THE IMPACT OF PERSONALITY TRAITS AND CONFLICT RESOLUTION STRATEGIES ON GAME EFFICIENCY OF FEMALE VOLLEYBALL PLAYERS

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ABSTRACT

Volleyball is different from other team sports, because in volleyball there is no physical contact between the opponents. This general characteristic of volleyball is unique and it influences the personality traits, which are important for good players. The research has been made with 27 female volleyball players from Bulgarian National Volleyball League. Their personality traits have been researched with Big Five Personality Test developed by Goldberg (1992), and their behavior in conflict situations with Thomas-Kilmann Conflict Mode Instrument (1977). The analysis of the game characteristics has been made with "Data-4". The data which is used are basic elements of the game - serving, receiving, attack, block and defense. The results show that personality characteristics are influenced by the game efficiency in situations of block and attack. The better qualified players from "Maritza" have higher level of Competing, which helps them play better in the ultimate phase of the game. On the other hand "Rakovski's players choose consciously and strictly behavior - they have difficulties during attack, but better effectiveness in defense.

Key words: women, personality traits, interpersonal relationship, volleyball, game efficiency

INTRODUCTION

The playing indicators in volleyball represent different technics and tactics as well as their variations such as serves, reception, attack, block and defense. Game efficiency in volleyball is based on different factors - physical preparation, technical skills and psychological abilities such as cooperation, communication and adaptation to the mental aspects of team group dynamics (Quiroga et al., 2010). On the other hand we can take the view of sport psychology researchers who have been interested in how athletes' psychology and characteristics influence performance. From this point, it is clear that psychological characteristics differ between more and less effective athletes and teams. Moreover, the ability to mentally prepare is considered a key component of such differences (Brewer, 2009).

Our personality is based on a number of different parameters and traits, which are described as dispositions to reaction in one or another way. There are many authors who have described five independent dimensions through surveys with self-report questionnaires across different cultures and countries (McCrae & John, 1992). They used the five-factor model of personality which is based on a hierarchical organization of personality traits in terms of five basic dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to

Experience.

The models of conceptualization of the modern five-factor model of personality are attributed to Goldberg, Costa and McCrae (Goldberg, 1990, 1992; Costa & McCrae, 1992a, 1992b, 2008). Goldberg's model is known as the "Big five". The first structure is described by the factors Extraversion, Agreeableness, Conscientiousness, Emotional stability and Intellect (Goldberg, 1990, 1992). The second - by factors like Neuroticism, Extraversion, Openness to experience, Conscientiousness and Agreeableness (Costa & McCrae, 1992a, 1992b, 2008).

The analysis of the game efficiency is another aspect of the problem with the multicomponent success in elite sport. It gives coaches information which is necessary for them to be able to accurately plan the training process (Garganta, 2012; Hughes & Bartlett, 2002). Such type of analysis has been used in recent years in a number of researches at different volleyball levels (Afonso et al., 2010; Costa et al., 2012; Miskin et al., 2010; Palao & Ahrabi-Fard, 2011). In their research the authors show the influence of the efficiency of separate game indicators on the results of the team. They conclude that, in women's volleyball, the efficiency of the serve and the attack is of prime importance for the success of the game. The rallies during women's games are

relatively longer compared to men's games due to the more successful defense play women demonstrate (Afonso et al., 2010; Mesquita & Cesar, 2007; Miskin et al., 2010; Palao et al., 2009).

Aim and objectives of the study

The aim of the study is to establish the differences in the performance of various teams and to determine the personal players' traits on their game efficiency. The subject of the study is the playing process in women's volleyball, and some personal characteristics, the players' behavior and their efficiency in performing basic elements – serve, reception, attack, block, defense. The research has been conducted on 27 players from VC Maritza and VC Rakovski, who took part in the games of the National Volleyball League, Women 2018/2019.

METHODOLOGY

The personality traits of the players have been researched using the *Big Five Personality Test developed by Goldberg (1992)* and their behavior in conflict situations using *Thomas-Kilmann Conflict Mode Instrument (1977)* in our previous research. The processed data for the efficiency of the players is based on all games from the regular season with the top 6 teams in the Bulgarian championship, as well as the play offs, a total of 14 games per team.

The statistics software Data-Volley 4 (Data Project, Italy) has been used to determine the number and level of execution of the various skills.

For each player an efficiency rate (*E%) has been calculated based on all technical and tactical elements observed. It is calculated based on a formula which takes into account the positive and negative play actions of the players, as well as the total number of players involved in the respective play action. For higher accuracy of the analysis, if a player had less than 10 play actions, her indicators have not been taken into consideration.

For determining the importance of the variations between team performances, for the purpose of the research we have used Student's t-criteria for independent representation. The link between the personnel characteristic and the playing efficiency has been calculated using the Spearman correlation coefficient.

RESULTS

The data of the survey reveals that the scale with the highest result is Compromising, which is the trait described by both assertiveness and cooperativeness (Table 1). The research shows that the younger players are more open, and try to find more information about the sport environment and to learn more about the game and their own development. Our conclusions are that the higher the qualification and the age, the more the players prefer competing in their interpersonal relationships. The less experienced players prefer simpler rules and instructions.

The results are expected and normal if we take the game of volleyball and the personality characteristics which are important for the successful career of the players. The styles show conflict solving as a basic priority value which comes before any personal interests and goals. This is very important when we build a team, and it is important for good results. On the other hand, we have the two scales from Thomas-Kilmann instrument – Avoiding, when the player tries to stay away from problem, and Competing, when they try to win their personal position. We can emphasize that the overall view is based on many other factors and parameters like communication style of head coach or tactic for the game.

Overall, the results indicate that Compromising has the highest score. Competing is the scale with the lowest points. These traits are important for volleyball as a team game and confirms that the attitudes to conflict and to deviant thinking and behavior are not typical for many of the situations.

The teams in the research are part of the Bulgarian championship, but their results and their qualifications are very different. The younger players from VC Rakovski are more open and try to find information about the sports environment and learn more about the game and their personal growth. The conclusions show that VC Maritza's more qualified players are more competitive than others. They play and behave with more sport aggressiveness. The purpose is to reach the victory using different approaches.

Table 1. *Comparative analysis of the researched parameters between the teams*

Parameter	Team	N	Mean	Std. Deviation	t	Sig.
Competing	Maritza	15	5,60	3,22	2,64	0,001
	Rakovski	12	2,50	2,74		
Colaborrating	Maritza	15	6,53	1,50	-1,27	0,573
	Rakovski	12	7,16	0,93		
Compromising	Maritza	15	7,20	1,61	-0,60	0,891
	Rakovski	12	7,58	1,67		
Avoiding	Maritza	15	5,53	1,30	-0,10	0,764
	Rakovski	12	5,58	1,24		
Accommodating	Maritza	15	6,13	2,06	-1,23	0,288
	Rakovski	12	7,16	2,28		
Extraversion	Maritza	15	36,73	5,58	0,66	0,543
	Rakovski	12	35,16	6,69		
Agreeableness	Maritza	15	39,60	4,01	2,56	0,003
	Rakovski	12	42,83	6,67		
Conscientiousness	Maritza	15	39,86	5,47	3,21	0,001
	Rakovski	12	42,41	5,31		
Neuroticism	Maritza	15	30,86	6,64	0,55	0,421
	Rakovski	12	29,00	10,66		
Openness	Maritza	15	36,60	4,56	-0,28	0,273
	Rakovski	12	37,08	4,01		

Winning the game in volleyball is a multifactor task, which depends mainly on technical and tactical preparation of the teams, not only on personal characteristic of the players. Therefore we need to emphasise on the results of the research on the teams. Now it is the right time to mention that VC Maritza is a champion of Bulgaria and VC Rakovski takes 4th place in the league for season 2018/2019. Both teams play against each other at the semi-final playoffs and the future champion of Bulgaria has won both matches. The preparation of all players from both teams is exactly the same as the players

in VC Rakovski are from the youth academy of Maritza. That is the reason why we are comparing these two teams so we can see where the young players need to improve and become part of VC Maritza in future.

Thorough analysis of the games of the teams for season 2018/2019 shows the efficiency of both teams in the different phases of the game (Table 2). An efficiency coefficient, which shows us the performance of each player and the team has been calculated.

Table 2. *Comparative analysis of the game efficiency between the teams*

Parameter	Team	N	Mean	Std. Deviation	t	Sig.
Serve	Maritza	11	68,82	6,11	1,49	0,152
	Rakovski	11	59,18	20,58		
Reception	Maritza	9	27,67	6,12	0,54	0,593
	Rakovski	11	24,18	18,32		
Attack	Maritza	11	38,09	11,45	3,40	0,003
	Rakovski	11	21,00	12,10		
Block	Maritza	11	34,00	12,26	3,78	0,001
	Rakovski	11	14,55	11,85		
Defense	Maritza	12	59,67	8,95	-0,51	0,614
	Rakovski	11	61,64	9,52		

The team of Maritza shows better scores of four of the five components of the game. At serve receive the difference is relatively small – under 10%. At the winning elements attack and block the defer-

ence is significant. Maritza players' efficiency on average is 38,09% and the rate of Rakovski is 21%. The difference of 17,09% and Student's t-criteria of 3,40 shows us that the final standing of the teams in the league is because of the most successful attack of the players of Maritza. The difference in block is bigger, almost 20%. The efficiency of Maritza is 34% and Rakovski is 14,55. The Student's T-Criteria here of 3,78 shows us better game organization of Maritza, which we think is normal as they are more experienced. Blocking is the hardest element in volleyball. It takes longer time and more work to improve blocking and get to high professional level. The only component where the efficiency of Rakovski is higher, is defence. Rakovski efficiency is less than 2% better and the Student's t-criteria shows the difference to be insignificant. The results are better here because of the personal motivation of the players not because of the organization of the game in block-defence.

We can see the relation between the personal characteristic and behaviour of the players and its impact on the game using the correlation analysis of the results. There is a calculated Spearman correlation coefficient, which shows us the way of the influence of the characteristics. As we can see in *Table 3* there is not much of an impact of the game efficiency because of the personal characteristics and behaviour. This is very important in reception, where there is no dependence. That is why we have big quantities of games in our analysis and the conclusions are based on the whole period, not depending of the importance in different stages of the competition.

The *Conscientiousness* makes inversely proportional link between attack (-0,427) and block (-0,559).

The strength of the dependence with the attack is moderate, with the block – significant, which from a practical point of view is clearly logical bearing in mind the characteristics of contemporary volleyball. The game is getting more dynamic and the requirements towards players for fast adaptation to the rapidly changing games are becoming higher. Volleyball players have to build skills for identifying the opponents' actions both during attack and block. The players with better imagination and thought flexibility are better decision makers and are more inclined to improvise which helps them cope better both in attack and block. Players who are naturally more conscious follow the rules and do not like getting out of their comfort zone, hence they face difficulties with both of these elements of the game.

Another correlation which is worth paying attention to is the link between Compromising and Defence. The link is backwards and is on the brim between a moderate and significant correlation (-0,500). This correlation is equally fully understandable from a practical point of view. Volleyball players which are not inclined to defer their position and do not generally like to make compromises but stick to their own opinion, cope better and are more successful when playing defence. This should be taken into account by coaches especially when selecting players for the position of a libero or when giving more responsibility to certain players in defence positions. They need to have the necessary qualities to be able to cope. None of the rest of the personality and behavioural research criteria has influence on the play efficiency of the volleyball players of VC Maritza and VC Rakovski, which were subject of this research.

Table 3. Correlative analysis between the researched parameters

Parameter	Serve	Reception	Attack	Block	Defense
Competing	-0,234	0,305	0,193	0,119	-0,014
Collaborating	-0,224	-0,185	0,059	0,100	0,082
Compromising	0,041	-0,227	-0,175	-0,185	-0,500
Avoiding	0,225	-0,103	0,119	0,126	0,317
Accommodating	0,254	-0,300	-0,273	-0,236	0,020
Extraver	-0,277	-0,045	-0,034	-0,236	-0,188
Agreeableness	0,129	0,105	-0,384	-0,142	0,080
Conscientiousness	-0,128	0,034	-0,427	-0,559	-0,281
Neuroticism	-0,086	-0,086	0,251	-0,031	-0,182
Openness	0,178	-0,073	-0,001	0,032	-0,164

DISCUSSION

Based on the research we see that in order to win in the modern women volleyball, the attack efficiency in the sets needs to be 40-45% or even higher (Inkinen et al., 2013). Normally the winning teams have demonstrated higher attack efficiency (Eom & Schutz, 1992). The results from the research show this. Maritza demonstrates much better efficiency in attack than Rakovski and naturally wins the title in Bulgaria. Based on the results we can conclude that Maritza well deserved dominates last few years in Bulgaria. The players demonstrate high attack and block efficiency. The difference of the results of both teams in serve, receive and defence are insignificant. The efficiency of the players in serve and receive is not influenced by their personal characteristics and behaviour. The more decisive players taking the necessary risk are with higher efficiency. Their creativity gives them the best options to overcome the opponent. We can expect better defence from players upholding their positions on and outside the court.

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