

Achievement and competitiveness in elite youth basketball: what matters?

Carlos E. Gonçalves *, Humberto M. Carvalhov* and Ângela Gonçalves**

ACHIEVEMENT AND COMPETITIVENESS IN ELITE YOUTH BASKETBALL: WHAT MATTERS?

KEYWORDS: Basketball, Achievement, Competitiveness, Excellence

ABSTRACT: In a previous study we described the achievement and motivation variables that can explain the belonging to an elite competitive level of young basketball players, divided in two groups: elite and local. Two questionnaires were used: the Work and Family Orientation Questionnaire/WOFO (Spence and Helmreich, 1983), with three dimensions of achievement: work, mastery and competitiveness, and the Deliberate Practice Motivation Questionnaire/DPMQ (De Bruin et al., 2007), which assesses two dimensions of deliberate practice: will to compete and will to excel.

Sixty-four male and fifty-two female basketball players under 16 years (mean age 15.4 ± 0.91) participated in this study. A second group of players (14 males and 14 females) was obtained from those who were selected to play for the regional teams competing in the national youth festival. To compare the selected with the non-selected athletes, logistic regression was used.

All the parameters, except mastery, explain the possibility to belong to the elite group, with will to compete and will to excel at the top of the discriminant variables. Once again, the findings suggest that a self-orientation to excellence may play a crucial role in ambition to reach higher standards in competition. The will to reach excellence in performance can be considered as a condition to aspire to participate in more specialized and demanding practice. The present study overcame the limitations of previous research regarding the selection moment, and globally confirmed the findings. The crucial need of inter-disciplinary, longitudinal research is stressed, because the path to expertise in sport is only meaningful over a long period of time.

In a previous study we described the achievement and motivation variables that can explain the belonging to an elite competitive level of young basketball players (Gonçalves, Coelho e Silva, Carvalho and Gonçalves, 2011). Two questionnaires were used to assess the constructs under scrutiny, the Work and Family Orientation Questionnaire/WOFO (Spence and Helmreich, 1983), and the Deliberate Practice Motivation Questionnaire/DPMQ (De Bruin et al., 2007). WOFO addresses three dimensions of achievement: work, mastery and competitiveness. The DPMQ assesses two dimensions of deliberate practice: will to compete and will to excel.

The players were divided in two groups: elite and local. The players in the elite group were participating in a full time basis, in training centres sponsored by the Portuguese Basketball Association. For data analysis Decision Tree and Random Forest techniques were performed (Breiman et al., 1984). We hypothesised that the relation between the achievement variables as assessed by WOFO and the motivational variables measured by the DPMQ will allow clarifying the belonging and continuity to elite or local level groups.

The findings, presented in Figure 1, suggested that elite players are focused on competitive outcomes and athletic status instead of improving their skills through deliberate practice. The most discriminant variable was will to excel. Based on the findings, we argued that a self-orientation to excellence plays a crucial role in persistence in practice, and can be considered a

condition to engage in more specialized and demanding practice. We expressed our concern about the potential negative consequences for players and coaches. The early orientation to competitive outcomes could affect the youngster's experiences in the long term and the coaches' decisions, as this early selection is less precise.

However, the study had an important limitation. At the time of the enquiry, the elite group was already selected, denying the model a predictive role. In this research, we questioned the players before any selection was announced by the basketball association coaches. Hence, the aim of the present study is twofold: a) to describe the achievement and motivation variables that can explain the belonging to an elite competitive level of young basketball players; b) to test the hypothesis that a self-orientation to excellence can predict the selection for an elite group.

Method

Participants

Sixty-four male and fifty-two female basketball players under 16 years (mean age 15.4 ± 0.91) participated in the study. They were engaged in competitive national level clubs. The previous average number of years of experience in Basketball was 5.8 years. The number of hours of practice and the number of games

Carlos Eduardo Gonçalves. Estádio Universitário, Pavilhão 3. 3040156 Coimbra, Portugal. E-mail: carlosgoncalves@fcdef.uc.pt

*Faculty of Sport Sciences, University of Coimbra, Portugal.

**Sanger Institute, Cambridge, UK.

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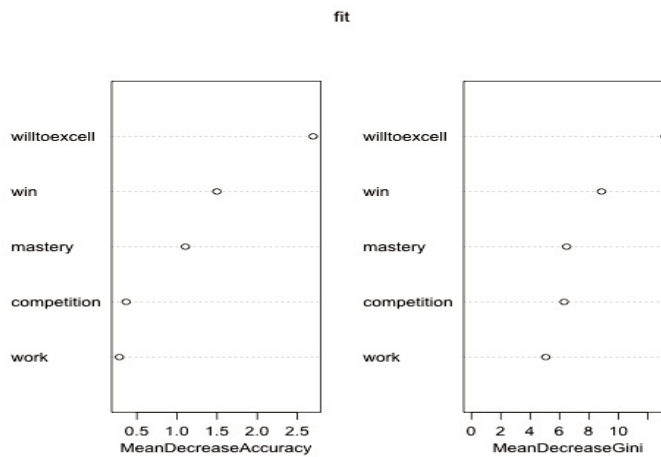


Figure 1. Results of Random Forest analysis

played were also collected. A second group of players (14 males and 14 females) was obtained from those who were selected to play for the regional teams competing in the national youth festival.

Measures

Work and Family Orientation Questionnaire/WOFO (Spence and Helmreich, 1983), with 19 items, addresses three dimensions of achievement: work (the desire to practice and perform well), mastery (the desire to face challenging tasks) and competitiveness (the desire to be better when compared to others, in a 5-point Likert scale.

Deliberate Practice Motivation Questionnaire/DPMQ (De Bruin et al., 2007), with 21 items, assesses two dimensions of deliberate practice: will to compete and will to excel, in a 5-point Likert scale.

Data analysis

Descriptive statistics were performed for the all sample. To compare the selected with the non-selected athletes, logistic regression was used. The dependent variable is binary (local or elite). The slope (b) and intercept (a) of the best-fitting equation were found using the maximum-likelihood method. The null hypothesis is that the possibility of an athlete to belong to the elite is not associated with the independent variable.

Results

All the parameters, except mastery ($p < .05$) explain the possibility to belong to the elite group, denying the null hypothesis (Table 1). The increase of one unit in parameter

implies that the athletes' odd to belong to elite multiplies by 3.05 for will to compete and by 2.88 for will to excel. The remaining achievement variables, work and competition, present a lower significance and their odds increase less than the deliberate practice variables.

Discussion

The findings confirm, to a certain extent, our previous study (Gonçalves, Coelho e Silva, Carvalho and Gonçalves, 2011). The Random Forest technique placed will to excel as the most discriminant variable for the belonging to the elite group. In this case the main variable is will to compete. Regarding the achievement variables, mastery entered the model in the first study but work did not. In this study, work appears as a discriminant variable but mastery not.

Although we must be careful because the samples are different, it is plausible to speculate that the effects of participation in elite programmes can exacerbate the will to become an expert in basketball. In both samples, we observe that the deliberate practice variables are the most valued by players that reach the elite groups. In this particular study, we stress that work represents a discriminant variable for those who aspire to belong to the elite. This finding confirms previous research on achievement orientations, using the Achievement Orientation Theory, as postulated by Nicholls (1989). This theory says that normative- or self-orientations are orthogonal; the individuals can be high or low oriented in both senses. That will be the case of elite athletes that believe that success is a combination of hard training and a strong will to beat the opponents (Harwood, Cumming and Fletcher, 2004).

Parameter	Estimate	Std. Error	z value	Pr(> z)	Significance	For one unit incre-
Compete	11.151	.3793	2.940	.0032	**	3.05
Excel	10.576	.2951	3.584	.0003	***	2.88
Work	1.043	.476	2.192	.0284	*	2.84
Competition	.5920	.2964	1.997	.0458	*	1.81
Mastery	-.4206	.4151	-1.013	.311		.66

Table 1. Results of the logistic regression to test the effects of the independent variables (local or elite) on the dependent variable.

Once again, the findings suggest that a self-orientation to excellence may play a crucial role in ambition to reach higher standards in competition. The will to reach excellence in performance can be considered as a condition to aspire to participate in more specialized and demanding practice.

Some coaches claim that competitiveness and the desire to win are components of talent, at the same time as size or technical abilities. Apparently, the results confirm that the young athletes that are selected to elite groups are different from their peers before the start of the selection process. Considering that the constructs under analysis are closely related to motivation, it is coherent to agree with Elferink-Gemser, Visscher, Lemmink and Mulder (2007) when they argue that motivation is a more important variable to differentiate elite young athletes from non-elite ones than athletic readiness or skill proficiency. In the present case the orientation is to overcome competitive games rather than facing challenging tasks.

Hence, it would be useful to assess the players' orientations to achievement and deliberate practice as a part of the talent identification process. However, the scarcity of longitudinal

studies about the theme, and the lack of consensus about what really means talent in sport (Gonçalves, Rama and Figueiredo, 2012) advise researchers to be cautious. Following Martindale, Collins and Daubney (2005), we argue that actual performance is not the same as potential for the future and to be fully reached, the young athletes need autonomy to set their own goals, and the evaluation of their progress is a multi-year process, and based on the interaction of complex variables.

Conclusions

The present study overcame the limitations of previous research regarding the selection moment, and globally confirmed the findings. Thus, the use of more comprehensive approaches is needed, to provide coaches and managers with useful information to back decisions that can have a major influence in the youngsters' lives. Like we did in the first study, we stress the crucial need of inter-disciplinary, longitudinal research, because the path to expertise in sport is only meaningful over a long period of time.

LOGROS Y COMPETITIVIDAD EN JUGADORES JÓVENES DE BALONCESTO: ¿QUÉ ES LO QUE IMPORTA?

PALABRAS CLAVES: Baloncesto, Logro, Competitividad, Excelencia.

RESUMEN : En el presente estudio se ha tratado de describir los logros y las diferentes motivaciones que pueden explicar la pertenencia a un nivel competitivo de élite de jugadores jóvenes de baloncesto, los cuales fueron divididos en dos grupos: élite y locales. Se utilizaron dos cuestionarios: Work and Family Orientation Questionnaire/WOFO (Spence y Helmreich, 1983), con tres dimensiones de progreso: el trabajo, el dominio y la competitividad, así como el Deliberate Practice Motivation Questionnaire/DPMQ (De Bruin et al, 2007), que evalúa dos dimensiones de la práctica deliberada: la voluntad de competir y voluntad de superación.

Sesenta y cuatro varones y cincuenta y dos jugadoras de baloncesto femenino de menos de 16 años ($15,4 \pm 0,91$) participaron en este estudio. Un segundo grupo de jugadores (14 hombres y 14 mujeres) se obtuvo de la selección para jugar con los equipos regionales que compiten en el festival nacional de la juventud. Para comparar los atletas seleccionados con los no seleccionados, se utilizó regresión logística. Todos los parámetros, excepto el dominio, explican la posibilidad de pertenecer al grupo de élite, siendo la voluntad de competir y voluntad para sobresalir las variables discriminantes más destacadas. Una vez más, los resultados sugieren que un auto-orientación a la excelencia puede jugar un papel crucial en la ambición de alcanzar los estándares más altos en la competición. La voluntad de alcanzar la excelencia puede ser considerada como una condición para aspirar a realizar una práctica más especializada y exigente.

El presente estudio compensa las limitaciones de investigaciones anteriores en relación al momento en la selección. La necesidad crucial de estudios interdisciplinarios y la investigación longitudinal debe ser destacable, porque el camino a la excelencia en el deporte sólo tiene sentido si se hace durante un largo período de tiempo.

References

- De Bruin, A., Rikers, R. and Schmidt, H. (2007). The influence of achievement motivation and chess-specific motivation on deliberate practice. *Journal of Sport and Exercise Psychology*, 29, 561-583
- Elferink-Gemser, M.T., Visscher, C., Lemmink, K. and Mulder, T. (2007). Multidimensional performance characteristics and standard of performance in talented youth field hockey players: a longitudinal study. *Journal of Sport Sciences* 25, 481-489.
- Gonçalves, C.E., Coelho e Silva, M., Carvalho, H.M. and Gonçalves, A. (2011). Why do they engage in such hard programs? The search for excellence in youth Basketball. *Journal of Sports Science and Medicine*, 10(3), 458-464.
- Gonçalves, C.E., Rama, L.M. and Figueiredo, A.J. (2012). Talent Identification and Specialization in Sport: an Overview of some Unsolved Questions. *International Journal of Sports Physiology and Performance*, 7, 390-393.
- Harwood, C., Cumming, J. and Fletcher, D. (2004). Motivational profiles and psychological skills use within elite youth sport. *Journal of Applied Sport Psychology*, 16, 318-332.
- Martindale, R., Collins, D. and Daubney, J. (2005). Talent development: a guide for practice and research within sport. *Quest*, 57(4), 353-375.
- Nicholls, J.G. (1989). The competitive ethos and democratic education. Cambridge: Harvard University Press.
- Spence, J.T. and Helmreich, R.L. (1983). *Achievement-related motives and behaviours*. In J.T. Spence (Ed.), *Achievement and achievement motives: Psychological and sociological approaches (10-74)*, San Francisco, CA: W.H. Freeman and Company.