The Relationship Between Self-Confidence and Performance of Gymnastic Elements

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Abstract: *The aim of this research was to establish a relation between self-confidence and self-concept, on the one hand, and the performance of the apparatus elements and the floor routine, on the other. The research included 29 subjects, aged 20 to 27, with the average age of the subjects being 21 years old (M= 21.16, SD= 1.54). The following measurement instruments were used: RSES (Rosenberg Self-Esteem Scale) and SC-6, as well as the evaluation of the performance of the floor exercises (side-to-side and front-to-back cartwheel, roundoff, front and back handspring, forward and backward flip) and a vault (squat through on the vault and straddle vault with pre-flight, front handspring on vault, roundoff vault) and with the apparatus: the high bar (uprise on bars with legs together, kip, front mill circle, back circle, underswing dismount) and the parallel bars (swing, forward roll, back roll, shoulder stand, front toss dismount, back toss dismount) by a three-member committee. The results showed that Rosenberg's confidence scale produced statistically significant correlations with all the remaining subscales of moderate or high intensity, and the highest one with the scale of the self-concept (r_s= .73), while the lowest one with the scale related to the performance of gymnastic elements on the apparatus (r_s = .45) (Cohen, 1988 according to Cumming, 2012). In contrast to this scale, the scale of the self-concept is in statistically significant correlation with the gymnastic elements (r_s = .61) on the floor and the vault, while the statistically significant correlation of this scale is missing with the gymnastic elements on the apparatus. It can be concluded that a high level of confidence in one's own abilities through the entire training period enabled a better access to learning, repetition and, finally, the demonstration of the selected gymnastics elements, while the level of general satisfaction was not a decisive factor in the process.*

Key words: *Rosenberg, self-confidence, gymnastics, students.*

Povezanost samopouzdanja i uspješnosti izvođenja gimnastičkih elemenata

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Apstrakt: *Cilj ovog istraživanja bio je da se ustanovi veza između samopouzdanja i self koncepta, s jedne strane i uspješnosti izvođenja gimnastičkih elemenata na spravama i parteru, s druge strane. Istraživanje je obuhvatilo 29 ispitanika muškog pola, uzrasta od 20 do 27 godina, pri čemu prosječna starost ispitanika iznosi 21 godinu (M=21.16, SD=1.54). U istraživanju su korišteni sljedeći mjerni instrumenti: RSES (Rosenberg Self-Esteem Scale) i SC-6, kao i procjena uspješnosti izvođenja gimnastičkih elemenata parteru (premet strance bočno, premet strance čeono, rondat, premet naprijed, premet nazad, salto naprijed i salto nazad) i preskoku (zgrčka i raznoška sa fazom leta, rondat i premet naprijed) te spravama: vratilu (uzmah sunožno, naupor usklopno, kovrtljaj naprijed jašući, kovrtljaj nazad, podmetni saskok) i razboju (njihanje, kolut naprijed, kolut nazad, stav o ramenima, saskok prednjihom, saskok zanjihom) od strane tročlane komisije.Rezultati su pokazali da Rosenbergova skala samopouzdanja ostvaruje statistčki značajne korelacije sa svim preostalim subskalama umjerenog ili visokog intenziteta, a najvišu sa skalom self koncepta (r_s=.73), dok najnižu sa skalom koja se odnosi na izvođenje gimnastičkih elemenata na spravama (r_s =.45) (Cohen, 1988 prema Cumming, 2012). Za razliku od ove skale, skala self koncepta je u statistički značajnoj vezi sa gimnastičkim elementima (r_s =.61) na parteru i preskoku, dok statistički značajna veza ove skale izostaje sa gimnastičkim elementima na spravama. Može se zaključiti da visok stepen vjerovanja u sopstvene sposobnosti kroz čitav period obuke, omogućio je bolji pristup učenju, ponavljanju i na kraju demonstraciji izabranih gimnastičkih elemenata, dok iskazani nivo opšteg zadovoljstva nije imao presudnu ulogu u tom procesu.*

Ključne reči: *Rosenberg, samopouzdanje, gimnastika, studenti.*

Introduction

The motor activity of each individual is a function of complex adaptive mechanisms, which are formed due to the action of stress factors in the environment and they ensure the normal functioning of the vital functions during ontogenesis. Formation of knowledge and skills in sports gymnastics is subject to the influence of similar factors. Self-confidence is a psychological construct that relates to the self-evaluation of the individual's values as a living being (Rosenberg, 1979). This psychological construct, according to Rosenberg's idea, refers to a general assessment, and in this context we can speak of general or non-situational self-confidence. Lately, special theories and models have been developed for various types of situational confidence, as well as the measuring instruments that represent their operationalization (e.g. State Self-Esteem Scale, Heatherton & Polivy, 1991). This psychological construct has been brought into conjunction with the sporting achievement of the university athletes (Gotwals & Dunn, 2003), university swimmers or general sports abilities (Shard & Golby, 2006). In most studies, self-confidence is in a positive correlation with the performance of sporting elements or general sports activities. Similarly, confidence is a psychological construct that is variable and there are indications that a certain psychological program and trainings do not only lead to an increase in self-confidence, but an increase in self-confidence is accompanied by an increase in the performance of certain sport's elements (Shard & Golby, 2006). Self-concept refers to a set of beliefs about ourselves (Čekrlija, 2014). One of the current models of this approach is the Bracken model (Bracken, 1992). This hierarchical multidimensional model of the self-concept proposes that there are six relatively independent domains: physical, competitive, emotional, family, social and academic self-concept, which consists of a superior entity-general self-concept (Bracken, 1996). This model is operationalized by the SC (Self-Concept) scale that has undergone many changes and revisions (Čekrlija & Turjakanin, 2003a; Čekrlija & Turjakanin, 2003; Čekrlija, 2011; Čekrlija & Đurić, 2014) and considering that all versions of this scale are a psychological instrument at a regional level, the research in which the self-concept is linked to other psychological constructs relates predominantly to the sample of respondents from Bosnia and Herzegovina (Čekrlija & Đurić, 2013; Čekrlija & Macher, 2013; Athenstaedt, Čekrlija, & Dušanić, 2013; Čekrlija , 2014). In the literature review, no adequate scientific research work has been found that relates self-concept to success in sports gymnastics or the papers where this concept is examined in a narrower sports context, and

Uvod

Motorička aktivnost svakog pojedinca predstavlja funkciju složenih adaptivnih mehanizama, koji se formiraju usljed djelovanja stresnih faktora sredine i obezbjeđuju normalno odvijanje vitalnih funkcija u toku ontogeneze. Formiranje znanja i vještina u sportskoj gimnastici podložno je uticajima sličnih faktora. Samopouzdanje predstavlja psihološki konstrukt koji se odnosi na samoevaluaciju vrijednosti pojedinca kao živog bića (Rosenberg, 1979). Ovaj psihološki konstrukt, prema zamisli Rosenberga, se odnosi na generalnu procjenu, te u tom kontekstu možemo govoriti o generalnom, odnosno nesituacijskom samopouzdanju. U posljednje vrijeme razvijaju se posebne teorije i modeli koje se odnose na razne vidove situacijskih samopouzdanja, kao i mjerni instrumenti koji predstavljaju operacionalizacije istih (npr. State Self-Esteem Scale, Heatherton & Polivy, 1991). Ovaj psihološki konstrukt je dovođen u vezu sa sportskim postignućem univerzitetskih atletičara (Gotwals & Dunn, 2003), univerzitetskih plivača ili generalno sportskih sposobnosti (Shard & Golby, 2006). U većini istraživanja, samopouzdanje je u pozitivnoj korelaciji sa uspješnosti izvođenja sportskih elemenata ili generalne sportske aktivnosti. Isto tako, samopouzdanje je psihološki konstrukt koji je promjenjiv te postoje indicije da određeni psihološki program i treninzi, ne samo da dovode da porasta samopouzdanja, već da porast samopouzdanja prati i porast uspješnosti izvođenja određenih sportskih elemenata (Shard & Golby, 2006). Self koncept ili samopoimanje se odnosi na skup uvjerenja o nama samima (Čekrlija, 2014). Jedan od aktuelnih modela ovog pristupa jeste i Brackenov model (Bracken, 1992). Ovaj hijerarhijski multidimenzionalni model self koncepta predlaže da postoji šest realtivno nezavisnih domena: fizičko, kompetencijsko, emocionalno, porodično, socijalno i akademsko samopoimanje koji čine viši nadređeni entitet-generalno samopoimanje (Bracken, 1996). Ovaj model je operacionalizovan skalom SC (Self Concept) koja je doživjela mnoga preinačavanja i revizije (Čekrlija & Turjačanin, 2003a; Čekrlija & Turjačanin, 2003; Čekrlija, 2011; Čekrlija & Đurić, 2014) i obzirom da su sve verzije ove skale, psihološki instrument regionalnog nivoa, istraživanja u kojima je self koncept dovođen u vezu sa drugim psihološkim konstruktima se odnose dominantno na uzorak ispitanika iz Bosne i Hercegovine (Čekrlija & Đurić, 2013; Čekrlija & Macher, 2013; Athenstaedt, Čekrlija, & Dušanić, 2013; Čekrlija, 2014). U pregledu literature, nisu pronađeni adekvatni naučno-istraživački radovi koji samopoimanje dovode u relaciju sa uspjehom u sportskoj gimnastici ili radovi gdje je ovaj koncept ispi-

this is one of the reasons why the authors decided to conduct this research.

Methods Of Work

Samples of respondents

The research includes 29 male respondents, aged 20 to 27, with the average age of the respondents being 21 years old (*M*= 21.16, *SD*= 1.54). All respondents are students of the Faculty of Physical Education and Sport, who in the regular teaching process received training in the subject of Sports Gymnastics I and II, which related to the acquisition of the elements on the floor and apparatus. The sample of respondents in this study is smaller for practical reasons, i.e. the difficulties in finding respondents who have some experience with the performance of gymnastic elements and can adequately fulfil the self-confidence assessment questionnaire. The given sample size provides the power (1-β) of .80 to obtain statistically significant results (at the level *p*<.05) if the actual value of the population correlation is .49 (Cumming, 2012), where the authors consider, given the exploratory nature of the study, the size of the sample acceptable.

Sample of the variables

The following measurements were used in the research: RSES (Rosens Self-Esteem Scale) for the assessment of general self-esteem and SC-6 as a questionnaire operationalisation of the self-concept according to the Bracken model, as well as an evaluation of the performance of gymnastic elements on the floor (side-to-side and front-to-back cartwheel, roundoff, front and back handspring, forward and backward flip) and a vault (squat through on the vault and straddle vault with pre-flight, front handspring on vault, roundoff vault) and with the apparatus: the high bar (uprise on bars with legs together, kip, front mill circle, back circle, underswing dismount) and the parallel bars (swing, forward roll, back roll, shoulder stand, front toss dismount, back toss dismount) by a three-member committee. (table 1). RSES (Rosenberg Self-Esteem Scale; Rosenberg, 1965; 1979) represents a questionnaire operationalisation of the general self-confidence. This measuring instrument has a concept of 10 items (examples of the item: "I am able to do things that most people can do.", "I would like to respect myself more") in the form of a five-step Likert-type scale. The higher scores on this instrument relate to more expressed self confidence among the respondents. In previous studies, on large and representative samples, this questionnaire shows very good internal consistency, criterion and structural validity and time sta-

tivan u užem sportskom kontekstu te je to jedan od razloga zašto su se autori odlučili za ovo istraživanje.

Metode rada

Uzorak ispitanika

Istraživanje obuhvata 29 ispitanika muškog pola uzrasta od 20 do 27 godina, pri čemu prosječna starost ispitanika iznosi 21 godinu (*M*=21.16, *SD*=1.54). Svi ispitanici su studenti Fakulteta fizičkog vaspitanja i sporta, koji su u redovnom nastavnom procesu prošli obuku iz predmeta Sportska gimnastika I i II, koji su se odnosili na usvajanje elemenata na parteru i spravama. Uzorak ispitanika u ovom istraživanju je manji iz praktičnih razloga, tj. teškoće u pronalasku ispitanika koji imaju određena iskustva sa izvođenjem gimnastičkih elemenata, a da pri tome mogu adekvatno ispuniti upitnike vezane za procjenu samopouzdanja. Datom veličinom uzorka obezbjeđuje se snaga (1-β) od .80 da se dobiju statistički značajni rezultati (na nivou *p*<.05) ukoliko je stvarna vrijednost populacione korelacije .49 (Cumming, 2012), gde autori smatraju, obzirom na eksplorativnu prirodu studije, veličinu uzorka prihvatljivom.

Uzorak varijabli

U istraživanju su korišteni sljedeći mjerni instrumenti: RSES (Rosenberg Self-Esteem Scale; Rosenberg, 1965) za procjenu generalnog samopouzdanja i SC-6 kao upitnička operacionalizacija self koncepta prema Brackenovom modelu (Bracken, 1992), kao i procjena uspješnosti izvođenja gimnastičkih elemenata na parteru (premet strance bočno, premet strance čeono, rondat, premet naprijed, premet nazad, salto naprijed i salto nazad) i preskoku (zgrčka i raznoška sa fazom leta, rondat i premet naprijed) te spravama: vratilu (uzmah sunožno, naupor usklopno, kovrtljaj naprijed jašući, kovrtljaj nazad, podmetni saskok) i razboju (njihanje, kolut naprijed, kolut nazad, stav o ramenima, saskok prednjihom, saskok zanjihom), procijenjeni od strane tročlane komisije (tabela 1). RSES (Rosenberg Self-Esteem Scale; Rosenberg, 1965; 1979) predstavlja upitničku operacionalizaciju generalnog samopouzdanja. Ovaj mjerni instrument je koncipiran od 10 ajtema (primjeri ajtema: "Sposoban sam da uradim stvari koje može uraditi većina ljudi.", "Volio bih da više poštujem sebe.") u vidu petostepene skale Likertovog tipa. Viši skorovi na ovom instrumentu se odnose na više izraženo samopouzdanje kod ispitanika. U ranijim istraživanjima, na velikim i reprezentativnim uzorcima, ovaj upitnik iskazuje vrlo dobru internu konzistentnost, kriterijumsku i strukturalnu valjanost

bility, as well as the discrimination of the items (Pullmann & Allik, 2000; Gray-Little, Williams, & Hancock, 1997). SC-6 (Čekrlija, 2014) is a questioning tool that measures six primary self-learning domains according to Bracken. This questionnaire is composed of six items (examples of the item: "I am satisfied with my own abilities, skills and successes", "I am satisfied with my own physical appearance, strength and health"), whereby each item responds to one primary domain of the self-concept according to Bracken's understanding, i.e. satisfaction with one of the primary domains of life. The author of this scale proposes the possibility of a one-component solution, i.e. possibility to summarize the individual six domains (items) into one general self-assessment scale (Čekrlija, 2014). Respondents on each item provide a response from 1 to 5 on the Likert-type scale, and the higher score on this scale represents a more positive (satisfied) self-concept of the respondents. In the research, this questionnaire shows satisfactory internal reliability as well as the test-retest reliability, stable factor structure and criterion validity (Čekrlija, Mirković, & Đurić, 2015).

i vremensku stabilnost, kao i diskriminativnost ajtema (Pullmann & Allik, 2000; Gray-Little, Williams, & Hancock, 1997). SC-6 (Čekrlija, 2014) je upitničko sredstvo koje mjeri šest primarnih domena samopoimanja prema Brackenu (1992). Ovaj upitnik je sastavljen od šest ajtema (primjeri ajtema: "Zadovoljan sam vlastitim sposobnostima, vještinama i uspjesima", "Zadovoljan sam vlastitim fizičkim izgledom, snagom i zdravljem"), pri čemu svaki ajtem odgovora po jednom primarnom domenu self kocenpta prema Brackenovom shvatanju, tj. zadovoljstvu jednom od primarnih domena života. Autor ove skale predlaže mogućnost jednokomponentnog rješenja, tj. mogućnost sumiranja pojedinačnih šest domena (stavki) u jednu generalnu skalu samopoimanja (Čekrlija, 2014). Ispitanici na svaku stavku daju odgovor od 1 do 5 na skali Likertovog tipa, a viši skor na ovoj skali predstavlja pozitivnije (zadovoljnije) samopoimanje ispitanika. U istraživanjima ovaj upitnik pokazuje zadovoljavajuću internu pouzdanost kao i test-retest pouzdanost, stabilnu faktorsku strukturu i kriterijumsku valjanost (Čekrlija, Mirković, & Đurić, 2015).

Table 1. *Criterion for grading the performance of the elements*

1	Inadequate	Student is unable to perform the element
2	Adequate	Student performs the element with major technical and aesthetic errors
3	Good	Student performs the element with a medium technical and aesthetic errors
4	Very good	Student performs the element with minor technical and aesthetic errors
5	Excellent	Student performs the element without technical and aesthetic errors

Tabela 1. *Kriterij za ocjenjivanje uspješnosti izvođenja elemenata*

1	Nedovoljno	Student nije u mogućnosti da izvede element
2	Dovoljno	Student izvodi element uz velike tehničke i estetičke greške
3	Dobro	Student izvodi element uz srednje tehničke i estetičke greške
4	Vrlo dobro	Student izvodi element uz manje tehničke i estetičke greške
5	Odlično	Student izvodi element bez tehničkih i estetičkih grešaka

RESULTS AND DISCUSSION

REZULTATI I DISKUSIJA

Table 2. *The results of descriptive statistics and internal consistency coefficients of the used subscale*

Tabela 2. *Rezultati deskriptivne statistike i koeficijenti interne konzistencije korištenih subskala*

Subskala / *Subscale*	N	M	SD	Min	Max	Sk	Ku	α	ω
Rosenberg / *Rosenberg*	10	3.63	.98	1.90	5.00	-.49	-.97	.88	.89
Self koncept / *Self-Concept*	6	3.82	.60	2.83	4.67	-.24	-1.16	.65	.66
Uspješnost 1 / *Performance 1*	11	7.83	1.32	6.00	9.83	.13	-1.30	.98	.98
Uspješnost 2 / *Performance 2*	11	8.01	1.47	6.00	10.00	.01	-1.72	.98	.98

Legend: *N-number of items; M-arithmetic mean; SD- standard deviation; Min- minimum empirical value achieved on a subscale; Max- maximum empirical value achieved on a subscale; Sk- Skewness; Ku- Kurtosis, α- Cronbach alpha coefficient of internal reliability; ω - McDonald total omega coef. of internal reliability. Performance 1- Performance of the elements on the apparatus, Performance 2- Performance of the elements on the floor and the vault.*

Legenda: *N-broj ajtema; M-aritmetička sredina; SD- standardna devijacija; Min- minimalna empirijska vrijednosti ostvarena na subskali; Max- maksimalna empirijska vrijednosti ostvarena na subskali; Sk-skjunis;Ku- kurtosis, α- Cronbach alpha koeficijent interne pouzdanosti; ω - McDonaldtotal omega koef. interne pouzdanosti.Uspješnost 1- izvođenje elemenata na spravama, Uspješnost 2- izvođenje elemenata na parteru i preskoku.*

Based on the results presented in Table 2, it is evident that the respondents on psychological instruments show a tendency towards slightly higher results, while in the performance of the gymnastic elements this tendency is in a very mild opposite direction. Correspondingly, all sub-scales have a satisfactory internal consistency presented through the Cronbach alpha and McDonald total omega coefficient, except for the self-concept subscale, where the values of both coefficients are slightly lower than the conventional limit value .70, probably due to a decrease in the scalar discrimination or a small number of items that make up this scale (McDonald, 1999 according to Dunn, Baguley, & Brunsden, 2014). Subscale performance 1 (performance of the apparatus elements) in this case represents the average value of all 11 gymnastic tasks, and the internal reliability coefficients, which consists of very high values, served as the basis for using instead of the average values on 11 separate tasks, one average value of all them. Furthermore, the justification for treating this subscale in this way is also found in the correlation coefficients between the same and the aforementioned 11 manifest variables, with the range of correlations ranging from $r=$ .81 (uprise) to $r=$ .94 (parallel bars). All correlation coefficients are statistically significant at $p<.001$ level, and the effect of cohesion can be categorized as a high intensity effect (Cohen, 1988 according to Cumming, 2012). The same is true for the subscale performance 2 (the performance of the elements on the floor and the vault), where the identical coefficients of the internal consistency are obtained, as in the previous case, and the correlation coefficients are in the range of $r=$ .88 (side-to-side cartwheel) to $r=$ .95 (straddle pommel jump), where the correlations are significant at the level of $p<.001$. A correlation analysis was performed, where, due to the small sample, Spearman rank correlation coefficient of as a nonparametric alternative to Pearson product-moment correlation coefficient, which on small samples produces unstable results due to the expressed sensitivity to the presence of outliers (Field, 2009).

Na osnovu rezultata predstavljenih u Tabeli 2, evidentno je da ispitanici na psihološkim instrumentima pokazuju tendenciju ka blago višim rezultatima, dok na izvođenju gimnastičkih elemenata ta tendencija je u veoma blagom opozitnom smjeru. Takođe, sve subskale imaju zadovoljavajuću internu konzistentnost predstavljenu kroz Cronbach alpha i McDonaldtotal omega koeficijent, osim subskale self koncept, gdje su vrijednosti oba koeficijenta nešto niže od konvencionalne granične vrijednosti .70, vjerovatno usljed smanjenje diskriminativnosti skale ili malog broja ajtema koje čine ovu skalu (McDonald,1999 prema Dunn, Baguley, & Brunsden, 2014). Subskala uspješnost 1 (izvođenje elemenata na spravama) u ovom slučaju predstavlja prosječnu vrijednost svih 11 gimnastičkih zadataka, a koeficijenti interne pouzdanosti, koji su jako visoke vrijednosti, su poslužili kao osnova da umjesto prosječnih vrijednosti, na 11 zasebnih zadataka, koristimo jednu prosječnu vrijednost svih njih. Takođe, opravdanost ovakvog tretmana ove subskale se nalazi i u koeficijentima korelacije između iste i već pomenutih 11 manifestnih varijabli pri čemu je raspon korelacija od $r=.81$ (uzmah) do $r=.94$ (razboj). Svi koeficijenti korelacije su statistički značajni na nivou $p<.001$, a veličina efekta povezanosti se može kategorisati kao efekat visokog intenziteta (Cohen, 1988 prema Cumming, 2012). Identičan je slučaj i za subskalu uspješnost 2 (izvođenje elemenata na parteru i preskoku), gdje su dobijeni identični koeficijenti interne konzistencije kao u prethodnom slučaju, a koeficijenti korelacije su u rasponu od $r=.88$ (predmet strance bočno) do $r=.95$ (razno škalet), pri čemu su korelacije značajne na nivou $p<.001$. U daljoj analizi izvršena je korelaciona analiza, pri čemu je, zbog malog uzorka, korišten Spearman rang koeficijent korelacije kao neparametrijska alternativa Pearson produkt moment koeficijentu korelacije, koji na malim uzorcima daje nestabilne rezultate usljed izražene senzitivnosti na prisustvo stršećih mjera (Field, 2009).

Table 3. *Results of the correlation analysis*   **Tabela 3.** *Rezultati korelacione analize*

	1	2	3	4
1.Rosenberg / *Rosenberg*		.73**	.45*	.47*
2.Self koncept (SC-6) / *Self-concept*			.26	.61**
3.Uspješnost 1 / *Performance 1*				.05
4.Uspješnost 2 / *Performance 2*				

Legend: ** - p <. 05; ** - p <.01, Performance 1- performing elements on the apparatus, Performance 2- Performing elements on the floor and vault*

Legenda: **- p<.05; **- p<.01, Uspješnost 1- izvođenje elemenata na spravama, Uspješnost 2- izvođenje elemenata na parteru i preskoku*

In the Table 3, the results of the correlations between the subscales used are presented. Rosenberg's self-confidence scale makes statistically significant correlations with all the remaining subscales of moderate or high intensity, and is highest with the self-concept scale ($r_s = .73$), while the lowest with a scale related to the performance of gymnastic elements on the apparatus ($r_s = .45$) (Cohen, 1988 according to Cumming, 2012). In contrast to this scale, the scale of the self-concept is in statistically significant more positive relation to the performance of the gymnastic elements on the floor and the vault ($r_s = .61$), while the statistically significant relation of this scale is absent with the gymnastic elements on the apparatus. Self-confidence, as Rosenberg defined it, implies a general belief in one's own abilities with the previous positive experience of the respondents, regardless of the situational circumstances encountered by the respondents, which leads to a significant correlation with general success, which is substantiated in this paper with the obtained relation and the results with the performance of the gymnastic elements and on the apparatus, floor and vault. These correlations are a positive sign, indicating that greater self-confidence leads to a more successful performance of gymnastic elements on the apparatus, floor and vault.

U Tabeli 3 su predstavljeni rezultati korelacija između korištenih subskala. Rosenbergova skala samopouzdanja ostvaruje statistički značajne korelacije sa svim preostalim subskalama umjerenog ili visokog intenziteta, a najvišu sa skalom self koncepta ($r_s = .73$), dok najnižu sa skalom koja se odnosi na izvođenje gimnastičkih elemenata na spravama ($r_s = .45$) (Cohen, 1988 prema Cumming, 2012). Za razliku od ove skale, skala self koncepta je u statistički značajnoj pozitivnoj vezi sa izvođenjem gimnastičkih elemenata na parteru i preskoku ($r_s = .61$), dok statistički značajna veza ove skale izostaje sa gimnastičkim elementima na spravama. Samopouzdanje, kako ga je definisao Rosenberg (1965), podrazumjeva generalno vjerovanje u sopstvene sposobnosti uz prethodno pozitivno iskustvo ispitanika, bez obzira na situacione okolnosti sa kojima se ispitanici susreću, što dovodi do značajne povezanosti sa generalnom uspješnošću, što je u ovom radu potvrđeno dobijenom povezanošću i rezultatima sa uspješnošću izvođenja gimnastičkih elemenata i na spravama, parteru i preskoku. Navedene korelacije su pozitivnog predznaka, što ukazuje na to da veće samopouzdanje dovodi do uspješnijeg izvođenja gimnastičkih elemenata na spravama, parteru i preskoku.

Table 4. *Results of frequencys at SC-6 scale*

Tabela 4. *Frekvencije rezultata kod SC-6 skale*

	1	2	3	4	5
s1			8	15	6
s2		1	4	3	21
s3			4	15	10
s4		1	5	16	7
s5			2	17	10
s6			8	19	2

The scale of the self-concept (SC-6) contains items that are more relevant to the self-assessment of the experience of satisfaction with certain general segments of life of the respondents, and less implies a specific formulation of the confidence of the respondents in their own abilities (table 4), as confirmed by the obtained results through the existence of statistically significant relation only with the performance of the gymnastic elements on the floor and vault (table 3). One of the elements that probably had an impact on the lack of a relation of the self-concept with the performance of the elements on the apparatus is a somewhat lower degree of reliability of the scale used. The authors further consider that the motor movements on the floor were much easier for the respondents, because the gymnastic elements used were much closer to the natural forms of movement than the selected gymnastic elements on the apparatus, where

Skala self koncepta sadrži ajteme koji se više odnose na samoprocjenu doživljaja zadovoljstva pojedinim generalnim segmentima života ispitanika, a manje podrazumijeva neku konkretnu formulaciju vjerovanja ispitanika u sopstvene sposobnosti, što su potvrdili i dobijeni rezultati analize frekvencija kod skale SC-6 (tabela 4) te kroz postojanje statistički značajne povezanosti samo sa uspješnosti izvođenja gimnastičkih elemenata na parteru i preskoku (tabela 3). Jedan od elemenata koji je vjerovatno imao uticaj na izostanak veze self koncepta sa uspješnošću izvođenja elemenata na spravama, je nešto niži stepen pouzdanosti korištene skale. Dalje autori smatraju da motoričke kretnje na parteru su ispitanicima bile uveliko lakše, jer su korišteni gimnastički elementi puno bliži prirodnim oblicima kretanja, nego što su to izabrani gimnastički elementi na spravama, gdje do izražaja dola-

the technical characteristics of the apparatus, which make up an important factor in the weightlessness performance of the elements (height of the bar, width of the beam, etc.), and hence these results. The authors also consider that when respondents encountered a situation that they were asked for a higher degree of challenge, while performing gymnastic elements on the apparatus, the levels of confidence and satisfaction were potentially under the influence of some other factors that were not the subject of this research, such as fear of height, loss of support, or fear of injury (and others), and that the level of satisfaction obtained may have been compromised by the influence of given elements and thus influenced the results obtained.

CONCLUSION

A high level of confidence in one's own abilities throughout the entire training period enabled better access to learning, repetition, and finally demonstration of selected gymnastic elements. On the other hand, the expressed level of general satisfaction did not play a decisive role in this process. In addition to this statistically significant relation of confidence in one's own capabilities (self-confidence), on this sample of respondents, the authors (Srdić, Jovanović, Mrđa, 2018) point to the significance of other factors on the the performance of gymnastic elements, where one of the factors, which are also significant for performance, is emotional stability, as a personality trait (Radonjić, 2016, according to Srdić, Jovanović, Mrđa, 2018). In addition, there is a space for thinking about possible actions and some other psychological constructs that have a potentially negative impact on the performance of the given elements that were not part of this research (e.g. anxiety). Essentially, the obtained data confirm the complexity of the learning process and the testing of psycho-motor knowledge and abilities, with a great number of psycho-motor factors affecting the performance.

ze i tehničke karakteristike sprava koje čine bitan faktor u težinskom izvođenju elemenata (visina vratila, širina grede i slično), te stoga ovakvi rezultati. Autori smatraju takođe, da kad su ispitanici došli u situaciju da se od njih traži veći stepen izazova, pri izvođenju gimnastičkih elemenata na spravama, nivoi vjerovanja i zadovoljstva su potencijalno bili pod uticajem još nekih faktora koji nisu bili predmet ovog istraživanja, kao što su npr. strah od visine, gubitka podloge ili strah od povrede (i drugi), te je dobijeni nivo zadovoljstva možda bio kompromitovan uticajem datih elemenata i tako uticao na dobijene rezultate.

ZAKLJUČAK

Visok stepen vjerovanja u sopstvene sposobnosti kroz čitav period obuke, omogućio je bolji pristup učenju, ponavljanju i na kraju demonstraciji izabranih gimnastičkih elemenata, dok iskazani nivo opšteg zadovoljstva nije imao presudnu ulogu u tom procesu. Pored navedene statistički značajne veze vjerovanja u sopstvene sposobnosti (samopouzdanja), na ovom uzorku ispitanika, autori (Srdić, Jovanović, Mrđa, 2018) ukazuju na značajnost drugih faktora na samu uspješnost izvođenja gimnastičkih elemenata, gdje je jedan od faktora koji su takođe značajni za uspješnost izvođenja, emocionalna stabilnost, kao crta ličnosti (Radonjić, 2016, prema Srdić, Jovanović, Mrđa, 2018). Pored toga otvara se prostor za razmišljanje o mogućem djelovanju i nekih drugih psiholoških konstrukata koji imaju potencijalno negativan uticaj na uspješnost izvođenja datih elemenata, a koji nisu bili dio ovog istraživanja (npr. anksioznost). Suštinski, dobijeni podaci potvrđuju složenost procesa učenja i testiranja psiho-motoričkih znanja i sposobnosti, pri čemu na uspješnost izvođenja uticaj ima veliki broj psiho-motoričkih faktora.

References

Aluja, A., Rolland, J.P., Garcia, L.F., & Rossier, J. (2007). Dimensionality of the Rosenberg Self-Esteem Scale and Its Relationships With the Three-and the Five-Factor Personality Models. *Journal of Personality Assessment*, *88*(2), 246-249.

Athenstaedt, U., Čekrlija, Đ., & Dušanić, S. (2013). Gender differences in basic personality traits and self-concept primary domains. *Knjiga sažetaka: Savremeni trendovi u psihologiji*, 171-172.

Bracken, A. B. (1992).*Multidimensional self concept scale*. Austin, Texas: Pro-Ed.

Bracken, A. B. (1996). *Handbook of self-concept*. New York, New York: John Wiley & Sons.

Cheng, H., & Furnham, A. (2003). Personality, self-esteem, and demographic predictions of happiness and depression. *Personality and Individual Differences*, *34*, 921–942.

Cole, J.S., & Denzine, G.M. (2004). „I'm not doing as well in this class as i'd like to": Exploring achivment motivation and personality. *Journal of College Reading and Learning*, *34*(2), 29-44.

Čekrlija, Đ. (2011). *Tipološki pristup opisu ličnosti u latentnom prostoru dimenzija alternativnog petofaktorskog modela ličnosti i samopoimanja*. (Doktorska disertacija, Univerzitet u Banjaluci)

Čekrlija, Đ. (2014). Studija o samopoimanju i samom poimanju. Banja Luka, Bosna i Hercegovina: Filozofski fakultet.

Čekrlija, Đ., i Đurić, D. (2013). Personality traits, self-concept and locus of control differences between Austrian and Bosnian students. *Knjiga rezimea: IX dani primenjene psihologije*, *46*.

Čekrlija, Đ., i Đurić, D. (2014). Preliminary psychometric properties of Self-Concept Scale SC-4. *Zbornik sažetaka: Treći Sarajevski Dani Psihologije*, 27-28.

Čekrlija, Đ., i Macher, S. (2013). Locus of control and differences in selfconcept primary domains. *Knjiga sažetaka: Savremeni trendovi u psihologiji*, 170-171

Čekrlija, Đ., i Turjačanin, V. (2003a). Provjera modela hijerarhijske multidimenzionalne strukture self-koncepta. *Radovi*, *6*, 229-264.

Čekrlija, Đ., i Turjačanin, V. (2003b). Struktura primarnih domena i formiranje skale za mjerenje self-koncepta u poliemocionalnom format. *Rad predstavljen na naučnom skupu interdisciplinarni pristup nauci*, Banja Luka, Bosna i Hercegovina.

Čerklija, Đ., Mirković, B., & Đurić, D. (2015).Šest stavki za šest primarnih domena: Kratka skala multidimenzionalnog hijerarhijskog modela samopoimanja.*Zbornik radova: IV Kongres psihologa BiH*, 161-178.

Cumming, G. (2012). *Understanding the new statistics: Effect sizes, confidence intervals and meta-analysis*. New York, New York: Taylor and Francis Group.

Field, A. (2009). *Discovering statistics using SPSS*. London, Uniterd Kingdom: SAGE Publications.

Gotwals, J.K., Dunn, J., & Wayment, H. (2003). An examination of perfectionism and self-esteem in intercollegiate athletes. *Journal of Sport Behavior*, *26*(1), 17-39.

Heatherton, T.F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, *60*, 895-910.

James, W. (1890). *Principles of psychology*. New York, New York: Holt.

Rosenberg, M. (1965). *Society and adolescent child*. Princeton, New Jersey: Princeton University Press.

Rosenberg, M. (1979). *Conceiving the self*. New York, New York: Basic Books.

Sadaat, M., Ghasemzadeh, A., Karami, S., & Soleimani, M. (2012). Relationship between self-esteem and locus of control in Iranian University students. *Procedia-Social and Behavioral Sciences*, *31*, 530-535.

Shavelson, R. J., Hubner, J. J., Stanton, G. C. (1976). Validation of construct interpretations.*Review of Educational Research*, *46*, 407- 441.

Sheard, M., & Golby, J. (2006). Effect of a psychological skills training program on swimming performance and positive psychological development. *International Journal of Sport and Exercise Psychology*, *4*(2), 149-169.

Srdić, S., Jovanović, S. & Mrđa, P. (2018). Povezanost osobina ličnosti modela Velikih pet i motiva postignuća sa uspješnošću izvođenja gimnastičkih elemenata na spravama. Časopis za prirodne i društvene nauke Svarog, 17, 175-186.