Differences in Conative Characteristics and Perceived Group Cohesion of the Basketball Players Playing in Different Positions in the Team

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ABSTRACT

Identification of differences in individual conative characteristics and in perceived group cohesion of the basketball players playing in different positions in the team could provide guidelines for a better selection of basketball players and better coaching work. The aim of our study was to determine the differences in relation to the positions of guards and forwards/centres, and the four major positions in the team. The final sample of subjects (74 basketball players) is selected from the initial sample of 107 subjects, selected from nine men's senior basketball teams that played in A-1 Croatian men's basketball league championship in 2006/2007. The results showed no statistically significant difference between basketball players who play in different positions in the team, neither in relation to two basic positions in the team (guards as opposed to forwards/centres), nor in relation to the four positions in the team (point guard, shooting guard, small forward, power forward/centre).

Key words: hardiness, perfectionism, significance, basketball

Introduction

Identification of differences in conative characteristics with various positions in the team could, on one side, enable coach to correct unwanted deviations from desirable conative characteristics of basketball players. The insight into these differences could assist in obtaining a more suitable definition of certain players' roles in individual teams, with regard to their specific conative characteristics[1]. Basketball can be watched as a specific series of tasks that each player is doing having in mind the position and role in the team within a certain game concept[2]. The characteristics that determine success in basketball is defined by the specification equation, which determines optimal »sum« of anthropological characteristics representing correlates of maximum sport achievement[3]. In relation to the game characteristics and numerous limitations defined by the rules of the game, playing basketball requires anthropological characteristics: morphological (the importance of player's height); functional capacities (physical fitness); motor (basic abilities, skills and knowledge). In the specification equation for the success in basketball, personality is one of major

determinants of sport success[4]. Consequently, diagnostics of conative characteristics of the player is crucial, both for the selection process and for the targeted process of training of selected players. When researching the correlation between the successfulness of basketball players and their personal characteristics, it's very important to consider choosing the type of successfulness evaluation models for the players (subjective and objective), as well as the type of personality models (partial or full). Namely, some personality models attempt at interpreting the personality in full, others only some aspects of an individual's functioning. Trninić, Mlačić & Kardum described and classified 17 specific characteristics of elite athletes in team sports games which probably have influence on the functioning and performance of individual players and the whole team. A hypothetical structure of six categories of mostly psychological and social variables was constructed. These are: locus of control, specific competence, motivation, successful reactions in situation of high competitive pressure, coordinated teamwork, and successful solutions of game situations[5]. For this re-

search we choose two characteristics that can belong to this classification: hardiness and perfectionism. Multidimensional perfectionism and hardiness have been chosen as relevant personality characteristics within the large project on development of psychological talent in Olympic champions in the USA[6]. Perceived group cohesion has been chosen as an indicator of group (team) functioning.

Hardiness

The concept of hardiness has been used in an effort to explain different abilities of humans to face stress[7]. Hardiness explains why some individuals develop somatic and psychological illnesses when faced with stressful life situations, while the others remain »healthy«. The construct of hardiness consists of three positively intercorrelated, but not identical elements, so called »three C«: commitment, control and challenge[8]. Commitment is the ability to perceive in what you are doing: a belief that an individual is capable of reaching a goal, even when the level of stress is beyond safe. To put it simply, commitment can be compared with perception. Control is the ability of man to feel influential and on the basis of that belief to act in various (particularly in stressful) life situations. Challenge is the belief that change is normal in life, more than stability, and that foreseeing changes represents an interesting stimulus in development. Since top sport is an extremely stressful millieu, hardiness is an often used construct for interpretation of top athletes' characteristics, and rather often it has served as a predictor of success in sports competition. The results of the research conducted by Golby and Sheard[9] showed that professional rugby players playing in the strongest leagues indicate importance of training both aspects of mental strength (hardiness and toughness). Hanton, Evans and Neil[10] in their research showed that top athletes with top results in hardiness, especially in dimensions commitment and control, showed desirable characteristics of athletes (less concerning about the result and proactively interpreting the competitive anxiety). In two studies of the correlation between hardiness and success in basketball it was found that mentally stronger individuals showed better success in basketball, i.e. in a larger number of situation efficacy indicators for the sample of players attending a high school in California[11]. In the second study, it was found that hardiness dimensions were significantly positively correlated with efficacy indicators in basketball at student male basketball teams in Southern California[11]. Consequently, on the basis of researches in different sports (as well as in basketball), we can conclude that correlation between hardiness and situation efficacy indicators is consistently positive.

Perfectionism

Perfectionism represents tendency to reach very high standards. Perfectionism was mostly studied as a permanent personal characteristic, its main feature being the »high performance standards«, which all researchers have agreed[12,13]. Burns defined perfectionism as a network of cognitions, including expectations and interpretations of events and evaluation of self and others characterised by taking stands with a series of unrealistic standards, rigid and inflexible, that equal self-evaluation with success[12]. Perfectionism is considered normal when an individual feels satisfied in aspiration for perfectionism (but recognising and accepting his own limitations Perfectionism becomes a problem when an individual has unrealistic expectations and is never satisfied with his performance[14]. Perfectionism is often observed as neurotic disposition, associated with many psychopathological attributes: depression, feeding disorders[14]; social phobia/anxiety and obsessive-compulsive disorders[15]; with the feelings of loss and anxiety, guilt, delaying tasks, suicidal ideas, low self-esteem. In sports, perfectionism is correlated with problems of success in sport competition, traits of anxiety and »burnout syndrome«[16]. Comprehension of conative, affective and behaviourist correlates of perfectionism is of utmost importance in the areas in which influence onto behaviours is to be expected that implicate success, and one of such areas is competitive sports[17]. The construct of perfectionism in the research showed to be an important correlate of success in sports. The most frequently used measuring instruments were: Burns Perfectionism Scale, Frost Multi-dimensional Perfectionism Scale, Frost & Hewitt Multi-dimensional Perfectionism Scale, Positive and Negative Perfectionism Scale[17]. Hill et al.[18] showed that unconditional self-acceptance does partially influence the correlation between the two dimensions of perfectionism and burnout of top junior football players. Self-directed Perfectionism can be positive when an individual shows high level of self-acceptance and affect burnout reduction[18]. However, both Frost and Hewitt Multi-dimensional Perfectionism Scale (hereinafter: MPS) define perfectionism as a general personality concept determining behaviours in all life and work aspects of an individual. Nevertheless, other theoreticians presume that perfectionism tendencies can function only in some areas of life[19].

As a consequence, many researchers of perfectionism in sport try to measure multi-dimensional perfectionism in specific sports situations. Perfectionism varies in regard to the situation[19]. Anshel & Eom[20] researched the latent structure of adapted Hewitt MPS on the sample of athletes and found four dimensions of perfectionism in sport situations: personal standards, anxiety over mistakes, parents' criticism, and coach's criticism. Dunn, Causgrove Dunn & Syrotnik[13] found four latent dimensions of the inventory MPS-Football (Multi-dimensional Perfectionism Scale for football players, hereinafter MPS--F), adapted to American football. Two dimensions were similar to Anshel & Eom's: personal standards and anxiety over mistakes. However, the remaining two factors are somewhat modified: perceived pressure from parents and perceived pressure from coach. Dunn et al.[21] tested convergent validity of the Sport Multi-dimensional Perfectionism Scale (hereinafter SMPS), adapted to sports in general, from Sport Multidimensional Perfectionism Scale (Sport-MPS)[13]. They found a correlation between

multi-dimensional perfectionism and goal orientation in sports (ego-orientation i.e. task orientation). Furthermore, compatibility between factor structure of the SMPS and Hewitt general perfectionism dimensions was found[21]. Four factors of multi-dimensional perfectionism were confirmed: personal standards, anxiety over mistakes, perceived pressure from parents and perceived pressure from coach. Martinent & Ferrand[22] used SMPS in clustering athletes according to their chosen personality characteristics. They found five clusters of athletes, which mutually differed with respect to the degree of: stability of concentration, somatic anxiety and anxiety over mistakes, perceiving pressure from parents and self-confidence. Two aspects of perfectionism showed a significant correlation with competitive anxiety. A research on perfectionism makes sense only in specific sports situations: it is quite possible that specific types of perfectionism occur in the area of specific types of sport activities.

Perceived group cohesion

Cohesion is considered a significant characteristic of a group due to a large number of factors contributing to its appearance and for the large influence the cohesion onto functioning of group[23]. The analysis of the correlation between team cohesion and results in sport competitions (at elite American university basketball and football teams) indicated a high level of significantly positive correlation between team cohesion and success (correlations ranged from 0.55 to 0.67). The correlation was statistically significant for basketball players in two cohesion scales. Group integration regarding task was more significantly correlated to team success for basketball players, comparing with football players[24]. Heuze, Raimbault and Fontayne[25] analysed the relationship between cohesion, perceived group efficacy and achievement for professional basketball teams. In preliminary competition, the best predictor of perceived group efficacy was group integration related to the task; the best predictor of group integration related to the task was perceived group efficacy. Significant positive correlations between perceived group efficacy and three dimensions of cohesion were found (group integration with respect to task, group social integration, and attractiveness of group task for an individual). Zakrajsek[26] studied the relationship between cohesion among coaches and cohesion among team members and perceived group (team) efficacy. He showed that cohesion oriented to the task is much more important for the team than social cohesion. Carron, Bray and Eys[24] researched the relationship between the cohesion related to task and social cohesion and team success, at top basketball and football players. Average results in both group cohesion aspects for both sports were high correlated to team success: the most successful teams showed the highest results in both group cohesion aspects. In the study of potential disadvantages of too high cohesion in sports teams, data analysis indicated the co-existence of negative effects of both aspects of group cohesion, both on group and individual level[27]. On the basis of the research overview it can be concluded that in general group cohesion more often shows positive correlation with real and perceived success in sports (as well as in many other areas of human activity). But the nature of this correlation is not so simple.

Importance of the micro social structure of a team

Actual quality of an individual player in basketball is described by the level and harmonious composition of his/her decision making and motor skill execution within the frame of individual and team solutions to problems in the game. But, collective goal (high competitive achievement of team) is considered as the dominat motivation resource for individually executed, movement and actions. So, we can recognize the individual and team aspect of the actual quality of an individual player.[28] Team aspect of the actual quality implies the volume of his/her individual ability to contribute his/her team-mates play by performing effectively and achieving competitive results. Only when indivudal qualities of players are mutually combined within the concept of play, individual players can perfom their particular role(s). The quality of a team implies the ability of a team to contribute to and to open possibilites to individual perfomance quality of each player to be manifested on a court.[28] It is accomplished through the play concept (comprises strategy and tactics). It is presumed that very important characteristics for an individual player as a team-player are: tactical discipline, tactical responsibility, cooperation[28]. Social structures are simultaneously a set of relations between positions and interactional relations between people. Micro-level focuses on individuals and their interactions and macro-level focuses more upon social structure, social processes and problems, and their interrelationships. Micro structures have some of the features usually only associated with macro structures but nonetheless there are qualitative differences in kind between macro and micro structures[29]. Micro social structure of one group of players that form a team can strongly influence the final score in team sports. There are few reasons for it. First, understanding what is happening in small groups is important, because collective decisions often have a decisive influence on development of small communities and their fluctuations in their historical dimension and because the group dynamics significantly affects the everyday way of life of the individual. Second, small groups are suitable for experimental interaction of psychological and sociological elements, with a consequence of interpersonal and collective pressures and charges, which cannot be observed or explained in »usual« social aggregates (gender, class, cultural differences). Third, study of small groups enables us to know what the dynamics has the society in its individual cases. And fourth, small groups represent a special case of social systems; they are microcosms that reflect its individual characteristics: ethical principles, division of labour, history, everyday life, ideology, ranking by prestige, cooperation etc.[30]. Micro level theories are role theories, so we have to consider the roles for the players on different playing positions.

Differences of basketball players depending of their player positions

In many team sports, numerous studies researched the differences in anthropological characteristics of players that play different roles in the game. For example, in water polo, differences between five different player positions (roles in the game) were established and explained regarding the type and intensity of load during the competition over number of actions, levels of effort, quantity of movements in horizontal phase as well as in vertical phase during the game[30–32]. In a study of field hockey players, purposes were to assess perceptions of position-specific and cross-skill self-efficacy in a team sport and to assess the effect of competition level on skill-specific self-efficacy. The results indicated that forwards scored higher on the forward-specific self-efficacy scores than either midfielders or defence. Furthermore, 1st Division athletes scored significantly higher on the forward-specific self-efficacy scores than either 2nd or 3rd Division athletes[33]. In a study with the aim to evaluate whether the players in different positional roles have different physical and physiological profiles at elite Croatian handball players. The results of the study show there are differences in the physical and physiological characteristics in different positional roles of elite handball players[34]. In basketball, players with different roles in the game could be differentiated in their body height, body mass and scores in standard indicators of the playing performance[28]. Differences in roles are transparent in five positions: point guard (e.g. level of defensive pressure, the ball control, passing skills); shooting guard (e.g. level of defensive pressure, transition defense efficiency, outside shots); small forward (e.g. transition defense efficiency, offense without the ball, dribble penetration); power forward (e.g. inside shots, dribble penetration, efficiency of screening); center (e.g. defensive and offensive rebound efficiency, inside shots)[28].

In numerous team sports, different positional roles have special positional requirements which should reflect the differences in anthropological characteristics. From this short literature review, we can see that players could be differentiated, according to their roles in team, by structural and functional characteristics, specific technical and tactical knowledge, etc. But conative characteristics are rarely the objective of determining the differences between team roles of players in any of team sports. Why? It could be explained with a nature of modern team sports: they are all very complex and demanding for any player's position in team. So, we can expect that personality characteristics at basketball players can be very similar, not depending about their team roles. Whether this is the case with basketball, the aim is of our research.

The main goal of our research was to find whether the basketball players are different in the chosen conative characteristics (perfectionism and hardiness) and perceived team cohesion, with regard to their position in the team. The main goal of this research differentiates two problems: to identify differences between basketball players playing in positions of guards and forwards/centres (1); to identify the differences between four main positions in the team (2).

Subjects and Methods

In this correlative study, basketball players in the team were tested with permission of the Croatian Basketball Association and the clubs, within the period between sixth and eighth round of the A-1 league championship (from December 2006 until first half of January 2007). The subjects were informed about the questionnires, without being informed of the aim of the study.

Subjects

Intentional sample of subjects made top senior Croatian basketball players, that were playing in nine men senior teams in A-1 Croatian Men Basketball League in the 2006/2007 championship: »Cedevita«, »Svjetlost«, »Borik«, »Kvarner«, »Dubrava«, »Dubrovnik«, »Alkar«, »Šibenik« and »Osijek«. Age range of subjects was relatively large (17–40), with average age of 23 and six months. The final sample of subjects (74 basketball players) was selected from the initial sample of 107 subjects. In the final sample, basketball players were differentiated according to their position in their team. Conditions for selecting the players in the final sample 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 played). In the first part of the research all players on guard positions were compared ($N_1 = 47$; point guard and shooting guard) and forwards/centres ($N_2 = 27$; small forward, power forward and centres). In the second part of the research, four groups of players were compared, i.e. players on positions: point guard $N_1 = 18$; shooting guard $N_2 = 29$; small forward $N_3 = 10$; power forward, and centre $N_4 = 17$.

Variables

1. Short Hardiness Scale (SHS)

We used a shortened version of Bartone Dispositional Resilience Scale (DRS), the so called Short Hardiness Scale (hereinafter the SHS[12]). SHS consists of 15 items, based on self-evaluation of the level of »hardiness«. The subjects have to estimate their own behaviour on Likert 4-point scale, ranged from strongly disagree (0) to strongly agree (3). Five items of the scale refer to the commitment dimension, 5 to control and 5 to challenge. The results are defined as a simple linear combination of estimations for items from each of the sub-scales. In eleven items, higher estimation means higher emphasis on individual dimensions of hardiness, while remaining four items are recoded. In previous research SHS indicated very satisfactory metric characteristics[11]. Intercorrelations between hardiness dimensions obtained by Maddi et al.[8] were positive and statistically significant, ranging from 0.37 to 0.69. Translated and adapted, SHS was applied in Croatia: Hudek-Knežević and Kardum[36,37] preliminary used SHS on 822 subjects from average pop-

ulation and found the reliability $\alpha = 0.69$ (whole questionnaire). In our research we used Croatian version of SHS[36,37]. Besides the dimension of commitment ($\alpha = 0.45$), the remaining two dimensions of the SHS had a low but satisfactory reliability: control ($\alpha = 0.52$) and challenge ($\alpha = 0.68$), the reliability of the whole questionnaire being ($\alpha = 0.74$). All three factors explained 46% of total variance in scale.

2. Sports Multi-dimensional Perfectionism Scale (multi--dimensional perfectionism)

To measure perfectionism, we used two instruments: Sports Multi-dimensional Perfectionism Scale, and Burns Perfectionism Scale. Sports Multi-dimensional Perfectionism Scale[12] (hereinafter SMPS) was constructed for athletes in team sports. It has 30 items, with four dimensions: personal standards (contains 7 items), anxiety over mistakes (8 items), perceived pressure from parents (9 items) and perceived pressure from coach (6 items). Participants were also asked to rate their behaviour on on Likert 5-point scale, from strongly disagree (1) to strongly agree (5). The results are defined as a simple linear combination of estimations for items from each of the sub-scales (higher scores means higher multidimensional perfectionism). In previous research, SMPS showed rather satisfactory metric characteristics[19]. Dunn, Gotwals & Causgrove Dunn[19] showed that Cronbach's alpha-coefficients for all scales in the questionnaire indicate high level of internal consistency reliability, ranging from 0.76 to 0.89. In our research, it was found that all dimensions of the translated and adapted instrument had a low but satisfactory reliability: personal standards ($\alpha = 0.62$), anxiety over mistakes ($\alpha = 0.77$), perceived pressure from parents ($\alpha = 0.61$), and perceived pressure from coach ($\alpha = 0.68$), while the reliability of the whole questionnaire was $\alpha = 0.87$.

Factor structure of dimensions might significantly vary with depending of the type of sport and specific samples of athletes. In our research, all four factors explained 43% of total variance in SMPS. Using the quasi--confirmatory factor analysis with fixed number of factors (four), we identified minor deviations from original dimensions of the questionnaire. So, we aggregated the total results according to the original SMPS dimensions. It is important to point out that the content of items in the questionnaire is adjusted for basketball characteristics and game situations (similar like Dunn, Causgrove Dunn & Syrotnik[12] did for American football).

3. Burns Perfectionism Scale (unidimensional perfectionism)

The Burns Perfectionism Scale (hereinafter BPS) seemed adequate for this research, since it is already adapted to Croatian population[14]. It contains 10 items to which the subjects respond on Likert 5-point scale. In the version of scale adapted to Croatian population, instead of estimations ranged from +2 to –2, estimations from 5 to 1 were used with the same meanings. The total result is formed as a linear combination of estimations (higher estimations means higher perfectionism). Hewitt and Mittelstaedt[32] found reliability of Burns scale internal

consistency type of 0.70. In his earlier research, Hewitt found out that test-retest coefficient was 0,63 after two months, and Burns, after a six-week interval 0.78[14]. Frost et al.[14] on the sample of students obtain Cronbach's alpha of 0.82. The sample of student population in Croatia[14] resulted in reliability of scale internal consistency type of 0.62. In the research conducted by Ivanov, Penezić and Gregov[14] a shortened version of this scale was used, so the reliability of internal consistency type was 0.73, and test-retest after two weeks was 0.74. Correlation between total result on the Multi-dimensional Perfectionism Scale and Burns scale is as high as 0.85. The correlation between Burns and their scale is somewhat lower, but still significant for all three sub-scales of Multi-dimensional perfectionism. Correlation is the lowest for the sub-scale socially desirable perfectionism and reads 0.39, while for the sub-scale perfectionism oriented to others this correlation reads 0.40. Correlation is the highest with sub-scale of self-oriented perfectionism and reads 0.57. These results are in line with the opinion that Burns scale measures primarily self-oriented perfectionism. In our research, the reliability of the whole scale was $\alpha = 0.69$. However, unique factor in our research explained only 26% of total variance in scale.

4. Group Environment Questionnaire (perceived group cohesion)

Perceived group cohesion in the team was measured applying Group Environment Questionnaire[38] (hereinafter GEQ). This questionnaire was based on self-evaluation and contains 18 items. Four aspects of group cohesion are evaluated: attractiveness of group task for an individual (hereinafter AGTI; contains 4 items), social attractiveness of a group to an individual (hereinafter SAGI; contains 5 items), group integration over task (hereinafter GIT; contains 5 items), group social integration (hereinafter GSI; contains 4 items). The subjects are supposed to evaluate the level of their agreement with the content of items pertaining to various aspects of group functioning, on Likert 9-point scale, with extreme estimations from »strongly disagree« (1), to »strongly agree« (9). The results are formed as a simple linear combination of estimations on items defining individual dimension. The questionnaire showed an acceptable internal consistency, indicated by the values of Cronbach's alpha-coefficients, ranged from 0.68 to 0.75[38] (for different scales). In two other researches, internal consistency coefficients were AGTI (0.61), SAGI (0.72), GIT (0.72), and GSI (0.76)[39] and AGTI (0.64), SAGI (0.75), GIT (0.70), and GSI (0.76)[40].

According to data available, it was not used in Croatia. In our research, all dimensions of the measuring instrument showed a low but satisfactory reliability, with Cronbach's alpha-coefficients for dimensions of the questionnaire as follows: AGTI (0.55), SAGI (0.66), GIT (0.68), and GSI (0.68), while the overall reliability of the questionnaire was 0.86. The questionnaire showed satisfactory construct value. Consequently, reliability and validity of GEQ is satisfactory.

Statistical methods

Statistical analysis of data was performed using the statistical program SPSS 7.5. Descriptive statistics were calculated for all the experimental data. For determining construct validity, we used quasi-confirmatory factor analysis (main components method and fixed number of factors that correspond to the number of dimensions expected for each instrument). Because we found only minor deviations from original factors, we aggregated the total results according to the original dimensions, using simple linear combination method. To estimate statistical differences between the groups in variables of conative characteristics and perceived group cohesion of basketball players, in relation to their positions in the team (guards compared with forwards/centres), discrimination analysis was used. The other type of estimation statistical differences between the groups (comparing players that play in four different positions in the teams: point guard; shooting guard; small forward and power forward/centre) was Kruskal-Wallis test. When the difference between play positions was statistically significant (for testing the differences between the pairs of play positions), we used Mann-Whitney U-test.

Results

In Table 1 mean values and standard dispersions are shown, as well as data on normality of distributions for individual variables, i.e. dimensions of individual measuring instruments to measure perfectionism, hardiness, and perceived group cohesion. Out of all the hardiness dimensions, the dimensions of commitment and control show the highest means (where even distributions of results show statistically significant deviations from normal distribution, in the meaning of positive asymmetry; all other dimensions of all measuring instruments do not statistically significant deviate from the normal curve). Out of all the multi-dimensional perfectionism dimensions, the dimension of personal standards shows the highest average means. Out of all the dimensions of perceived group cohesion basketball players, the dimension of group social integration shows the highest average mean.

As shown in Table 2, canonical correlation coefficient which represents the measure of correlation between allocation to an individual sub-sample and results on discrimination function is average and reads 0.39. Wilks' lambda (0.85) indicates that discrimination function does not distinguish statistically significantly the players in positions guard and forward/centre ($\chi^2 = 11.13$; $p > 0.20$). Consequently, the players cannot be distinguished on the basis of conative characteristics and perceived group cohesion. Group centroids were 0.32 for the guards positions and –0.56 for the positions forwards/centres. Coefficients of structure indicating correlation of individual discrimination variable with discrimination function in this case vary by –0.03 up to 0.63. Univariate ANOVA for specific dimensions differentiates players only according to one characteristic: the commitment from Short Hardiness Scale. Wilks' lambda is 0.93 ($p < 0.05$), in the direction of higher results for guards. On the basis of discrimination function a total of 70.3% of correct classifications of original cases can be made. (Practically the same results were obtained when we used Mann-Whitney U-test for two independent samples, for the same comparison.)

As shown in the results in Table 3, players in four different positions in the team cannot be differentiated in relation to any of the individual conative characteristics and perceived team cohesion, i.e. their dimensions. Therefore, no matter the position they play in the team, the basketball players are very similar according to conative characteristics and perceived team cohesion.

Discussion

Unlike situation efficacy parameters or structural and functional characteristics, the players playing in different positions in the team cannot be distinguished on the basis of a number of conative characteristics and perceived group cohesion. Neither discrimination function, nor individual non-parametric tests differ statistically significantly the players in different positions in the team. Moreover, if individual dimensions from the group of conative characteristics and perceived group cohesion are analysed, differentiation of players is not statistically significantly possible by most of the characteristics. Only one individual statistically significant difference has been found, for the commitment (as a component of hardiness), in the direction of better results of players in guard positions. Commitment to task of an individual and his wish to do his utmost for the team under the stressful

TABLE 1
DESCRIPTIVE STATISTICS FOR ALL DIMENSIONS OF ALL MEASURING INSTRUMENTS

Variable	$\overline{\mathrm{X}}$	SD	Kolmogorov-Smirnov Z	Significance
COMMIT	2.41	.32	1.43	<05
CONTRO	2.21	.38	1.41	<05
CHALLEN	1.48	.68	.78	<10
PERFECT	3.32	.61	.82	>20
PERST	3.16	.77	.79	>20
ANXIETY	2.36	.76	.87	>20
PARPRESS	1.83	.57	1.25	<10
COAPRESS	2.59	.77	.90	>20
AGI	6.61	1.87	.93	>20
SAGI	6.72	1.44	1.01	>20
GSI	7.12	1.57	1.25	<10
GIT	6.47	1.53	.80	>20

AGI – attractiveness of the group for an individual, SAGI – attractiveness of the group task for an individual, GSI – group social integration, GIT – group integration over task, PERST – personal standards, ANXIETY – anxiety over mistakes, PARPRESS – perceived pressure from parents, COAPRESS – perceived pressure from coach, BPS – Burns Perfectionism Scale, COMMIT – commitment, CONTRO – control, CHALLEN – challenge

TABLE 2
DISCRIMINATION ANALYSIS FOR BASKETBALL PLAYERS IN POSITIONS GUARDS AND FORWARDS/CENTRES IN RELATION TO
CONATIVE CHARACTERISTICS AND PERCEIVED TEAM COHESION

Discrimination function		Characteristic root	Wilks' lambda	Canonical correlation	χ^2-test (degrees of freedom)			p
		.18	.85	.39	11.13 (12)			>.20
Variables	Wilks' lambda	Correlation with discrimination factor	F-test (1.72)	p	M Guards	M Forwards/centres	SD Guards	SD Forwards/centres
COMMIT	.93	.63	5.31	<05	2.48	2.30	.27	.38
CONTRO	1.00	.07	.07	>20	2.22	2.19	.38	.40
CHALLEN	1.00	–.03	.01	>20	1.48	1.50	.69	.67
PERST	1.00	.42	.20	>10	3.35	3.28	.56	.70
ANXIETY	.97	.02	2.36	>20	3.27	2.98	.71	.85
PARPRESS	1.00	–.03	.01	>20	2.37	2.35	.70	.87
COAPRESS	1.00	.16	.01	>20	1.83	1.84	.55	.61
GSA	1.00	.12	.32	>20	2.62	2.52	.67	.93
SPGP	1.00	–.08	.39	>20	6.72	6.44	1.85	1.95
AGTI	1.00	.17	.08	>20	6.68	6.78	1.39	1.55
GSI	1.00	–.10	.13	>20	7.07	7.20	1.52	1.67
GIT	1.00	.11	.16	>20	6.53	6.38	1.64	1.32

GSA – group social attractiveness for an individual, AGTI – attractiveness of group task for an individual, GSI – group social integration, GIT – group integration over task, PERST – personal standards, ANXIETY – anxiety over mistakes, PARPRESS – perceived pressure from parents, COAPRESS – perceived pressure from coach, BPS – Burns Perfectionism Scale, COMMIT – commitment, CONTRO – control, CHALLEN – challenge

circumstances of basketball game makes a difference between guard and forwards/centre.

The main result of the research confirms the main hypothesis, that there are no statistically significant differ-

ences among basketball players playing in different positions in a team, on the basis of their conative characteristics and perceived group cohesion. From the specification equation for the success in basketball, the results ob-

TABLE 3
DIFFERENCES IN CONATIVE CHARACTERISTICS AND PERCEIVED TEAM COHESION AMONG BASKETBALL PLAYERS THAT PLAY IN
POSITIONS POINT GUARD, SHOOTING GUARD, SMALL FORWARD AND POWER FORWARD/CENTRE

Variables	Kruskal Wallis test	p	Average PG rank	Average SG rank	Average SF rank	Average PF rank
COMMIT	4.98	>.10	44.42	38.59	26.70	34.68
CONTRO	1.21	>.20	39.72	36.76	42.00	33.76
CHALLEN	.61	>.20	34.67	38.83	35.75	39.26
PERST	2.37	>.20	38.89	41.14	34.30	31.71
ANXIETY	1.17	>.20	39.42	38.17	30.80	38.26
PARPRESS	.18	>.20	36.06	38.41	36.30	38.18
COAPRESS	.77	>.20	34.89	39.98	37.95	35.76
BPS	2.50	>.20	32.75	42.17	34.45	36.35
SAGI	.38	>.20	35.53	37.47	40.70	37.76
AGTI	.93	>.20	41.03	37.21	37.85	34.06
GSI	.46	>.20	37.03	35.81	39.75	39.56
GIT	2.19	>.20	43.67	35.95	37.50	33.62

SAGI – social attractiveness of the group for an individual, AGTI – attractiveness of group task for an individual, GSI – group social integration, GIT – group integration over task, PERST – personal standards, anxiety – anxiety over mistakes, PARPRESS – perceived pressure from parents, COAPRESS – perceived pressure from coach, BPS – Burns Perfectionism Scale, COMMIT – commitment, CONTRO – control, CHALLEN – challenge, M rank – average rank, p – probability of importance, PG – point guard, SG – shooting guard, SF – small forward, PF – power forward

tained are understandable: situation efficacy of basketball players depends mostly of »non-psychological« components from the specification equation (anthropometric characteristics, basic motor skills, specific basketball motor skills, functional skills, tactical knowledge and health status). Psychological characteristics are only one of the numerous factors that have influence on success in basketball[41]. In other words, top basketball players probably have a complex set of conative characteristics which are in complex interactions. However, those characteristics are influenced with many factors, as are complex relationships between: basketball coaches and players, coaches and club management, relationships between the players in the team. We have to repeat that micro social structure of one group of players can strongly influence the player's and team perfomance[5,29]. The position of the player in basketball team is probably one of less important, among all these factors. Comparing with a research with field hockey athletes, where differences in conative characteristics according to their team roles are found[33], we can assume that the difference in relevant conative characteristics can exist in team sports which in general have relatively higher level of strictly defined team roles for each player and which are less dinamic (such as soccer, football, field hockey). Basketball is very fast and dinamic sport, with common necessity for exchanging team roles. However, playing roles are overlapping with each other[28]: the center shoots as a guard sometimes, the guard rebounds as a center. All in all, to perform all these various tasks, similar relevant personality traits are required.

The results obtained from this research can nevertheless have a scientific and practical value. From the scientific point of view, positive aspects of this research are first of all at least two facts: initial application of some measuring instruments in Croatia (to our knowledge, Group Environment Questionnaire and Sports Multi-dimensional Perfectionism Scale) and evaluation of intentional sample of top Croatian basketball players. From the practical aspect, since in this research has found that there are practically no statistically significant differences between players with different game roles, probably the game roles wouldn't be good criteria to make a selection on the basis of conative characteristics for younger basketball players. Top basketball players (who have undergone several years of training and multiple selections) may be very similar in numerous personal characteristics important for success in sport, as well as in their social beliefs (perceived group cohesion). The results from previous researches support such finding: athletes from one sport often in type and personality profile differs from athletes from other sports; it is difficult to distinguish between players of different skill levels based solely on personality variables; top athletes can be distinguished from the athletes of lower sport abilities, based on personality variables[42]. As it was found for hardiness and mental toughness[9,43], the level of competition (as well as age, gender, sport type and sport experience) is probably the most important factor that can differentiate players in basketball. The realisation that the players playing in various positions in the team do not differ in the chosen conative characteristics and perceived team cohesion, could be the guidance for more qualified and modified coaching work with the individuals showing most difference in those characteristics. In other words, identification of desirable personal characteristics i.e. group functioning can be useful for a correction or compensation of one personal characteristic with another. Basketball players with »unsatisfactory« conative characteristics can be given a different methodical approach (individualised work) and eventually specific psychological preparations for the sports competition. These could be for example exercises to: improve stability of quality performance of individual players, projective-educational conversations, increase of (perceived) team cohesion.

The disadvantage of this research may be testing process, which was not carried out under standardised conditions (the research was carried out simultaneously in nine different Croatian cities). Potentially most important reason for the results obtained is consequence of selection of the sample of subjects. It is quite possible that relatively small variability in the area of situation efficacy parameters, and potentially of conative characteristics and perceived group cohesion as well, was caused by multiple selection of the sample of basketball players. Namely, the sample of subjects in the research included players from A-1 league, but not the players from four most successful Croatian teams (»Cibona«, »Zadar«, »Zagreb« and »Split«). Such strategy of sampling reduces the variance in conative characteristics and perceived group cohesion, which could influence onto lack of differences among players with different positions in the team. Specificity of the championship (A-1 league Croatian Senior Basketball Championship 2006/2007) also could have significantly influenced the results. The championship has proven to be uncertain from the very beginning, due to the dominance of two teams (»Cedevita« and »Svjetlost«), and practical impossibility of the relegation from the league of even the least successful team (»Dubrava«). The presumed lack of uncertainty could have reflected primarily on situation efficacy of individual players, but also on the statements of basketball players on conative characteristics (measuring instruments of personality).

The potential reasons for the results obtained give directions for future research. At first, we can choose the different instruments for measuring different personality characteristics (probably better adapted to basketball requests, especially from the aspect of team roles. The other solution to try to reflect differences among top basketball players in tested conative characteristics and perceived group cohesion could be different types of evaluations of these characteristics. For example, qualitative methodology could be used instead of quantitative, which could influence other differences in conative characteristics and perceived group cohesion in relation to the position of the basketball player in the team[42]. The future research might attempt to somewhat increase the number of subjects (try to test injured and players absent for other reasons), or including players from the four most

successful Croatian teams. However, we can change the system of the evaluation of the successfulness of the basketball players[44,45].

Consequently, the result obtained showed that the subjects, i.e. top senior basketball players from A-1 league playing in different positions in the team, do not statistically significantly differ in relation to selected conative characteristics (perfectionism and hardiness), nor in relation to perceived group cohesion.

Conclusion

Our hypothesis has been confirmed, stating that there are no statistically significant differences among different groups of basketball players, with regard to the position in the team) in the analysed dimensions of personal characteristics and perceived group cohesion.

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RAZLIKE U KONATIVNIM KARAKTERISTIKAMA I PERCIPIRANOJ GRUPNOJ KOHEZIJI KOŠARKAŠA KOJI IGRAJU NA RAZLIČITIM POZICIJAMA U TIMU

S A Ž E T A K

Otkrivanje razlika u pojedinačnim konativnim karakteristikama i percipiranoj grupnoj koheziji košarkaša koji igraju na različitim pozicijama u momčadi, moglo bi dati smjernice za kvalitetniju selekciju košarkaša i kvalitetniji trenerski rad. Cilj našeg istraživanja bio je utvrditi te razlike, u odnosu na pozicije bekova i krila/centara te četiri glavne pozicije u momčadi. Finalni uzorak ispitanika (74 košarkaša) je selekcioniran iz inicijalnog uzorka od 107 ispitanika, košarkaša devet muških seniorskih momčadi A-1 Hrvatske muške košarkaške lige iz prvenstva 2006/2007. Rezultati su pokazali da nema statistički značajnih razlika košarkaša koji igraju na različitim pozicijama u momčadi, niti u odnosu na dvije temeljne pozicije u momčadi (bek nasuprot krilo/centar), niti u odnosu na četiri pozicije u momčadi (point guard, shooting guard, small forward, power forward/centre).