

PSYCHOLOGICAL CHARACTERISTICS FACTOR OF SUCCESS IN KARATE ATHLETES

KOSTOVSKI ŽARKO¹, ALEKSOVSKA V LENCE¹ & IBER ALAJ²

¹Faculty of Physical Education Sport and Health - Skopje, North Macedonia

²European University KALLOS, Faculty of Health Science, Tuzla, - PhD studies, Bosnia and Herzegovina

Correspondence:

Prof. dr Žarko Kostovski

Faculty for Physical Education Sport and Health

University "St. Cyril and Methodius", Skopje, Macedonia

e-mail: zarkok@ukim.edu.mk

Abstract: A survey was conducted with two sub-samples of respondents, karate athletes representatives (members of the national team) and karate athletes competitors in the kumite (sports fight). The survey was conducted on a stratified sample of 32 respondents divided into two groups, 16 karate representatives and 16 karate competitors, males, seniors from the Republic of Macedonia. The main purpose of the research is to determine the differences in the psychological characteristics between the two sub-samples of the respondents. In the research, a total of 13 variables for the assessment of psychological characteristics were applied: for estimation of emotional characteristics six (6) variables, three (3) variables for assessment of the motivational dispositions, for assessment of the specific intellectual characteristics (3) three variables and one variable for assessing the general intellectual characteristic. The basic statistical parameters are determined using the basic descriptive statistics for the two groups of respondents separately, while for determining the differences in the arithmetic means of the psychological characteristics, a T-test for small independent samples was applied. From the analysis of the data from the basic descriptive statistical parameters, it was established that in all applied variables, homogeneity of the results as well as normal distribution was obtained, with very small deviations present in two variables. The results of the T - test obtained in the survey show statistically significant differences in the entire analyzed space between the two groups, with the exception of two variables (L - social desire and P - psychoticism), i.e. differences were found in 11 variables from a total of 13 examined variables.

Keywords: psychological characteristics, karate competitors, karate representatives, descriptive statistics, T-test.

INTRODUCTION

Modern researches in sports science, which include sport psychology, are directed into the determination of the general and common disposition of athletes' personalities that appear in sports in general or in certain sports disciplines and cause athletes to behave in the same or similar manner (Aleksavska-Velichkovska, L. and Kostovski, Z. 2008). It is not disputed that the results obtained from a number of surveys reflect the fact that it is not possible to identify a single general model of a successful athlete, implicitly expected by researchers (Singer et al., 1977; Vealey, 1994, Wann, 1997). The value of researches of this kind in the field of karate sports consists in finding and determining the differences according to which the competitors are separated from the representatives and which are important for achieving the top results. In order to achieve the desired goal, as many information as possible is required, which will be properly incorporated and used in the process of building the personality of the karate athlete. Determining the differences between the examined groups that relate to the situational motor stereotypes (situational karate tests) it is also important in karate sports, since modern karate competitions consist of two individually important karate disciplines kumite and kata. Due to the fact that they are based on different selections of motion techniques, their kinematic and kinetic parameters, they differ in their anthropometric and physical performance. Kumite competitors are characterized by the complex technical structure and specific competences of competitors in the area of combined attack techniques (Chaabène, H., et al. 2014).

METHODS OF WORK

For the needs of the research, a total of 13 variables were used to assess the psychological characteristics of karate athletes divided into 4 spaces, of which: three variables for assessing the motivational dispositions - P2, F +,

F2, Motive for Sports Achievement (MSP), six variables for assessment of the emotional characteristics - anxiety (TAI), aggressiveness (T-15), extroversion / introversion, neuroticism, psychoticism, social desire (EPQ), three variables for assessing specific intellectual abilities - F1, F2, S1 and one variable for assessing the general intellectual ability - IQ Test.

The sample of variables was conducted on a deliberate sample of 32 respondents, divided into two sub-samples, of which 16 karate competitors and 16 karate representatives, males, seniors from Republic of Macedonia. The research was conducted in the club premises in which athletes perform their training on a daily basis.

According to the characteristics and size of the selected sample, the data obtained from the survey were processed by adequate statistical methods. For the purpose of the research, the following were calculated: arithmetic mean-Mean, standard deviation-SD, minimum-Min and maximum - max result, Skew - symmetry of the distribution of the results, Kurt - homogeneity of the results in a certain variable, KS - Kolmogorov - Smirnov method which determines the normal distribution of the results and the T-test for small independent samples for analyzing the differences between the arithmetic means of the two groups of respondents.

RESULTS AND DISCUSSION

Analyzing the data from the basic descriptive statistical parameters of the psychological variables among the competitors presented in Table 1, we conclude that the standard deviation in all examined variables is of normal values, i.e., they are less than 1/3 of the arithmetic means. The lower and upper limits of the range in which the results are moving (Min. - Max.) are expected in relation to the treated variables. Statistically significant deviation of the asymmetry of Skew results is evident only in two variables: progressive matrices (PM = 1.20) and perceptual structure conservation speed (F2 = 1.39), while in the test (S1 = 1.01) which it measures the ability to predict spatial relations, a value is obtained above the upper limit. In the remaining variables, the displayed results are within the limits of the recommended values. By analyzing the values of the degree of curvature of the Gaussian curve, we conclude that most of the applied variables are distributed along the width of the horizontal axis. The normal distribution of the results obtained by the Kolmogorov-Smirnov method shows that there is no deviation in any of the psychological variables.

Table 1. Descriptive statistical parameters of the psychological characteristics of the respondents - competitors and representatives

	COMPETITORS								REPRESENTATIVES								
	M	Std. Dev	Min.	Max.	Skew.	Kurt.	K-S	Sig	M	Std. Dev.	Min.	Max.	Skew.	Kurt.	K-S	Sig	
PM	51.56	1.75	50.00	56.00	1.20	1.26	0.76	0.62	PM	55.13	2.45	51.00	59.00	-0.04	-1.07	0.52	0.95
F1	28.81	2.23	25.00	33.00	0.06	-0.48	0.63	0.82	F1	31.94	1.65	30.00	34.00	0.21	-1.69	0.86	0.45
F2	17.00	1.93	15.00	22.00	1.39	1.84	1.00	0.27	F2	20.56	1.93	17.00	24.00	0.27	-0.59	0.96	0.32
S1	20.94	2.11	18.00	26.00	1.01	0.80	0.95	0.32	S1	26.63	1.82	24.00	29.00	0.11	-1.44	0.79	0.57
TAI	35.75	3.40	30.00	41.00	-0.39	-0.81	0.57	0.90	TAI	30.31	2.44	27.00	35.00	0.53	0.08	0.56	0.92
P	2.75	0.86	1.00	4.00	-0.18	-0.32	0.96	0.32	P	2.31	0.87	1.00	4.00	-0.02	-0.55	0.89	0.41
N	11.31	2.24	7.00	16.00	0.08	0.38	0.62	0.84	N	9.25	2.54	4.00	14.00	-0.46	0.42	0.84	0.48
E	11.00	2.13	7.00	15.00	0.05	-0.18	0.53	0.94	E	13.06	1.91	10.00	16.00	-0.23	-1.13	0.63	0.83
L	11.56	2.50	7.00	15.00	-0.30	-1.03	0.62	0.84	L	11.13	2.25	6.00	14.00	-0.74	0.15	0.86	0.46
P2	20.56	2.31	17.00	25.00	0.35	-0.74	0.75	0.62	P2	23.13	1.36	21.00	25.00	-0.07	-1.19	0.71	0.69
F+	3.94	1.29	2.00	6.00	0.34	-0.58	0.92	0.36	F+	3.00	1.10	1.00	5.00	0.00	-0.80	0.78	0.58
F-	7.13	1.20	5.00	9.00	0.25	-0.63	0.92	0.37	F-	8.63	1.15	7.00	11.00	0.56	-0.40	1.08	0.20
T-15	32.81	4.52	26.00	40.00	0.11	-1.25	0.54	0.93	T-15	27.63	4.27	21.00	38.00	0.94	1.15	0.73	0.66

This table also presents the basic descriptive statistical parameters of the psychological variables among the representatives. It can be noted that in all applied variables homogeneity of results as well as normal distribution (K-S) were obtained without departing from any of the psychological variables. The values of the standard deviation (Std. Dev), in the variables psychoticism (P = 0.87) and the variable (F + = 1.10) that examines the degree of positive emotional engagement and emotional self-control in situations of sports achievement, show very little deviation, while

the remaining results of the values of the standard deviation are one third in relation to the arithmetic means, which indicates that the grouping of the results moves mainly around its own arithmetic means. The displayed values of the minimum and maximum results move within the expected range in terms of the treated variables. A statistically significant deviation of the asymmetry of the Skew results was not noticed in any of the variables whose values generally range around zero, which tells us that this is a normal distribution of data. The degree of curvature of the Gaussian curve (Kurt.) is platy curtic, indicating that the distribution of the results is dispersing along the x axis.

From the analysis of the obtained results from the variables of the psychological characteristics of the respondents - competitors and representatives presented in the table no. 2, statistically significant differences were found in the entire analyzed space between the two groups, with the exception of two variables (L - social desire and P - psychoticism). The value of the standard deviation (Std.Dev) in the variable psychoticism ($p = 0.87$) shows very little deviation, while the remaining results of the values of the standard deviation are one third in relation to the arithmetic means. The levels of two-sided significance Sig. (2-tailed) are in the range from 0.00 to 0.03 indicating that the difference between these two groups, competitors and representatives is due precisely to the level of psychological preparedness that is considered relevant in achieving success. The values of the t-tests in the variables are greater than 1.96 at the level of .05.

Table 2. T-tests of the psychological characteristics of the respondents -competitors and representatives

Variables	Groups	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
PM	1.00	16	51.56	1.75	-4.74	30.00	0.00
	2.00	16	55.13	2.45			
F1	1.00	16	28.81	2.23	-4.51	30.00	0.00
	2.00	16	31.94	1.65			
F2	1.00	16	17.00	1.93	-5.22	30.00	0.00
	2.00	16	20.56	1.93			
S1	1.00	16	20.94	2.11	-8.16	30.00	0.00
	2.00	16	26.63	1.82			
TAI	1.00	16	35.75	3.40	5.20	30.00	0.00
	2.00	16	30.31	2.44			
P	1.00	16	2.75	0.86	1.43	30.00	0.16
	2.00	16	2.31	0.87			
N	1.00	16	11.31	2.24	2.43	30.00	0.02
	2.00	16	9.25	2.54			
E	1.00	16	11.00	2.13	-2.88	30.00	0.01
	2.00	16	13.06	1.91			
L	1.00	16	11.56	2.50	0.52	30.00	0.61
	2.00	16	11.13	2.25			
P2	1.00	16	20.56	2.31	-3.83	30.00	0.00
	2.00	16	23.13	1.36			
F+	1.00	16	3.94	1.29	2.22	30.00	0.03
	2.00	16	3.00	1.10			
F-	1.00	16	7.13	1.20	-3.61	30.00	0.00
	2.00	16	8.63	1.15			
T15	1.00	16	32.81	4.52	3.34	30.00	0.00
	2.00	16	27.63	4.27			

Statistically significant differences that occur in variables that present the psychological characteristics and are in favor of the representatives represent a very good indicator of the existence of a specific psychological structure relevant to achieving sports success and according to which the competitors from the representatives are separated. In this case, the higher score in psychoticism (P) in the group of respondents-competitors is a good result compared

to the representatives who show greater self-confidence and have a lower level of psychoticism. Not having a statistically significant difference in variable L (social desire) is linked to the attempts of the subjects to deliberately control their results, desire, and attempts to suppress or express certain emotional manifestations.

CONCLUSION

The survey was conducted on a deliberate sample of 32 respondents, 16 karate representatives and 16 karate competitors, males, seniors (according to WKF) from Republic of Macedonia. For the realization of this research, a total of 13 variables were used to assess the psychological characteristics of karate athletes. The research yields results that lead to the following conclusions:

According to the data obtained by testing the two-way t-test for small independent samples of the comparative arithmetic means of the variables representing the psychological characteristics of the respondents - competitors and representatives, statistically significantly differ in the entire analyzed space with the exception of two variables:

- L - social desire ($p = 0.61$)

- P - psychoticism ($p = 0.16$)

There are statistically significant differences in the general intellectual abilities between the respondents - competitors and representatives who are in favor of the representatives.

There are statistically significant differences in the specific intellectual abilities (sports intelligence) between the respondents - competitors and representatives who are in favor of the representatives. Statistically significant differences that occur in the variables presenting the psychological characteristics, and are in favor of the representatives, represent a very good indicator of the existence of a specific psychological structure, relevant for achieving sports success, and according to which the competitors from the representatives are separated. The general and specific intellectual abilities, in fact, are those that separate top athletes from the average. Intelligence mostly develops with movement and creative activity. One of the aspects of the problem of many studies of cognitive abilities is the determination of the cognitive characteristics of sports figures. In that sense, it can be said that as in this research and in many others, the same or similar results were obtained, according to which top athletes possess much more developed cognitive functions than others (Holjevac, 1975; Gabrijelic, 1977; Bosnar & Horga, 1981; Bosnar & Shnajder 1983, etc.), taken by Mikic (1996). The connection between the level of cognitive development and success in sports has been proven by numerous studies involving our own. The correlation of motor and cognitive abilities is relatively high, as is shown by the results of multivariate researches (Brace 1948, Kirkendall & Gruber 1970, Mejovsek 1977, Ismail, Kane & Kirkendall 1976, Momirovic, Gredelj & Hosek 1980, Momirovic & Horga 1982, etc.).

There are statistically significant differences in the emotional characteristics of the respondents - competitors and representatives. In this case, the resulting lower score among the respondents - representatives, in the variable anxiety, aggressiveness, psychoticism and neuroticism (compared to the respondents-competitors), is a good indicator and they show greater self-confidence, suppression of negative, and expression of positive emotional manifestations. Anxiety connects to genetics and is one of the most important limiting factors for competitive efficiency and it is very difficult to be influenced Mikic (1996). According to Cox (1998), aggression is also considered as an obstacle to athletes, which consequence is reduced achievement.

There are statistically significant differences in the motivational dispositions between the respondents - competitors and representatives. The statistically significant differences that appear in the variables that represent the motivational dispositions are in favor of the representatives, represent a very good indicator of the existence of a specific psychological structure, relevant for achieving sports success, and according to which the competitors from the representatives are separated. It can be said that the concept of the need for achievement is most relevant and therefore a large number of researchers are dealing exactly with the motive of sports achievement. These obtained results can be compared with other studies (Havelka & Lazarevic 1980), where similar results have been obtained; according to which emotional processes that come to the fore in a situation of sports achievement have a great influence on the level of success. The data from the survey on the success of emotional engagement, self-control and emotional stability in situations of sports achievement shows that there is a significant difference between the examined samples. Compared to the research performed by Jovanovic (Jovanovic, 1986), also with karate competitors (most successful, intermediate successful and least successful), results were obtained where the most successful ones differ from the other two groups for better emotional stability and self-control in conditions of competition.

REFERENCES

- Алексовска, В., Л. (2002). Утврдување и разлики во психолошката структура на личноста кај спортисти од различни спортски дисциплини и неспортисти во Р. Македонија. Докторска дисертација, Факултет за физичка култура, Скопје
- Aleksovska, V., L., Kostovski, Ž. (2008). Faktorska struktura psiholoskog prostora kod sportasa - karatista u Makedoniji. Acta Kinesiologica 2, 1:42-46
- Cox, H. R. (1998). Psihologija sport, konceptiiprimjene. Naclada Slap - Zagreb
- Chaabène, H., Franchini, E., Miarka, B., Amin, S. M., Mkaouer, B., Chamari, K. (2014). Time–motion analysis and physiological responses to karate official combat sessions: is there a difference between winners and defeated karatekas, Volume: 9 Issue: 2 Pages: 302-308 Human Kinetics Journals
- Havelka, N., Lazarevic, Lj. (1980). Sport i licnost. Sportska knjiga, Beograd
- Kostovski, Ž., Mikic, B., Georgiev, G., Djuknovic, N., Ahmeti, V., Masic, Z. (2013). Antropological dimensions as predictors of a competition efficiency in elite karate athletes. Technics technologies education management - TTEM, 8 (3), Impact factor: 0.414
- Mikic, B. (1996). Psihologija sporta. Print.com - Tuzla
- Peric, D. (2001). Statistics used in sports and physical education [Statistika primenjena u sportu i fizickom vaspitanju]. Beograd. Ideaprint
- Jovanović, S. (1986) Rezultatiispitivanjamotivacijepostignućakod karate takmičara. Fizičkakultura, 4, Beograd, 187-193
- Singer, R.N., Harris, D., Kroll, W., Martens, R., Sechrest, L. (1977) Psychological testing of athletes. Journal of Physical Education Rec, 48, 30-32.
- Vanek, M., Hošek, V., & Svoboda, B. (1974) Studie osobnosti ve sportu (in Cheskoslovakian). Praha: Univerzita Karlova Praha.
- Vanek, M., & Krati, B. (1974) Psihologija i vrhunski sport (in Serbian), Beograd: NIP Partizan.
- Vealey, R.S. (1994) Current status and prominent issues in sport psychology interventions. Medicine and Science in Sports and Exercise 26 (4): 495-502.

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