THE INFLUENCE OF MOTOR ABILITIES AND MORPHOLOGICAL CHARACTERISTICS ON THE PERFORMANCE OF SPORTS DANCERS

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Abstract

The purpose of the study was to examine, which morphological characteristics and motor abilities influence the success in sports dance. Testing battery, consisting of 13 morphological and 11 motor tests, was used on a sample of 12 female and 13 male dancers. Measured subjects were members of the national ballroom or acrobatic rock'n'roll dance teams, aged 14 to 23 years. Results of regression analysis showed that in female dancers the chosen model explained 77.8% of competitive success variance (F = 8.13, p <0.002). Statistical significance in success prediction has been in female dancers revealed for variables percentage of fat (ß = 0.586, p <0.004), standing long jump (ß = -0.464, p <0012) and Olympic circles test (ß = 0.408, p <0.025). In male dancers, the chosen model explained 52.3% of competitive success variance (F = 6.13, p <0.005) with standing long jump (ß = 0,753, p <0.005) being the only statistically significant variable in prediction of success. It can be concluded that the power strength of legs, coordination of movement and smaller amount of fat tissue have the largest influence on success in sports dance performance.

***Key words**: sports dance, rock'n'roll, competitive success, test, regression analysis*

Introduction

Sports dance is a discipline combining the artistic and sports component. A large emphasis of the sport is on energetic and information components as well as aesthetics of the movement. Basic motor abilities and morphological characteristics form the foundation of special motor abilities in dance movement structures, which dancers present in their choreographies. Individual choreography has to display different dynamics of movement, control of body movement in space and at the same time the expression or non-verbal body communication in harmony with the dance partner.

Consequently, dancers are required to possess an exceptional flexibility of various body joints in addition to dynamic and static mobility of muscles. Furthermore, dancing technique necessitates a high level of coordination in legs and arms. Dancing in couples includes many free support positions of female dancers as well as positions on one foot, rotations and swinging, which in addition to high degree of balance also require appropriate physical strength in male dancers. As a result, the present study focuses on dancers and their biological - morphological context and motor space. Due to the movement patterns, dancing requires good basic motor abilities, specific morphological disposition and appropriate body weight in order to control the body of dancers in complex motor tasks and dance choreography sequences. According to other surveys, which were carried out for various dance disciplines, it can be seen that folk dancers (Srhoj, 2002) require high control in a variety of motor skills, especially in rhythmic coordination of movements, balance, agility of feet on the dance floor and repetitive strength of torso (core stabilisation). In addition, Srhoj, Katić and Kaliterna (2006) found that regardless of the dance genre, general motor abilities of dancers are based primarily on power strength, coordination and frequency of movements, which is expected due to the choreographic structure of movement patterns. Similarly, a study by Uzunović and Kostić (2005) on a sample of Latin American dancers has found that speed, coordination and flexibility have statistically significant impact on competitive success of dancers. As statistically significant predictors were revealed in female dancers test *hand drumming* and flexibility test *frontal splits* and in male dancers test *foot drumming*. A study by Kostić, Zagorc and Uzunović (2004) has on a sample of Latin American female dancers found a large statistically significant association with skin folds. Dancing in couples involves constant physical contact with the partner; therefore, it is extremely important for a female partner to have low fat percentage due to constant transfer of weight during the dance.

Čoh, Jovanović-Golubović and Bratić (2004) stated that coordination is an extremely important motor skill and that the information component of the movement is dominant. Appropriate level of motor coordination in dancers will provide possibility for better realisation of energy component as well as faster adoption and improvement of new motor structures. As all movements in dance occur to the musical accompaniment and due to different rhythmical structure of each dance and dynamics of movement, it could be said that success in dance depends on motor learning ability, whole body coordination and rhythm.

The purpose of present research was to examine, which morphological characteristics and motor abilities influence the success in sports dance; furthermore, to explain a proportion of total variance for each predictor variable of success.

Methods

Sample of measured subjects

Sample of measured subjects included 25 sports dancers (Latin American, standard and rock 'n roll); 13 were male (average height 177.83±6.71cm, average weight 67.64±10.99kg, average age 18.92±3.79years) and 12 female (average height 164.57±5.88cm, average weight 53.38±7.71kg, average age 18.42±4.31years). Chosen subjects were all members of national teams in either junior or senior class, the finalists of the national championships and several of them also finalists in the World Championships and other important international competitions. All were members of six Slovenian dance clubs. Measurements were carried out in June 2013 at the end of the third - last competition period. None of the subjects was injured during the time of measurement. The subjects were familiar with the process and potential risks as they signed an informed consent.

Sample of variables

The test battery consisted of selected parameters of anthropometric dimensions and motor tests. Predictor variables set was made of the following anthropometric variables: height (HEIGHT), weight (WEIGHT), various skin folds: triceps skin fold (SFTRIC), back skin fold (SFBACK), supraspinal skin fold (SFSUSPI) suprailiac skin fold (SFSUILI), abdominal skin fold (SFABD), thigh skin fold (SFTHI), dorsal thigh skin fold (SFTHDOR) and thoracic skin fold (SFTHOR). Measurements of anthropometric dimensions were performed with standard EUROFIT* (1983) protocol. The percentage of fat (%FAT) and the percentage of water (%WATER) were calculated from the body weight, body height and age of every individual, read on the scale CORONA Haushalttswaren, GmbH & Co. KG. 35,428 KG, Laggons (d = 100g; max = 150kg; BFA = 0.1%; BWC = 0.1%).

Motor tests were divided into two groups. The first group included tests for the speed of movement in legs and arms, explosive power, flexibility and balance. Some standard tests were used:

- *Standing long jump* (JUMP) – motor test of explosive power. Subject was standing still on the carpet and from this position attempted to jump as far as possible. Jump had to be performed from both legs simultaneously, arm swings were allowed. Result was measured in centimetres. Each test was carried out twice, better result was recorded;
- *Foot drumming* (LEGDRUM). Subject was seated on a chair with a T-shaped wooden board placed on the floor under the feet. Left (right) leg was placed flat on the ground next to the wooden structure; the right (left) leg was placed on the board on the left (right) side of the barrier. On the sign, a subject begun rapidly striking the board alternately on the right and left (left and right) side of the barrier with the right (left) foot. Task lasted 15 seconds and the number of correct repetitions was recorded;
- *Mixed drumming* (MIXDRUM). Subject was seated approximately 20-30 centimetres away from the table. Four squares (20 cm x 20 cm) were drawn on the table and numbered from 1 to 4. The same pattern of squares numbered from 5 to 8 was placed on the floor under the table. Subject tried to alternately hit the squares in the correct order, written in the squares on the table (numbers 1 to 4) and floor (numbers 5 to 8). Result was correct number of hits in 20 seconds, test was performed twice;
- *Frontal splits* (FSPLIT). Subject was standing against the wall and then lowered himself by widening the gap between the straight legs. The result was measured as the distance from the ground up to his crotch. Test was repeated twice, smaller distance was recorded;
- *Forward fold* (FOLD). Subject was standing on a wooden bench with straight legs, bare feet were placed together and parallel with toes touching the ruler at the edge of bench. Subject folded the body as far forward and down by pushing the sliding ruler down the scale. This position was maintained for at least 2 seconds, result was recorded in centimetres.
- *Hands and feet drumming* (HFDRUM). Measured subject stood in the corner and alternately hit the wall in the following sequence: left foot, right hand, right foot and left hand. The result was the number of hits in a correct sequence in 20 seconds. Test was performed twice and better result was recorded.
- *Balance on a proprioceptive board* (BALANCE). Measured subject stood on a raised balancing board. The result is a time that subject managed to keep the board in a balanced position (without touching the floor). Test was performed twice and better result was recorded.

The second group included tests, which are in their motor structure similar to dance movement. These include following tests:

- *Olympic circles test* (OLIMPC) – test of coordination in rhythm. Five standard rhythmic gymnastics circles were placed on a floor in an Olympic circle pattern. Measured subject stood facing the circles and performed certain rhythmic movement cycles. Number of correct movement sequences in 30 seconds was recorded.
- *Rhythm coordination* (COORD1, COORD2, COORD3) – tests of motor patterns with legs. Measured subject stood behind a line and watched a demonstrator who performed samples of motor tests three times – first in slow motion and twice in normal speed. Subject then performed a sample once on his/her own and the result was recorded as the number of correctly repeated cycles in 30 seconds. Measured subject performed each of these tests, similar to dance motor structures, twice and better result was recorded.

Criterion variable

Criterion variable was represented with an average value of the competitive success for each individual dancer at six best dance competitions at home or abroad in the 2011/2012 season.

Competitions were ranked from 1 to 6 according to their importance:

- 6 points were awarded to dancers who qualified into the final at major international competitions (World and European Championships, Blackpool dance festival, UK Open and International Open);
- 5 points were awarded to dancers who at the major international competitions qualified into semi-finals or qualified into the final at international IDSF or WRCC competitions;
- 4 points were awarded to dancers who were at national championships placed in ranks 1 to 3 or were qualified into semi-finals at international IDSF or WRCC competitions;
- 3 points were awarded to dancers who were at national championships placed in ranks 4 to 7;
- 2 points were awarded to dancers who at national championships qualified into semi-finals or have qualified into the final at Slovenian cup competition;
- 1 point was awarded for all other results.

Data analysis methods

Statistical package SPSS 14.0 was used to analyse the data. Simple descriptive statistics was calculated for all variables. Normality of distribution was tested with Kolmogorov - Smirnov test. Reliability was tested with Cronbach α coefficient. Reliability limit of individual tests was set at $\alpha>0.7$. Criterion for normality of distribution was set at $p>0.05$. Multiple regression analysis (stepwise method) was used to present the influence of independent variables onto criterion variable.

Results

Table 1: Descriptive (simple) statistics for group of MALE DANCERS (M – mean value; SD – standard deviation; KS z – Kolmogorov - Smirnov test; p (KS z) – statistical importance of z-values in Kolmogorov - Smirnov test.

	M	SD	KS z	p (KS z)		M	SD	KS z	p (KS z)	α
HEIGHT	177.83	6.71	.524	.947	JUMP	231.23	24.41	.499	.964	.89
WEIGHT	67.64	10.99	.743	.638	FOLD	54.31	6.04	.620	.836	.97
%FAT	10.17	3.40	.919	.367	FSPLIT	40.31	12.81	.494	.968	.95
%WATER	63.23	3.09	.906	.384	LEGDRUM	29.54	5.30	.632	.819	.92
SFTRIC	7.93	3.30	.576	.894	HFDRUM	11.46	3.57	.785	.568	.87
SFBACK	7.95	2.58	1.00	.271	BALANCE	171.54	63.78	.631	.820	.91
SFSUSPI	10.82	6.00	.936	.344	MIXDRUM	8.23	2.45	.805	.537	.78
SFSUILI	7.03	3.32	.893	.403	COORD1	14.15	8.55	.383	.999	.77
SFABD	9.85	6.36	.999	.271	COORD2	6.15	2.73	.572	.899	.73
SFTHI	12.86	4.93	.642	.805	COORD3	4.69	3.14	.680	.744	.76
SFTHDOR	11.20	4.25	.702	.709	OLIMPC	6.00	1.95	.678	.748	.90
SFTHOR	5.40	1.43	.701	.709	success	4.14	1.01	.504	.962	.81*

*Value represents a coefficient of objectivity for successfulness criterion.

HEIGHT – body height, WEIGHT – body weight, %FAT – percentage of fat, %WATER – percentage of water, SFTRIC – triceps skin fold, SFBACK – back skin fold, SFSUSPI – supraspinal skin fold, SFSUILI – suprailiac skin fold, SFABD – abdominal skin fold, SFTHI – thigh skin fold (ventral), SFTHDOR – thigh skin fold (dorsal), SFTHOR – chest skin fold, JUMP – standing long jump, FOLD – forward fold , FSPLIT – frontal splits, LEGDRUM – foot drumming, HFDRUM – hand and foot drumming, BALANCE – balancing on proprioception plate, MIXDRUM – mixed drumming, COORD1 – test 1 of leg motor patterns, COORD2 – test 2 of leg motor patterns, COORD3 - test 3 of leg motor patterns, OLIMPC – Olympic circles test, success – criterion variable

Table 2: Descriptive statistics for group – FEMALE DANCERS

	M	SD	KS z	P(KS z)		M	SD	KS z	p	α
HEIGHT	164.57	5.88	.665	.768	JUMP	188.50	17.27	.431	.992	.87
WEIGHT	53.38	7.71	.453	.987	FOLD	60.42	5.33	.618	.840	.98
%FAT	19.84	2.68	.836	.487	FSPLIT	24.58	6.41	.880	.421	.97
%WATER	53.51	3.66	.907	.382	LEGDRUM	28.00	4.69	.616	.842	.89
SFTRIC	11.14	3.84	.908	.382	HFDRUM	10.17	2.25	.789	.562	.82
SFBACK	8.10	2.02	.848	.468	BALANCE	145.83	52.84	.628	.826	.92
SFSUSPI	12.46	5.28	.675	.753	MIXDRUM	8.92	2.42	.558	.914	.72
SFSUILI	8.26	4.05	.614	.845	COORD1	19.17	7.90	.548	.925	.79
SFABD	11.02	4.36	.730	.660	COORD2	4.33	2.06	.715	.686	.77
SFTHI	20.50	6.91	.807	.532	COORD3	6.92	1.62	.506	.960	.75
SFTHDOR	18.23	6.99	.715	.687	OLIMPC	6.17	1.74	.634	.816	.83
SFTHOR	5.78	1.52	.743	.640	success	3.70	1.24	.497	.966	.81*

*Value represents a coefficient of objectivity for successfulness criterion.

HEIGHT – body height, WEIGHT – body weight, %FAT – percentage of fat, %WATER – percentage of water, SFTRIC – triceps skin fold, SFBACK – back skin fold, SFSUSPI – supraspinal skin fold, SFSUILI – suprailiac skin fold, SFABD – abdominal skin fold, SFTHI – thigh skin fold (ventral), SFTHDOR – thigh skin fold (dorsal), SFTHOR – chest skin fold, JUMP – standing long jump, FOLD – forward fold , FSPLIT – frontal splits, LEGDRUM – foot drumming, HFDRUM – hand and foot drumming, BALANCE – balancing on proprioception plate, MIXDRUM – mixed drumming, COORD1 – test 1 of leg motor patterns, COORD2 – test 2 of leg motor patterns, COORD3 - test 3 of leg motor patterns, OLIMPC – Olympic circles test, success – criterion variable

Table 3: Multiple regression analysis – calculation of parameters and beta ponders in male dancers. Success is criterion variable.

Predictor	b	SE(b)	β	r (partial)	t	p
1. step	-2.824	1.915			-1.475	.171
Const JUMP	.030	.008	.753	.753	3.614	.005

Table 4: Multiple regression analysis – calculation of multiple correlation coefficient and explained variance of the model in male dancers. Success is criterion variable.

Predictors	R	R^2	Koreg. R^2	ΔR^2	SNN	ΔF	p
JUMP	.753	.566	.523	.566	.6884	13.063	.005

Table 5: Multiple regression analysis – calculation of parameters and beta ponders in female dancers. Success is criterion variable.

Predictor	b	SE(b)	β	r (partial.)	t	p
1. step constant	-2.233	2.230			-1.002	.340
%FAT	.299	.111	.648	.648	2.687	.023
2. step constant	4.394	2.968			1.481	.173
%FAT	.319	.087	.689	.774	3.669	.005
JUMP	-.037	.014	-.517	-.676	-2.751	.022
3. step constant	2.845	2.322			1.225	.255
%FAT	.271	.068	.586	.814	3.970	.004
JUMP	-.033	.010	-.464	-.752	-3.226	.012
OLIMPC	.290	.105	.408	.698	2.760	.025

Table 6: Multiple regression analysis – calculation of multiple correlation coefficient and explained variance of the model in female dancers. Success is criterion variable.

Predictors	R	R^2	cor. R^2	ΔR^2	SNN	ΔF	p
%FAT	.648	.419	.361	.419	.9938	7.221	.023
%FAT & JUMP	.827	.685	.614	.266	.7721	9.764	.006
%FAT, JUMP & OLIMPC	.916	.838	.778	.153	.5862	13.833	.002

Table 1 shows descriptive statistics for the group of male dancers for all measured variables as well as the normality of distribution and reliability. Reliability has been set only for motor tests and criterion variable, as all the other variables were measured only once. All variables were normally distributed (p (KSz)>0.05). Tests COORD2 and COORD3 did not achieve high enough reliability level and as such were excluded from further analysis.

Table 2 shows descriptive statistics for the group of female dancers. Similarly, in this group all the variables were also normally distributed (p (KSz)>0.05). Additionally, in the group of female dancers the tests COORD2 and COORD3 did not achieve sufficiently high reliability and were excluded from further analysis.

Table 3 shows the results of regression analysis. Test standing long jump (JUMP) was revealed as the only statistically important predictor of success. Partial correlation between test JUMP and success was 0.753. Model with one important predictor (JUMP) explains 52.3% of criterion variable – success in male dancers.

In female dancers (Table 5) three variables were revealed as statistically significant success predictors; namely % of fat, standing long jump and Olympic circle test. In contrast with male dancers, test JUMP had a negative partial correlation with success.

Model with three included variables explains 77.8% of success variance. The results reveal those dimensions in motor and morphological space, which are important in the success of dancers. The difference between the genders has been shown in the number of significant predictors of success and the difference in the nature of beta ponder predictor of JUMP in male (positive) and female (negative) dancers.

Discussion

The most important findings in the present study were following: in female dancers, percentage of body fat, standing long jump and the Olympic circles test were revealed as statistically significant predictors of competition success. In male dancers, only the standing long jump has been revealed as statistically significant predictor of competition success.

It is interesting to notice a negative correlation between the standing long jump and success in female dancers, indicating that the power strength of legs in females is a negative predictor of success in dance. Previous studies on sports dancers presented quite inconsistent findings about the influence of standing long jump onto success in dancing. The study by Uzunović, Kostić (2005) has revealed statistically insignificant yet negative correlation between the success and standing long jump test in both male and female dancers. Srhoj, Katić and Kaliterna (2006) have found positive and statistically significant

correlation between the standing long jump test and success in female sports and folk dancers. Discrepancies in the results could be explained with differently selected samples and different criterion variable. Whereas the study by Uzunović, Kostić (2005) includes a sample of active competitors in sports dance with a criterion being the number of points in national ranking, the study by Srhoj, Katić and Kaliterna (2006) includes a sample of students from Faculty of sport with a criterion being an average score for specific dance choreography awarded by five judges. It can be concluded that despite the negative connotation of power strength predictor, which could be a result of a small sample and larger proportion of younger female dancers in present study, this motor ability is nevertheless very important for fast and dynamic motion in dance choreography and movement on dance floor. A study by Miletić and Kostić (2006) has shown that sports dance technique requires constant and consistent development of strength. Similarly important phenomena are also repetitive strength of legs and arms as well as static strength for both female and male dancers. In contrast with females, male dancers lead and manage the movement in space whilst simultaneously providing their partners solid support in execution of various motor structures. Present study indicates that power strength is very important in male dancers and has a positive influence on competition success. Additional research with wider spectrum of power strength tests will be required in order to further develop technical training in sports dance.

Present study has also revealed a statistically significant and positive correlation between the percentage of fat and competition success in female dancers. However, this does not indicate that dancers with higher percentage of body fat are more successful, but rather that the body weight of female dancers should be of higher quality, particularly being more muscular. In contrast, a study by Boreham (1999) has revealed that the tendency in the sample of female dancers is an average body height and below average body weight, which is also linked to the aesthetic component of dance movement and age period of younger dancers. An interesting fact has been shown in the study by Evans, Tiburzi and Norton (1985); namely, that dance has lately become a tool of general exercising programmes – social and modern dances and aerobics are a type of recreation for all age groups. As the aesthetic component in dance is highly expressed and the movements are accompanied with large and long amplitudes, it can be said that excessive body fat has a negative influence on the execution of movement in sports dance. Female sports dancers who compete regularly and train on a daily basis have lower percentage of skin fold in comparison with general population. Koutedakis and Jamurtas (2004) have in their study confirmed positive influence of dance on body weight and stated that the proportion between the lean active body mass and body fat is a building part of optimal body performance in ballet dancers. Sports dancers in their choreographies move the entire body mass quickly and graciously. Their movement is interlinked with numerous jumps, leaps, fast spins, lifts of individual body parts and movement in space with quick changes of direction, all in harmony with the dancing partner. Dahlstrom, Jansson and Nordevang, (1990) have found that the composition of dancers is very important – the smaller the proportion of body fat, the larger the proportion of muscles and consequently the efficiency of dancer's body in execution of complex and demanding coordination movements in choreography. Results in the present study can be attributed to a small sample and the adolescence period of the majority of measured dancers.

Coordination is in sports dance one of the most important motor abilities, thus it is not surprising that in female dancers the Olympic circles test has been revealed as statistically significant predictor of success. This test (OLIMPC) includes jumps and turns. From the nature of choreographies in sports dance and the role of dancers in a couple it can be concluded that female dancers perform larger number of motor structures, which include jumps and two-leg turns, as this is required by the dynamics of choreography. Complex movements in dance mainly necessitate high degree of motor learning, which has specific characteristics and rules that have to be considered in various types of individual's dance motor activity (Čoh, 2004). When studying motor abilities of dancers, Uzunović, Kostić, Zagorc, Oreb and Jocić (2005) have found that the ability of rhythmic interpretation of motor structures, general coordination, the speed of performance of individual motor structures and the ability of perception have the largest influence on success. In addition, Oreb (1992) has in his study emphasised that the success in dance is primarily defined with coordination, rhythm, balance and frequency of alternate movements, whilst less with power strength and endurance, which is highly expressed particularly in male dancers. As there have not been many studies carried out in sports dance, some important findings with implications for sports dance could be derived from studies on other dance disciplines, such as ballet, folk dance, jazz, modern dances, aerobic etc. A study by Ećimović-Žgajner (1984) has shown that dance is one of the mechanisms in kinesiology, which importantly influences the development of motor abilities and motor creativity with music as a part of aesthetic upbringing, accelerating harmonious and beautiful movement. Srhoj, Katić, Kaliterna (2006) have found that coordination is a conglomerate of various integrated movements, which are linked into smooth movement in a sense of execution of movement as a unity. Larger set of various motor structures and wider basis of motor knowledge allow dancers to provide better answer in motor sense. Execution of complex motor structures is strongly correlated with manifestation of all other motor abilities.

This is true particularly for execution of movements with large amplitudes, which are correlated with flexibility and to a large extent also with inter- and intra-muscular coordination. Oreb (1992) has emphasised that the successfulness in dance is primarily defined with coordination, rhythm, balance and frequency of alternate movements and less with power strength and endurance. The degree of abilities, such as coordination, rhythm, spatial and visual discrimination and body control are not so much a result of dance training but are determined genetically or else with an early development of these abilities. Dropčova (1986) has similarly found that dance movement is not solely based on rhythm, but is also to a certain extent influenced with other elements, such as balance, motor learning, agility and strength. Čoh and Kondrič (2004) stated that there is proven correlation between coordination, agility, rhythm, coordinated movement and timing, which is manifested mostly in increased body control in space and time. For this reason, the present study included four new coordination tests, with the intention of extracting as many components of motor space (agility, rhythm, coordinated movement and timing). These tests consisted of motor structures, which form basic motor patterns often used by dancers in their choreographies. Authors define coordination, power strength and the speed of simple movements as some of the most important abilities for general success in dance. In conclusion, it can be said that successful performance in both male and female sports dancers requires good motor learning and consequently highly developed coordination, as the pool of motor information, knowledge, experience and motor programmes is very diverse and varied. Additionally, it has been found that the execution of simple movements is very fast, which can be confirmed with the results of other standardised coordination tests, foot drumming, mixed drumming and hand drumming. Srhoj, Katić and Kaliterna (2006) in their study emphasised the importance of technique, style and tradition, whereas the present study has confirmed a high importance of motor and morphological space as important predictors in sports dance.

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UTJECAJ MOTORIČKIH SPOSOBNOSTI I MORFOLOŠKIH KARAKTERISTIKA NA IZVEDBU SPORTSKIH PLESAČA

Sažetak

Cilj istraživanja bio je ispitati koje morfološke karakteristike i motoričke sposobnosti utječu na uspjeh u sportskom plesu. Baterija za testiranje koja se sastoji od 13 morfoloških i 11 motornih testova, korištena je na uzorku od 12 ženskih i 13 muških plesača. Izmjereni ispitanici bili su pripadnici nacionalne vrste ili akrobatskih rock'n'roll plesnih klubova, uzrasta 14 do 23 godine. Rezultati regresijske analize pokazali su da je kod plesačica Model objasnio 77,8% natjecateljskog uspjeha (F = 8,13, p <0.002). Statistička značajnost u predviđanju uspjeha je u plesačica otkrila varijable postotak masti (SS = 0.586, p <0,004), skok u dalj s mjesta (SS = -0,464, p <0012) i testa Olimpijski krugovi (SS = 0,408, p <0,025). U muških plesača, model je objasnio 52,3% varijance natjecateljskog uspjeha (F = 6,13, p <0,005), uz skok u dalj s mjesta (SS = 0.753, p <0,005) koja se jedina statistički značajna varijabla u predviđanju uspjeha. To se može zaključiti da snaga snaga nogu, koordinacija pokreta i manje količine masnog tkiva imaju najveći utjecaj na uspjeh u izveedbi sportskog plesa.

***Ključne riječi**: sportski ples, rock'n'roll, natjecateljski uspjeh, test, regresijska analiza*

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