

## OPINIONS OF HANDBALL FEMALE PLAYERS OF DIFFERENT LEVELS OF PERFORMANCE ABOUT PROFESSIONALISM AND HANDBALL STATUS

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*Original scientific paper*

### Abstract

*The aim of this research was to determine variation in opinions of female handball players about motivation, engagement, commitment, dedication and accomplishments in handball, i.e. professionalism in handball, as well as opinions about characteristics and status of handball as a sport, among female handball players of different levels of performance. The research was conducted on the sample of 99 female handball players acting in the Premier League of Bosnia and Herzegovina. The correlation analysis indicated that, generally, there is no significant correlation between allegations contained in a questionnaire. After applying Kruskal-Wallis's test, statistically significant difference was noted in only two allegations on the basis of quality criteria determined by the average number of goals scored during the season. According to the results obtained we could conclude that female handball players have a similar approach to handball regardless of the level of their performance, i.e. their opinions about characteristics and status of handball as a sport, do not vary significantly*

**Key words:** questionnaire, success in results, motivation, correlation

### Introduction

Handball is a very popular game that contains all natural forms of movement, but at the same time one of the most complex ones since it contains a series of cyclic and acyclic motion structures (Rogulj & Foretić 2007). Handball is characterized by plenty of dynamic motion structures such as running, jumping, rolling, throwing ...as well as situational confrontation (Rogulj & Foretić, 2007) of the teams participating in the game, which is reflected by mutual contact game in attack and defense in order to achieve the score, or, vice versa, to prevent it. Because of its attractiveness and the fact that, although, this is a team game, it provides enormous creativity of each individual player. Success in such a game is determined by the level and structure of a large number of characteristics and knowledge (Vuleta, Šimenc & Hrupec, 2004). At the same time, a distinctive anthropological status constitutes a peculiar complex of individual characteristics that enable high efficiency (Vuleta, Šimenc & Hrupec, 2004). Handball is labeled with clearly defined goal which is scoring as much as possible or receiving the least goals from the opponent (Rogulj, 2003). Official competitions are situations when, such easily defined goal, is concretized. Handball game is confrontation of two opponents i.e. two teams, each determined by the level of skills, qualities and knowledge that are used to achieve the best possible result, which means that the confrontation of two opponents produces a similar, but never the same result i.e. the course of the game (Vuleta et al., 2005). Certain events of each competition of two teams can be identified and recorded in different ways with the official statistical monitoring program during the competition or by subsequent video recording overview and they indicate the degree of situational effectiveness of both teams.

Involvement in sport is mainly parallel to the competition and for the most athletes it is the biggest motivation for diligent training and long-term participation in a particular sport. Success in handball was determined by internal factors, mostly anthropological features of the player, but certainly by the external environmental factors, which include social factors, which are the subject of this research. Numerous previous studies have analyzed the different social factors of success in handball (Milanović & Gabelica Šupljika, 2007; Luckwü & Guzman 2011; Sindik & Mihaljević, 2011). In this research the competitive success, as a criterion variable, was defined by statistical indicator of the number of goals scored, while the relation towards handball engagement and handball as sports activity was analyzed with the questionnaire of 16 statements as predictive variables. The aim of this work was to determine differences in attitudes of female handball players regarding motivation, engagement, dedication and achieved results in handball i.e. professionalism in handball as well as characteristics and status of handball as a sport among female handball players of different levels of performance.

### Methods

#### *Sample of respondents*

The sample included 99 female handball players from eleven Premier League clubs of Bosnia and Herzegovina from the season 2010/2011. The data of female players who participated in more than 50% of the games in mentioned season, were processed.

#### *Sample of variables*

In order to evaluate the attitudes and relations towards handball we applied questionnaire with 16 statements, designed according to Likert's scale.

The questionnaire includes two subsets of eight variables each, eight are related to allegations about motivation, engagement, dedication and achieved results in handball, i.e. engagement professionalism. (1. I am engaged in handball since elementary school, 2. Handball is the only sport I've trained, 3. I sacrificed (neglected) my education because of handball, 4. During my career I've had regular medical examination, 5. I have never been hurt in my career, 6. I am satisfied with accomplishments I have achieved in handball, 7. I am very motivated to train, 8. Even after my career I will be dedicated to handball). The other eight allegations are related to attitudes about characteristics and status of handball as a sport (1. Handball has a positive effect on health, 2. Injuries are very common in handball, 3. I am satisfied with my social status as a sportswoman, 4. Coaches who trained me in my career are qualified for their job, 5. The league I play in is high quality; 6. Female sport in Bosnia and Herzegovina is at a high level, 7. People have a positive opinion about women's handball, 8. Handball is an excellent recreational tool for ordinary people. In order to evaluate performance success we used the average number of goals in relation to the number of matches played, based on which the players are divided into two groups; the quality ones whose average score was above the arithmetic mean of the average of all players and less quality ones where average was below the arithmetic mean of the average of all players. In handball the main goal is to score as many goals as possible and to receive as few as possible. Despite the entropy of the results caused by unpredictable external factors, which actors can not directly influence, such as judicial decisions, scoring, as a resultant of cumulative situational activities of the confronted opponents along with technically-tactical factors, is primarily determined by the level of anthropological player's potential. Scoring i.e. "goal" is determined by a number of defender's, attacker's and goalkeeper's activities. Although, the physical goal occurs at the moment when the ball passes the goal line, it will become official only when the judge, on the basis of subjective evaluation, confirms it with the whistle. The goal scored is at the same time the only event demonstrated by numerical score change (Rogulj, 2003). Each handball event has an outcome and the result which can be determined by the rules of the game or can be the result of situational circumstances. The outcome of a shot at goal can be positive or negative. If the goal is achieved, i.e. scored, the consequence is absolutely negative, apropos the loss of the ball, since according to the rules it belongs to the opponent. If, however, the outcome of this event is not positive, hence the goal is not scored because the goalkeeper defended the goal or the ball bounced off the goal post, the outcome is negative and the consequences of this outcome can also be negative (the player of the opposite team caught the ball after the rejection) or positive (the attacking team player caught the ball). There is no doubt, and numerous studies have confirmed a significant effect of different types of goal scoring on the final result of handball

game (Brčić, 1997; Rogulj, 2000; Srhoj, 2001; Vuleta 2003; Ohnjec, 2008). Scores in handball are achieved during three phases of attack, counterattack, attack on unorganized defense and positional attack on positioned defense. Observing spatially, the goals are scored from six different playing positions. Left and right wingmen and pivot belong to line positions and center, left and right backcourt belong to outer positions. It is important to note that from the line and outer positions nearly equal number of total scores are achieved (Foretić, 2010). Fewer scores from the line in relation to outer positions during the phase of positional attack on positioned defense is compensated with more goals scored by the players on line positions during attack phase on unorganized defense and during counterattack. Likewise the fact that a handball game, lately, is much more dynamic, resulting with greater universality of the players, i.e. engaging in a few different positions, contributes to each player regardless of his position to score the goal. Therefore, considering the importance of the goal as the most reliable indicator of player's efficiency, as well as relative independence of scoring the goal regardless player's position, in this paper the number of goals scored is that certain criterion we used to evaluate player's quality.

#### *Methods of data processing*

For the purpose of this study we calculated descriptive statistical indicators, normality of allegation distribution was determined with KS-test and in order to determine correlation between the allegations we applied Spearman's correlation rank coefficient. Differences between high performance and lower quality performance of female players in relation to prediction variables were determined by Kruskal-Wallis's test.

#### **Results and discussion**

Table 1 shows the descriptive statistical indicators of the allegations. KS test proved that all the applied variables have distribution which significantly deviates from the normal so in further data processing and analyzing we will use nonparametric statistics. Correlation analysis Table 2 indicated that generally there is no significant correlation between allegations in the questionnaire. The highest correlation coefficient (0.44) indicates the correlation between coach's job qualifications and positive opinions of other people about women's handball. The correlation between the quality of handball league and generally the level of women's sports in Bosnia and Herzegovina (0.42) was also noted. Correlation coefficients between the first set of variables referring to professionalism of engagement in handball are below the threshold of significance. Unlike the first set of variables, we already emphasized correlation of variables within the second set. Hence, variables of the second set are in higher mutual correlation than variables of the first set. Differences in opinions referring to performance success, i.e. average goals scored, are obtained by Kruskal-Wallis's test.

Table1. Descriptive statistical allegation indicators (arithmetic means AM, minimum Min, maximum Max, standard deviation SD) and Klomogorov Smironov test (KS).

Br.	Variables	AS	Min	Max	SD	Skew	Kurt	KS
1.	I am engaged in handball since elementary school	1.14	1.00	4.00	0.61	4.41	18.44	.53
2.	Handball is the only sport I've trained	2.30	1.00	5.00	1.45	0.32	-1.81	.33
3.	I sacrificed my education because of handball	3.13	1.00	5.00	1.32	-0.27	-1.28	.30
4.	Handball has positive effect on health	1.61	1.00	5.00	0.84	1.59	2.70	.33
5.	During my career I get medical examination regularly	1.57	1.00	5.00	0.97	1.86	2.61	.38
6.	Injuries are very common in handball	1.90	1.00	5.00	0.98	1.25	1.25	.29
7.	I've never been hurt in my career	3.34	1.00	5.00	1.33	-0.77	-0.79	.36
8.	I am satisfied with accomplishments I have achieved in handball	2.02	1.00	5.00	0.98	1.22	1.73	.29
9.	I am satisfied with my social status as a sportswoman	1.33	1.00	3.00	0.55	1.43	1.15	.43
10.	I am very motivated to train	1.89	1.00	5.00	1.03	1.55	2.37	.29
11.	Coaches who trained me in my career are qualified for their job	2.08	1.00	5.00	1.18	1.23	0.85	.28
12.	The league I play in is a high quality league	2.90	1.00	5.00	1.22	0.03	-0.97	.16
13.	Female sport in Bosnia and Herzegovina is at a high level	3.61	1.00	5.00	0.92	-.95	1.03	.31
14.	People have a positive opinion about women's handball	2.77	1.00	5.00	1.12	0.21	-0.51	.18
15.	Handball is an excellent recreational tool for ordinary people	2.60	1.00	5.00	1.20	0.22	-1.03	.19
16.	Even after my career I will be dedicated to handball	2.35	1.00	5.00	1.03	0.20	-0.64	.22

The marginal value of KS test is significant at the 0.05 level for: d>0:16 when (N=100)

Table 2. Correlation rank of allegations

	TV1	TV2	TV3	TV4	TV5	TV6	TV7	TV8	TV9	TV10	TV11	TV12	TV13	TV14	TV15	TV16
TV1	1.00															
TV2	0.17	1.00														
TV3	0.20	0.02	1.00													
TV4	0.00	0.19	-0.03	1.00												
TV5	0.11	0.17	0.01	0.22	1.00											
TV6	-0.10	0.05	-0.06	-0.09	-0.05	1.00										
TV7	0.00	0.06	0.08	0.08	0.01	-0.04	1.00									
TV8	0.12	0.07	0.10	0.15	0.02	0.00	0.04	1.00								
TV9	0.02	-0.03	-0.14	-0.04	0.00	0.02	0.08	0.27	1.00							
TV10	-0.08	-0.16	0.04	0.23	0.07	-0.13	0.18	0.22	0.11	1.00						
TV11	-0.06	0.17	0.10	0.29	0.10	-0.07	0.19	0.28	0.13	0.53	1.00					
TV12	0.05	0.02	0.16	0.24	-0.18	-0.25	0.01	0.17	0.11	0.10	0.37	1.00				
TV13	-0.06	0.10	0.17	0.03	-0.03	-0.10	0.19	0.00	-0.05	0.32	0.37	0.42	1.00			
TV14	-0.13	0.11	0.12	0.10	0.16	-0.06	0.14	0.24	0.15	0.22	0.44	0.33	0.21	1.00		
TV15	-0.05	0.01	0.10	0.10	0.15	-0.24	0.09	0.00	0.02	0.01	0.01	0.25	0.15	0.19	1.00	
TV16	0.04	-0.24	0.00	0.05	-0.12	-0.01	-0.10	0.10	0.16	0.27	0.04	0.11	0.01	0.02	0.10	1.00

Table 3 . Kruskal-Wallis's test and Anova

	AS	AS	H	p-level	F	p-level
TV1	1.12	1.17	.15	.70	.13	.72
TV2	2.42	2.14	.55	.46	.89	.35
TV3	3.16	3.10	.10	.74	.05	.82
TV4	1.70	1.48	2.67	.10	1.74	.19
TV5	1.70	1.38	1.65	.20	2.69	.10
TV6	2.04	1.71	1.83	.18	2.61	.11
TV7	3.09	3.69	5.49	.02	5.21	.02
TV8	1.98	2.07	.30	.86	.20	.66
TV9	1.28	1.40	.79	.38	1.22	.27
TV10	1.84	1.95	.22	.88	.28	.60
TV11	1.98	2.21	1.35	.25	.94	.33
TV12	2.81	3.02	.83	.36	.76	.39
TV13	3.67	3.52	.66	.42	.58	.45
TV14	2.54	3.07	6.53	.01	5.58	.02
TV15	2.70	2.45	1.07	.30	1.04	.31
TV16	2.49	2.17	2.14	.14	2.42	.12

We noted that the players significantly differ in only two allegations. Hence, the better players have more injuries than the less quality players, which can be explained by the time spent in the court and by situations this players end up in during the game. Furthermore it can be assumed that due to their quality during the game they will be found in more risky situations both in defense and in attack (offense). In addition to this allegation there is an opinion of high quality players that injuries are very common in handball. A statistically significant difference was also noted in positive public perception about handball, where the better players are more restrained and less quality players on average are more convinced of the positive attitude of society towards women's handball. We can say that the less quality players have more "idealistic" image of handball since they probably have not yet met professionalism because of their age and school. Because of living with their parents and above mentioned reasons their financial status is not primary.

It may also be noted that the better players get their medical examination regularly, which can be explained as the care for their health as well as severity in the approach to their profession. We can also notice there is a bigger percent of more quality players who, even after a career, want to stay dedicated to handball. This observation is certainly satisfying, because it is of particular importance that experienced and quality players, after finishing their career, pass their knowledge and experience to younger generations.

## Conclusion

This study conducted on a sample of 99 female handball players of The Premier League indicated that there were no significant differences between the attitudes of quality and less quality players on the questionnaire conducted in this work. Out of 16 allegations the questionnaire included eight is

related to professionalism of practicing handball and eight on the attitudes of the characteristics and status of handball as a sport. In only two allegations statistically significant difference according to quality criteria was noted and it was determined by the average number of goals scored during the season. Based on the results obtained we could say that female handball players have a similar approach to handball regardless of the level of quality they possess, apropos their opinions about characteristics and status of handball as a sport do not vary significantly. In future studies of this type we could explore the differences between the teams of different levels of performance as well as between the players of different positions in this sport. This would help us obtain global picture about attitudes of the female players of certain clubs as well as a total number of female players competing in the League regarding their position in the game.

## References

- Bjelajac, S. (2006). *Sport and society* [Sport and Society]. Split: Faculty of mathematical science.
- Brčić, B., Viskić-Stalec, N., & Jaklinović-Fressl, Ž. (1997). Prediktivna vrijednost varijabli za procjenu tehničko-taktičkih elemenata rukometne igre. *Kineziologija*, 29(1), 55-64.
- Foretić, N., Rogulj, N., & Trninić, M. (2010). The influence of situation-related efficiency on the result of a handball match. *Sport Science* 3(2), 45-51.
- Foretić, N., Rogulj, N., Srhoj, V., Burger, A., & Rajković, K. (2011). Differences in situation efficiency parameters between top men and woman handball teams. In Proceedings book of the 1st EHF scientific conference "Science and analytical expertise in handball", Beč, (pp. 243-247).
- Hianik, J. (2008). The relation between successful game activity and the final match result in handball. 5th International Scientific Conference on Kinesiology. Zagreb. Croatia. (pp. 917-921).
- Luckwü, R.M., & Guzmán, J.F. (2011). Deportividad en balonmano: Un análisis desde la teoría de la autodeterminación. *Revista de Psicología del Deporte*, 20(2), 305-320.
- Milanović, M., & Gabelica-Šupljika, M. (1997). Psihodiagnostika u funkciji procjene psihosocijalnog statusa članova sportske ekipe [Psychodiagnostics in function of assessment psychosocial status of members of sports teams. In Croatian.]. In D. Milanović D and S. Heimer (Eds.), *Proceedings Book "Dijagnostika treniranosti sportaša"* Zagreb, Croatia: Fakultet za fizicku kulturu. (pp. 203-208).
- Ohnjec, K., Vuleta, D., Milanović, D., & Gruić, I. (2008). Performance indicators of teams at the 2003 world handball championship for women in Croatia. *Kinesiology* 40(1), 69-79.
- Rogulj, N. (2000). Differences in situation-related indicators of handball game in relation to the achieved competitive results of the teams at 1999 World Championship in Egypt. *Kinesiology*, 32(2), 63-74.
- Rogulj, N. (2003). *Taktički modeli igre u rukometu* [Tactical play models in handball. In Croatian.]. /Dissertation/, Zagreb: Kineziološki fakultet.
- Rogulj, N., Nazor, M., Srhoj, V., & Božin, D. (2006). Differences between competitively efficient and less efficient junior handball players according to their personality traits. *Kinesiology*, 38(2), 158-163.
- Rogulj, N., & Foretić, N. (2007). *Škola rukometa* [Handball school. In Croatian.]. Split: Sveučilište u Splitu.
- Rogulj, N., Foretić, N., & Burger, A. (2011). Differences in the course of result between the winning and losing teams in top handball. *Homosporticus*, 13(1), 28-32.
- Sindik, J., & Mihaljević, D. (2011). Socioekonomski status i mikrosocijalna struktura unutar ženskog rukometnog kluba. *Sportlogia*, 7(2): 151-162.
- Sporiš, G., Vuleta, D., Vuleta, D.Jr, & Milanović, D. (2010). Fitness Profiling in Handball: Physical and Physiological Characteristics of Elite Players. *Coll. Antropol.* 34(2), 1009-1014.
- Srhoj, V., Rogulj, N., Padovan, M., & Katić, R. (2001). Influence of the attack end conduction on match result in handball. *Collegium antropologicum*, 25(2), 611-617.
- Taborsky, F. (2008). *Cumulative indicators of team playing performance in handball* (Olympic Games Tournaments 2008). EHF Periodical.
- Vuleta, D., Milanović, D., & Sertić, H. (2003). Povezanost varijabli šutiranja na gol s konačnim rezultatom rukometnih utakmica Europskog prvenstva 2000. godine za muškarce. *Kinesiology*, 35(2), 168-183.
- Vuleta, D., Milanović, D., et al. (2004). *Rukomet-znanstvena istraživanja* [Handball-scientific researches. In Croatian.]. Zagreb: Kineziološki fakultet.
- Žugić, Z. (2000). *Sociologija sporta* [Sociology of sport. In Croatian.]. Zagreb: Fakultet za fizičku kulturu.

## STAVOVI RUKOMETAŠICA RAZLIČITE KVALITETE O PROFESIONALIZMU I STATUSU RUKOMETA

### Sažetak

Svrha ovog istraživanja je bila utvrđivanje razlika u stavovima rukometašica o motiviranosti, angažiranosti, posvećenosti i ostvarenim postignućima u rukometu, odnosno profesionalnosti bavljenja rukometom, i stavovima o karakteristikama i statusu rukometa kao sporta, između rukometašica različite razine rezultatske uspješnosti. Istraživanje je provedeno na uzorku od 99 rukometašica koje nastupaju u Premier ligi Bosne i Hercegovine. Korelacijska analiza pokazala je da uglavnom ne postoje značajne povezanosti između tvrdnji koje se nalaze u primijenjenom upitniku. Kruskal-Wallisovim testom u samo dvije tvrdnje zabilježena je statistički značajna razlika na osnovu kriterija kvalitete koja je određena prosjekom broja postignutih golova tijekom sezone. Na osnovu dobivenih rezultata može se reći da rukometašice imaju sličan pristup rukometu neovisno o razini kvalitete koju posjeduju, odnosno da se značajnije ne razlikuju njihovi stavovi o karakteristikama i statusu rukometa kao sporta.

**Ključne riječi:** upitnik, rezultatska uspješnost, natjecanje, motiviranost, korelacija

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Received: September 22, 2012

Accepted: December 20, 2012

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