of the player this values could slightly vary. What seems to be clear it is the need of making coaches aware of the importance of not to burn stages at early ages and to follow a gradual process of initiation, specialization and perfecting which provides players an opportunity to reach their highest performance in their ideal psychomotor stage.

References

- Baker, J. & Côté, J. (2003). Sport-Specific Practice and the Development of Expert Decision-Making in Team Ball Sports. *Journal of applied sport psychology* 15, 12-25.
- Bloom, B. (1985). *Developing talent in young people*. Ballantines books: New York.
- Ibáñez, I. (2005). *Principios para la planificación del entrenamiento en baloncesto en etapas de formación*. Propuestas para un baloncesto de calidad. Avafieb: Vitoria.
- Lorenzo, A. (2000). *Búsqueda de nuevas variables en la detección de talentos en los deportes colectivos. Aplicación al baloncesto*. Facultad de Ciencias de la Actividad Física y del Deporte. Madrid, Universidad Politécnica de Madrid, 313.
- Lorenzo, A. & Sampaio, J. (2005). Reflexiones sobre los factores que pueden condicionar el desarrollo de deportistas de alto nivel. *Apunts*, 80, 63-70.
- Ortega, E., Palao, J.M., Gómez, M.A., & Lorenzo, A. (2006). *Influence of age on performance and participation in spanish men's basketball*. En H. Dancs and M. Hughes (Eds.), Book of Abstract of 7th World Congress of Performance and Analysis of Sport (p.74). Szombathely, Hungary: University of Szombathely.
- Ortega, E., Palao, J. M., Ibáñez, S.J., Sampaio, J., Gómez, M.A. & Lorenzo, A. (2007). Influencia de la edad en la participación y en el rendimiento en jugadores de baloncesto profesionales (N.B.A). *Revista portuguesa de ciencias do desporto*, 7, 21-84.
- Platonov, V. (1993). *El entrenamiento deportivo. Teoría y metodología*. Barcelona: Paidotribo.
- Sáenz-López, P., Giménez, F.J., Sierra, A., Ibáñez, S.J., Sánchez, M. & Pérez, R. (2006). La formación del jugador de baloncesto de alta competición. Sevilla: Wanceulen.