Original empirical article

THE DIFFERENCES BETWEEN TOP SENIOR BASKETBALL PLAYERS WITH DIFFERENT SITUATION EFFICACY IN RELATION TO CONATIVE CHARACTERISTICS

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Abstract. *The assessment of differences in psychological characteristics between players of different levels of success may contribute to a better understanding of the basketball players' overall situation efficacy. Our research was aimed at ascertaining the differences between extreme groups of top Croatian senior basketball players, with either best or lowest situation efficacy. The final sample of subjects (60 basketball players with the lowest and the highest total situation efficacy) was selected from the initial sample of 107 subjects, basketball players from nine men senior teams from the A-1 Croatian Men Basketball League during the 2006/2007 championship season. The players with the best situation efficacy and those with the lowest situation efficacy cannot be statistically significantly distinguished on the basis of the group of conative characteristics and perceived group cohesion, therefore the research hypothesis has been rejected.*

Key words: *psychological, cohesion, perfectionism, basketball, differences.*

INTRODUCTION

Ascertaining the differences in the psychological characteristics of basketball players with various levels of situation efficacy could contribute to a better understanding of the total situation efficacy of basketball players. Basketball is a complex team sport consisting of simple and complex motions the main goal of which is, within the co-operation of the team members in play and opposition to rival teams, shooting the ball into the basket as well as preventing the rival player from gaining the ball and shooting it into the basket (Gabrijelić, 1977). Furthermore, the game of basketball can be monitored as a sequence

of tasks performed by each player with respect to his position and role in the team within a particular game concept (Trninić, 1995). The main postulate for the successful performance of an individual in carrying out a sequence of tasks is a group of chosen features of anthropological status, connected in an integral set of optimum sports fitness. The features determining success in basketball (Milanović, Jukić & Dizdar, 1996) are defined by the specification equation, which sets the optimum «sum» of characteristics correlating to maximum sports achievement. The specification equity is based on contemporary scientific findings and empirical systems of expert findings (Milanović et al., 1989; 1994, from Milanović, Jukić & Dizdar, 1996). The monitoring and analysis of players' and teams' situation efficacy in the game of basketball contribute to easier monitoring of the game by spectators, and are of some help to coaches and basketball experts as material enabling the comparative analysis of players and teams as a whole, and, consequently, play a significant role in planning and programming the training process (Maršić, 1999, in Nakić, 2004). In order to monitor basketball games FIBA (Federation International Basketball Association) standardized thirteen indicators of situation efficacy that are monitored during each official game. On the basis of these indicators it is possible to calculate various derived parameters. Numerous scientific studies have been carried out on the problems of measuring the real quality of basketball players (Elbel & Allen, 1941; Dežman, 1996; Erčulj, 1997; Swalgin, 1994; Dizdar, 2002).

Conative dimensions are manifest and latent structures which make a construct of human personality and are responsible for human behavior. They help to explain how knowledge and emotions are translated into behavior among human beings (Jakovljević, Karalejić & Lazarević, 2010). As a crucial factor for success in sports, the following conative characteristics were chosen for the research: mental hardiness and perfectionism. In addition, group cohesion was taken as an indicator of team function.

The concept of **mental hardiness** served as a means of explaining the various human capabilities of dealing with stress (Kobasa, 1979). Mental hardiness explains why certain individuals develop somatic and psychological diseases when faced with stressful events, while others remain "healthy". The construct of mental hardiness created by Kobasa is made up of three elements, the so-called "three Cs" (commitment, control and challenge). Commitment is the ability to persevere in what one is doing: belief that an individual is capable of reaching the goal, even when the stress increases to unsafe levels. To put it simply, commitment can be equaled to the term perseverance. Control is the ability of an individual to feel important and on the basis of that belief to act in various (particularly stressful) life situations. Challenge is readiness for change and quick proactive adaptation to such changes. These three elements of mental hardiness are positively intercorrelated, but they are not identical (Maddi, 1999). A series of studies have revealed a statistically significant link between mental hardiness and success in various sports. The scales most frequently used to measure mental hardiness were the Dispositional Resilience Scale (DRS, Bartone et al., 1989, from Bartone, 1995), Personal Views Survey (PVS, Maddi, 1987, from Bartone, 1995), and its recent modification the Third-generation Hardiness Scale (Maddi, 1987, from Bartone, 1995). While the list of research indicating mental hardiness in correlation with various characteristics crucial for success in sports is rather long, the number of studies directly ascertaining the relationship between success in basketball and mental hardiness is extremely small. Hess & Maddi (1990) carried out research on the relationship of mental hardiness and success in basketball on basketball players attending a high school in California. They ascertained that individuals with

stronger mental hardiness show more success in basketball, i.e. in a larger number of situation efficacy indicators. Two years later they repeated the research on older subjects. Namely, Maddi & Hess (1992) carried out a study on the relationship between mental hardiness and success in basketball on male student basketball teams from South California. Their presumption was that there was a moderately positive correlation between mental hardiness and success in basketball. Dimensions of mental hardiness were significantly positively connected with indicators of success in basketball. On the basis of research carried out in other sports, as well as two studies where the authors attempted to directly ascertain a link between dimensions of mental hardiness and success in basketball, it can be concluded that the link between mental hardiness and situation efficacy indicators is consistently positive.

Burns (1983, from Ivanov & Penezić, 2004) defined **perfectionism** as a "network of cognitions, including expectations and interpretations of events as well as selfevaluation and evaluation of other people, the main feature of which is presence of attitude with a series of unrealistic standards, rigid and unflexible, that equalise selfevaluation with achievement". Within the research process the construct of perfectionism proved to be a crucial correlate of success in sports. Pursuant to theoretical directions of research of that construct, the measuring instruments most commonly used were: the Burns scale of perfectionism (Burns, 1980, from Calhoun & Accocela, 1990), the Frost multidimensional perfectionism scale (Frost MPS, Frost et al., 1990) and the Hewitt multidimensional perfectionism scale (Hewitt MPS; Hewitt & Flett, 1991), the positive and negative perfectionism scale (PANPS, by Terry-Short et al., 1995, from Hewitt & Flett, 1991). Both Frost's and Hewitt's multidimensional perfectionism (hereinafter: MPS) define perfectionism as a general personality concept defining behavior in all aspects of life and work of an individual. However, other theoreticians presume that perfectionist tendencies can function exclusively in some aspects of life (Missildine, 1963; Shafran, Cooper & Fairbaun, 2002, all from Dunn, Gotwals, & Causgrove Dunn, 2005). Implementation of three adapted versions of Hewitt-MPS (Dunn, Causgrove Dunn & Syrotnik, 2002; Dunn, Gotwals & Causgrove Dunn, 2005) on a sample of men and women athletes indicated that both men and women athletes show statistically significantly better results in the area of "sports" perfectionism (which is specifically shown in any life situation). In order to provide a more clear interpretation of the specific perfectionism in a sports situation, two groups of researchers almost simultaneously tested the dimensions of the construct of perfectionism in the area of sports (Anshel & Eom, 2003; Dunn & Syrotnik, 2002). Anshel & Eom (2003) carried out a study on male and female students with previous sports experience testing a latent structure of an adopted Hewitt MPS on a sample of athletes, and obtained four dimensions of "sports" perfectionism: personal standards, worry about mistakes, parents' criticism, coach's criticism. Dunn, Causgrove Dunn & Syrotnik (2002) carried out a study of the inventory of MPS-Football (a multidimensional perfectionism scale for football players, hereinafter: MSP-N), which they adapted to American football. Through factor analysis they obtained a structure similar to the one obtained by Anshel and Eom. They determined the dimensions of personal standards, worry about mistakes (which are practically Frost MPS dimensions adapted to sports). However, two remaining factors were somewhat modified and defined as: perceived pressure from the parents, and perceived pressure from the coach. Consequently, both studies provided similar solutions with respect to potential dimensions of perfectionism in sports situations. Dunn et al. (2006) checked convergent validity of perfectionism adapted to sports (originally the

Sport Multidimensional Perfectionism Scale or Sport-MPS, authors Dunn, Causgrove & Syrotnik, 2002). They identified a correlation between multidimensional perfectionism and goal orientation in sports (ego-orientation, i.e. concentration on a task). Furthermore, a match between the factor structure of instrument MSSP scales and Hewitt general perfectionism dimensions was found (Hewitt – MPS, authors Hewitt & Flett, 1991). On the sample of four groups of sportsmen (hockey players, football players, men and women athletes from other team sports and women figure skaters), four multidimensional perfectionism factors were confirmed: personal standards, worry about mistakes, perceived pressure from the parents, perceived pressure from the coach.

On the basis of what we have previously stated, apparently, for a better understanding of motor achievements, perfectionism should be analyzed only in specific sports situations. Moreover, it is quite probable that specific types of perfectionism appear in the area of specific types of sports activities. Although a minor number of studies deals specifically with relations between multidimensional perfectionism and success in basketball, in principle it has been proven that there is a negative relation between success in basketball and dimensions of perfectionism.

Cohesion is considered an important group characteristic due to a large number of factors contributing to its occurrence and due to the significant influence that cohesion has over group functioning (Rot, 1983). Gruber (1981) compared the relationship between team success (measured in two ways) and team cohesion. In the research carried out on junior basketball teams (aged from 10 to 16) and on older teams (19-22), multivariate and univariate relations were identified between two indicators of team success and team cohesion, for each level of competition, respectively (junior and senior players). The results showed that (a) indicators of team success and cohesion and satisfaction with team achievements are significantly inter-correlated, both in junior and senior players; (b) the value of the inter-correlation shows a significant growth both in junior and senior teams when data analysis is made by multivariate methods in comparison with univariate analyses; (c) the value of the inter-correlation between team success and cohesion does not differ with respect to the method of measuring team success; (d) the possibility of predicting success in basketball on the basis of cohesion and satisfaction with the achievements is about the same both in juniors and seniors; (e) the value of the inter-correlation does not change with respect to the number of teams participating at each level of the competition (both in junior and senior competitions). In the research carried out by Carron, Bray & Eys (2002) the correlation of result success at the end of the season was analyzed (for elite American university basketball and soccer teams) as was cohesions in the teams. The analyses showed a high level significant correlation between cohesiveness and team success (the correlation coefficients were between 0,55 and 0,67). It turned out that for basketball players, group integrity concerning the task was more significantly connected with team success than for soccer players. The research carried out by Heuze, Raimbault & Fontayne (2006) indicated that the best prognosis of perceived group efficacy during the preliminaries was given by group integrity in relation to the task. Also, vice-versa: the best prognosis of group integration concerning the task during the preliminaries was given based on the perceived group efficacy. Some significant positive correlations between three dimensions of cohesion (group integration concerning the task, group integration from the social point of view, and attractiveness of the group task for an individual) and perceived group efficacy were found. Zakrajsek et al. (2007) studied the relations between cohesion and the coach and the cohesion of team members and

perceived group (team) efficacy. Significant differences were found between perceptions of cohesion given by athletes and coaches. Consequently, it was found that these three concepts (cohesion of the team, cohesion among coaches and sport success) were largely inter-correlated, and it was to be assumed that they influence one another. Research work carried out on cohesion by the utilization of a Group Environment Questionnaire indicated that cohesion focused on a task is more important to the team than social cohesion. Upon careful insight into the research it can be concluded that a large extent of research group cohesion shows a positive correlation with realistic and perceived success in sport (as well as in many other areas of human activity). Nevertheless, the nature of this correlation is neither unambiguous nor simple.

The main goal of our research was to determine differences in the chosen conative characteristics and their dimensions in top Croatian senior basketball players in relation to their total situation efficacy.

THE METHOD

The subjects

The population from which the sample of subjects was taken represented healthy, continuously kinesiologically active and, according to sport success, top senior basketball players, that were competing within nine men senior teams in the A-1 Croatian Men Basketball League during the 2006/2007 championship season: "Cedevita", "Svjetlost", "Borik", "Kvarner", "Dubrava", "Dubrovnik", "Alkar", "Šibenik" and "Osijek". The average chronological age of the subjects was 23,5 years. The reduced sample of subjects (74 basketball players) was selected from the initial sample of 107 subjects. The criteria for the selection of players for the final sample of subjects was the number of minutes in play (minimum ten minutes in play per game), i.e. the number of games played (minimum eight games in which the individual player played). For the purpose of this research, we have additionally reduced the sample to 60 subjects (30 with the lowest and 30 with the highest total situation efficacy). Team players were tested with prior approval from the Croatian Basketball Association, their clubs and the players themselves, within the period between the sixth and eighth round of the A-1 league championship (from December 2006 until mid January 2007). Due to the small total number of subjects (top basketball players), the sample used in this research has been defined as a purposeful sample.

In the correlative research, data from official records from basketball matches in the A-1 men's senior league in 2006/2007 were analyzed.

The variables

As the dependent variable, one variable was used, the total situation efficacy of basketball players (XDLK – as a criterion for the classification of 30 most successful and least successful players in terms of situation efficacy), calculated by the method of the *partially weighted linear combination* (Dizdar, 2002). The total situation efficacy of the basketball players was used, calculated by the formula: **XDLK** = XP1 + 2 x XP2 + 3 x XP3 + XSO + XSN + XA + XOL – 0,5 XN1 – XN2 – XN3 – XIL – XOP. The symbols have the following meanings: *XP2=successful two point shots; XN2= unsuccessful two point shots; XP3=successful three point shots; XN3=unsuccessful three point shots;*

XP1=successful free throws; XN1=unsuccessful free throws; XA= assistances; XSN=offensive rebounds; XSO=defensive rebounds; XOL=stolen balls; XOP=personal fouls; XIL=lost balls.

The series of independent variables in this research were the dimensions of four psychological constructs: mental hardiness, unidimensional perfectionism, multidimensional perfectionism in sports situations, and perceived group cohesion. The results of all the instruments were defined as a simple linear combination of evaluations for items on each of the subscales, while the questionnaires of multidimensional perfectionism in sports situations and the perceived group cohesions were, to the best of our knowledge, applied for the first time in Croatia. The questionnaires were applied to the groups after the 6th round of the national championship, for each team respectively.

1. The short hardiness scale (mental hardiness)

The shortened version of Bartone's Dispositional Resilience Scale (DRS), the so-called Short Hardiness Scale (hereinafter SHS, Bartone, 1995) is made of 15 items based on the self-evaluation of the level of "mental hardiness" of an individual. The subjects were expected to evaluate their own behavior in relation to the content of different statements, on a Likert 4-point scale, from very untrue (0) to very true (3). Five of the items refer to the dimension Commitment, 5 to the dimension Control and 5 to the dimension Challenge. In previous studies SHS showed very satisfactory metric characteristics (Bartone, 1995), and due to a relatively small number of subjects, and also in order to avoid time-consuming research, it was evaluated as suitable for this study. With reference to metric characteristics, Bartone (1995) obtained the Cronbach α internal coexistence reliability coefficient on a sample of 700 military reservists with a value of 0,93 (for the whole questionnaire), and for individual scales 0,77 (commitment), 0,69 (challenge), 0,70 (control), i.e. similar values as Bartone (1995). The scale was applied in Croatia as well, but in a small number of studies and not on athletes. Hudek-Knežević & Kardum (2007, 2008) first applied SHS on 822 subjects from an average population. The reliability of the whole questionnaire was 0,69, and an average result for the questionnaire was 28,91 (SD=5,06), representing some 45% of the total maximum result in the instrument. Preliminary factor analyses showed that structure of the Croatian version of the questionnaire is most probably two-factor (the control and commitment items being most saturated by the first, and challenge item by the second factor).

2. The sport multidimensional perfectionism scale

To measure perfectionism, which as a characteristics is partially provisioned by specificity of the indication area (in this case it is a sports area, or more precisely basketball), two instruments were used in the research: the sport multidimensional perfectionism scale and Burns perfectionism scale. The sport multidimensional perfectionism scale (hereinafter SMPS, authors Dunn et al., 2002) consists of 30 items, with four subscales. The SMPS subscales are: personal standards (7 items), worry about mistakes (8 items), perceived pressure from the parents (9 items), perceived pressure from the coach (6 items). The subjects (athletes) were supposed to evaluate their own behavior with reference to the degree of consent with contents from 30 statements on a Likert 5-point scale, from strongly disagree (1) to strongly agree (5). In past studies, the SMPS showed very satisfactory metric characteristics (Dunn et al., 2005), and since its target are team sport

athletes, consequently it was evaluated as very convenient for this research as well. In the research carried out by Dunn et al. (2005) all of the scales in the questionnaire showed high reliability of internal coexistence type, in the range 0,76 – 0,89. As far as the modified version of the SMPS questionnaire is concerned, construed by Dunn et al. (2005) and adapted for American football, it resulted in satisfactory internal coexistence (0,70) for all the subscales of the adapted version of the sport multidimensional perfectionism scale questionnaire. Our research showed that all the dimensions of measuring instrument possess low or satisfactory reliability (Cronbach α): personal standards (0,62), worry about mistakes (0,77), perceived pressure from the parents (0,61), perceived pressure from the coach (0,68), and the total reliability of the questionnaire 0,87. The construct value of the SMPS was ascertained by factor analysis which indicated the existence of four factors, which coincided with the stated questionnaire scales (Dunn et al., 2006). Namely, the factor structure of the SMPS was confirmed on various samples of athletes, ice hockey players, football players, figure skaters, college athletes. The same was confirmed in our research in which, by means of a quasi-confirmatory factor analysis (the main component method with varimax rotation and a given number of factors), we ascertained minor deviations obtained from the original questionnaire dimension. It must be noted here that the author of this paper adapted the content of the statements in the questionnaire to basketball and situations in basketball.

3. The Burns perfectionism scale (one-dimensional perfectionism)

It seemed convenient to use the Burns perfectionism scale for the research as well (hereinafter BPS), which was adapted for the Croatian population (Burns, 1984, from Ivanov and Penezić, 2004). It contains 10 items, to which the subjects reply on a Likert type 5-point scale, a greater number meaning a greater agreement with the content of the statement. Hewitt and Mittelstaedt (1986, from Penezić et al., 1998) state that the reliability of Burns scale internal coexistence type has a value of 0,70. Frost et al. (1990, from Ivanov & Penezić, 2004) on student example obtained the reliability (Cronbach α) of 0,82. On the sample of student population from Croatia (Penezić et al., 1998) reliability of the scale internal coexistence type reads 0,62. Reliability of the scale increases to 0,70 if the third, fourth and fifth item is removed. In a study carried out by Ivanov et al. (1998, from Penezić et al., 1998) a shortened version of this scale was used, and consequently reliability of the internal coexistence type was 0,73 and the test-retest after two weeks was 0,74. With regard to the construct value, the author of the scale as well as other researchers (Frost et al., 1990; Hewitt et al., 1989; Hewitt & Flett, 1991, from Penezić et al., 1998) reported on a single-factor scale structure. The research on our population resulted in factor analysis, through the main component method and with Guttman-Kaiser factor extraction criteria with a characteristic root value >1, also indicated the existence of one factor. Our research too gave the results of a quasi-confirmatory factor analysis (the main component method with varimax rotation and given number of factors) with only minor deviations from the original factor (i.e. a unique questionnaire dimension).

4. The group environment questionnaire (perceived group cohesion)

Perceived group cohesion of the teams was measured by the application of a group environment questionnaire (Carron et al., 1985; hereinafter GEQ). This questionnaire is based on self-evaluation and contains 18 items. Four aspects of group cohesion are evaluated: at-

tractiveness of the group task to an individual (hereinafter AGTI; contains 4 items), social attractiveness of the group to an individual (hereinafter SAGI; contains 5 items), group integration in relation to the task (hereinafter GIT; contains 5 items), group social integration (GSI; contains 4 items). The subjects were expected to evaluate the degree of their agreement with the content of statements referring to various aspects of group functioning, on a Likert 9-point scale, with extreme evaluations from "strongly disagree" (1) to "strongly agree" (9). The questionnaire showed acceptable internal coexistence: Cronbach α coefficients for individual questionnaire scales varied from 0,68 to 0,75 (Carron et al., 1985). In numerous studies, the scale indicated very satisfactory metric characteristics. In another research (Carron et al., 2003), internal consistency coefficients (Cronbach α) were: SAGI (0,61), AGTI (0,72), GIT (0,72), and GSI (0,76). Zakrajsek et al. (2007) ascertained following internal coexistence coefficients Cronbach α: SAGI (0,64), AGTI (0,75), GIT (0,70), and GSI (0,76). Our research, however, showed that all of the dimensions of the measuring instrument have a low but satisfactory reliability (Cronbach α): SAGI (0,55), AGTI (0,66), GIT (0,68), and GSI (0,68), and the overall reliability of the questionnaire was 0,86. With respect to validity, the questionnaire showed satisfactory construct value in most of the studies (Carron et al., 2003). In our research as well, the results of the quasi-confirmatory factor analysis (the main component method with varimax rotation and the given number of factors) indicated only minor deviations from the original factors.

Data processing methods

Apart from the usual descriptive statistics indicators, for a detailed analysis of the differences in the dimensions of the conative characteristics of extreme groups of basketball players with respect to their situation efficacy, we used the discrimination analysis procedure. We tested the possibility of grouping the most successful and least successful subjects based on the total situation efficacy criteria.

RESULTS AND DISCUSSION

Table 1 provides the average values, standard deviations and data regarding the normality of the distributions for each variable, i.e. the dimensions of certain measuring instruments for the measurement of perfectionism, hardiness and perceived group cohesion. Of all the conative dimensions, only two variables from the Short scale of hardiness (commitment and control) did not have normal distribution. Comparing our results with the research carried out by Meeuwsen & Pederson (2006) on a sample of students (using the GEQ to measure perceived group cohesion), we can conclude that the average results in sample of basketball players are generally higher, except in the case of the dimension Group Integration-Task dimension. A possible reason for this could be 'implicit' group integration of the individual roles of each player, given by the coach. Comparing our results with those of Dunn et al. (2006), using the MSSP to measure multidimensional perfectionism in sport situations on a sample of athletes, we can see that the average values in our sample are generally lower. We can explain this result with the inclusion of top level basketball players in our sample, while the athletes in the sample of Dunn et al. (2006) are not as successful in this particular sport. If we compare our results with those obtained in a study carried out by Britt, Adler & Bartone (2001), we can see that the

subjects in our sample had lower average results than the sample of their soldiers. Does it mean that the soldiers are more mentally sturdier than top basketball players? We could not offer a proper answer. One possible explanation is that basketball players are 'healthier' (not in perfectionist sense) and self-critical, but persistent. Secondly, just as the other explanations we have given before, we cannot neglect the possible cultural reasons for the obtained results: all of the comparative studies were performed in western countries, mostly in the USA. All these personality traits could carry specific cultural modification, depending on the specific cultural heritage in each country.

Table 1. The descriptive statistics of all the dimensions of all the measuring instruments

Variables	Mean	Std.Dev.	Average Mean	Average St.Dev.	Max D	p
Individual Attractions to the Group - Social	33,18	8,16	6,64	1,63	0,11	> ,20
Individual Attractions to the Group - Task	26,46	7,50	6,62	1,88	0,11	> ,20
Group Integration - Social	28,47	6,28	7,11	1,57	0,15	> ,10
Group Integration - Task	32,36	7,63	6,47	1,52	0,09	> ,20
Personal Standards	22,15	5,40	3,16	0,77	0,09	> ,20
Concern Over Mistakes	18,89	6,07	2,36	0,76	0,10	> ,20
Perceived Parental Pressure	16,47	5,09	1,83	0,57	0,15	> ,10
Perceived Coach Pressure	15,51	4,62	2,59	0,77	0,10	> ,20
Unidimensional Perfectionism	33,23	6,07	3,32	0,61	0,09	> ,20
Commitment	12,07	1,60	2,41	0,32	**0,06**	**< ,05**
Control	11,04	1,92	2,21	0,38	**0,16**	**< ,05**
Challenge	7,42	3,38	1,48	0,68	0,09	> ,20

Legend: Max D=Kolmogorov-Smirnov test; p=significance

In Table 2, Wilks λ (0,811) indicates that the discriminant function does not make a statistically significant difference between the most effective and least effective players on basketball teams (with p>200), consequently the players from our sample cannot be distinguished on the basis of conative characteristics and perceived group cohesion. The group centroids value is 0,411 for the most successful and -0,434 for the least successful team. The structure coefficients indicating acorrelation between individual discrimination variables and the discriminant function in this case vary in the range -0,165 – 0,532. Upon scrutiny of the univariate variance analysis results for the individual dimensions of conative characteristics and perceived group cohesion, between the most successful and least successful teams, to make a distinction between the players on the basis of a discriminant function based on any of the dimensions of any of the researched conative characteristics was not possible.

Table 2. The discriminant analysis between 30 of the most efficient and 30 of the situation least efficient players in the A-1 Croatian Men Basketball League Championship in relation to the group of conative characteristics variables and perceived team cohesion

Discrimination function significance	Characteristic root	Wilks λ		Canonical correlation		χ^2-test (degrees of freedom)		p
Discrimination function	0,233	0,811		0,435		10,884 (12)		>,200

VARIABLE	Wilks' lambda	Correlation with discrimination factor	F-test (1,61)	p	M higher ranked	M lower ranked	σ higher ranked	σ lower ranked
COMMITMENT	,995	,144	,279	>,200	12,167	11,933	1,621	1,799
CONTROL	,938	,532	3,825	>,050	11,400	10,433	1,734	2,079
CHALLENGE	,996	-,127	,217	>,200	7,333	7,767	3,594	3,617
PERST	1,000	,044	,027	>,200	21,933	21,700	5,349	5,718
WORRY	,971	-,355	1,705	>,100	18,033	20,133	4,979	7,267
PARPRESS	,994	-,165	,367	>,200	15,833	16,633	4,488	5,672
COACHPRE	,987	,242	,792	>,200	16,000	14,900	4,828	4,744
BPS	,999	,052	,037	>,200	33,200	32,900	6,583	5,505
SAGI	,975	,335	1,518	>,200	34,900	32,500	7,889	7,186
AGTI	,982	,277	1,037	>,200	28,267	26,400	6,777	7,407
GSI	,982	,278	1,043	>,200	29,167	27,467	6,204	6,679
GIT	,960	,423	2,414	>,100	34,033	30,833	8,45876	7,465

Legend: SAGI = the social attractiveness of group to an individual; AGTI = the attractiveness of group task to an individual; GSI = group social integration; GIT = group integration during a task; PERST = personal standards; WORRY = worry about mistakes; PARPRESS = perceived pressure from the parents; COACHPRE = perceived pressure from the coach; BPS = Burns perfectionism scale; COMMITMENT = dedication; CONTROL = control; CHALLENGE = challenge

The main findings of the research included that the most situation efficient and the least situation efficient basketball team players cannot statistically significantly be distinguished on the basis of the entire group of conative characteristics and perceived group cohesion. Moreover, if individual dimensions from a group of conative characteristics and perceived group cohesion are analyzed, the differentiation between the players on the basis of the discriminant function is not possible based on most characteristics. The reasons for the results obtained could be: a real lack of differences in terms of the conative characteristics of the players on teams with different success (1), the characteristics of the measuring instruments (2), the small sample of subjects (3), the specificity of the Croatian population of top senior basketball players (4), specificity of a particular competition, i.e. the A-1 Croatian Senior Basketball League Championship 2006/2007 season (5), the general adequacy of self-evaluation method as an indicator of basketball players' conative characteristics (6).

One of the essential reasons for the obtained results could be the fact that psychological characteristics are just one of the numerous factors influencing success in basketball. On the other hand, the situation efficacy of basketball players is influenced by a complex set of conative characteristics which mutually interact in a complex way, the complex relations between a coach and the team, the coach and club management, the mutual relations among the players of a club (which can only partly be evaluated by the personality measurement instruments used). It is possible that under the top basketball game circumstances (and perhaps top sport in general) the selection of athletes with desirable personality characteristics was positive from the very start. Namely, top basketball players that have undergone many years of training and multiple selection might differ slightly in their permanent personality characteristics (any maybe more in their mood prior and during competition, and the like). In such a positively selected group, probably only specific psychological preparation (e.g. focused on the achievement of the desired mood prior to competing, or efficient management of stressful situations during a competition, during the 'crucial' stages of the game) may 'tip the scales', i.e. have a crucial impact on sports achievement. Still, another interpretation can focus on the specificity of the A-1 league 2006/2007 championship season as well. The lack of suspense regarding whether or not the team will remain in the elite league could have decreased the pressure, and consequently led to better control of the behavior of players in lower ranked teams during the A-1 league championship. Furthermore, the very characteristics of this (based on suspense, specific) Croatian championship could have been the reason why no differences were found in most of the characteristics that were tested between the basketball players of less successful and more successful teams. The potentially most important reason for the obtained results is the chosen sample of subjects. It is quite possible that the relatively small variability of the situation efficacy parameters, and potentially of the conative characteristics and perceived group cohesion, was the result of the multiple selection of the sample of basketball players. The adequacy of the constructs is also questionable (including their dimensions) regarding the Croatian population, especially the mental hardiness construct (but also the perceived group cohesion, as well as perfectionism). Actually, it is probable that the nature of some psychological characteristics is greatly influenced by the culture of the subjects (in this case basketball players) and their way of life. The specific nature of the particular competition, i.e. the A-1 Croatian Senior Basketball League Championship 2006/2007 season, could also have influenced the results. There was no suspense in the championship from the very beginning, due to the exclusive superiority of the two teams ('Cedevita' and 'Svjetlost'), and also the practical impossibility of even the least successful team ('Dubrava') dropping out of the league. This presumed lack of suspense could have been reflected onto the situation efficacy of the individual players, but also onto the players' responses on the conative characteristics (personality measurement instruments). The self-evaluation method, as an indicator of the conative characteristics of basketball players, may not have been adequate in comparing top basketball players. Namely, it is quite possible that the players are so similar in their conative characteristics that the behavior self-evaluation method in questionnaires cannot reflect the part of the variance of conative characteristics that is truly relevant when explaining differences in efficacy.

The results obtained from this research can nevertheless have much scientific and practical value. From the *scientific point of view*, as positive aspects of the research, at least two facts can be pointed out: the first applications of some measuring instruments in

Croatia (to the best of our knowledge) and the purposeful survey of the sample of top Croatian basketball players. For the first time (to the best of our knowledge) two questionnaires were applied to the Croatian athletes' population: the Group Environment Questionnaire (Carron, Brawley & Widmeyer, 1985), and the Sport Multidimensional Perfectionism Scale (Dunn, Causgrove Dunn & Syrotnik, 2002). In future research, the number of subjects could perhaps be increased (e.g. by attempting to interview injured and for other reasons absent players), which can be achieved only to a limited extent. The term 'top basketball players' in relation to the stated specificities does significantly vary depending on the competitive quality of the competition in an individual state. Therefore, one of the solutions for future research is the multiple replication of similar research during a larger number of basketball championships, in which those minor differences in the term Croatian 'top basketball player' might be reflected.

CONCLUSION

The most and least situation efficient basketball team players cannot be statistically significantly distinguished on the basis of a whole set of conative characteristics and perceived group cohesion, therefore the research hypothesis must be rejected. The most probable reason for this result could be the relatively small variability of situation efficacy parameters, including the relative equalization of all the conative characteristics basketball players who play in the same competition rank and the perceived group cohesion. That could be the consequence of the multiple selection in the sample of basketball players. Another possible explanation is focused on the specific nature of a particular culture.

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RAZLIKE UKUPNE SITUACIONE EFIKASNOSTI VRHUNSKIH SENIORSKIH KOŠARKAŠA U ODNOSU NA KONATIVNE KARAKTERISTIKE

Joško Sindik, Joško Vukosav

Otkrivanje razlika u psihološkim karakteristika kod različito uspješnih košarkaša moglo bi doprineti boljem razumevanju ukupne situacione efikasnosti košarkaša. Cilj našeg istraživanja bio je da se utvrde razlike između ekstremnih grupa vrhunskih hrvatskih seniorskih košarkaša, s najboljom odnosno najlošijom situacionom efikasnošću. Finalni uzorak ispitanika (60 košarkaša s najnižom i najvećom ukupnom situacionom efikasnošću) je selekcionisan iz inicijalnog uzorka od 107 ispitanika, košarkaša devet muških seniorskih ekipa A-1 Hrvatske muške košarkaške lige iz prvenstva 2006/2007. Najefikasnije i najmanje situaciono efikasni igrači košarkaških ekipa ne mogu se statistički značajno razlikovati na temelju celog skupa konativnih karakteristika te percipirane grupne kohezije, pa odbacujemo hipotezu istraživanja.

Ključne reči: *psihološke, kohezija, perfekcionizam, košarka, razlike.*