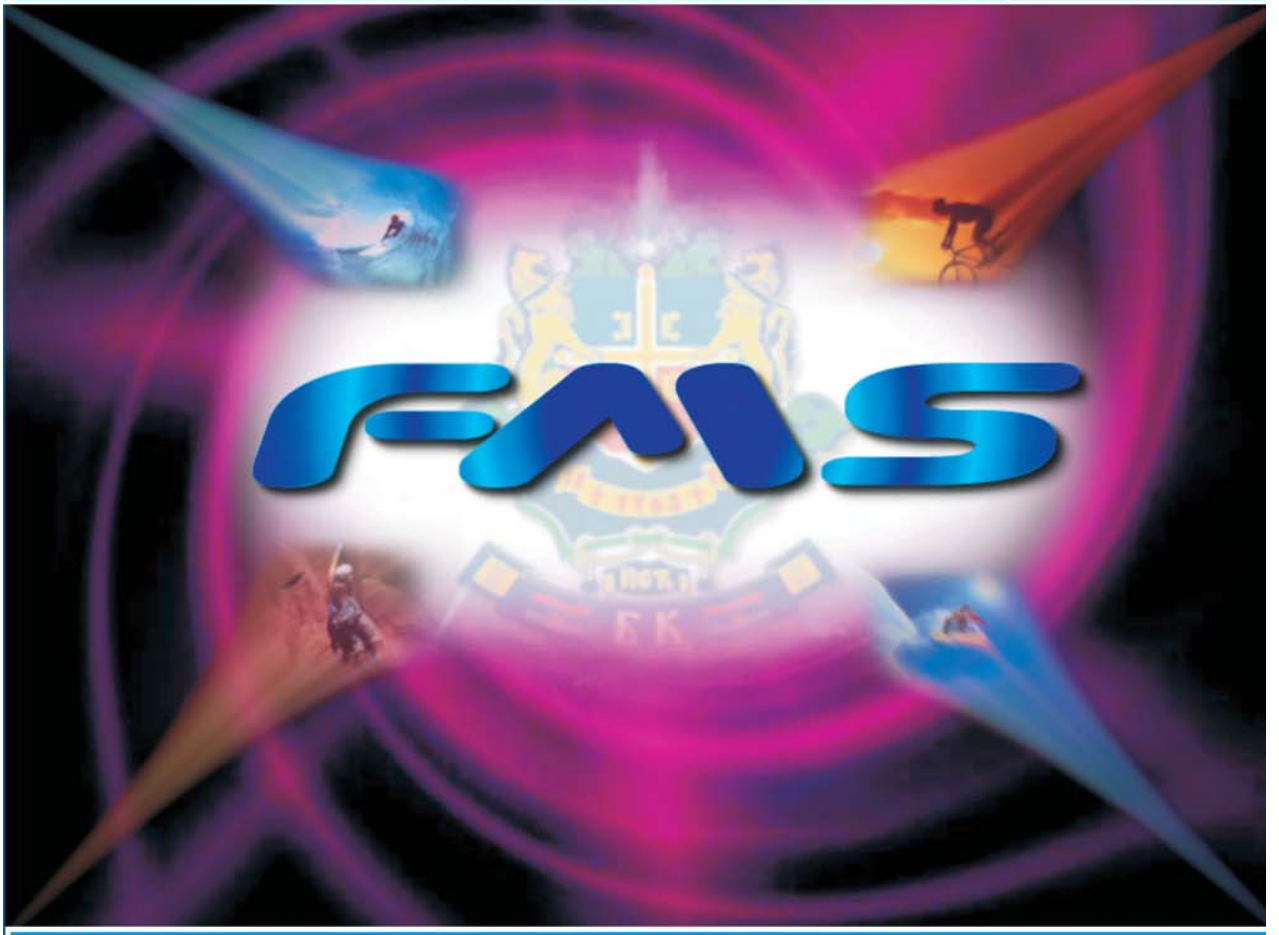
Vol. 5, No. 1, 2014 ISSN 2217-2343

Management In Sport

scientific journal in the filed of Management in Sport



ALFA UNIVERSITY
Faculty of Management in Sport

MENADŽMENT U SPORTU
Naučni časopis iz oblasti menadžmenta u sportu

Vol. 5 (2014), Br. 1 (1-)
ISSN 2217-2343

Izdavač
Fakultet za menadžment u sportu, *Alfa* Univerzitet, Beograd
Palmira Toljatija 3
www.fms.rs

Za izdavača/ for publisher
Prof. dr Dragan Životić, v.d. Dekan Fakulteta za menadžment u sportu, *Alfa* Univerzitet

Štampa i grafički dizajn
3D+, Beograd

Tiraž/copies: 100 primeraka

“ALFA UNIVERZITET”
Fakultet za menadžment u sportu

MENADŽMENT U SPORTU

Naučni časopis iz oblasti menadžmenta u sportu

Beograd, 2014.

CIP - Katalogizacija u publikaciji
Narodna biblioteka Srbije, Beograd

005:796

MENADŽMENT u sportu : naučni časopis iz oblasti menadžmenta u sportu / glavni urednik Dragan Životić ; odgovorni urednik Violeta Šiljak = Management in sport : scientific journal in the field of management in sport / editor-in-chief Dragan Životić ; responsible editor Violeta Šiljak. - Vol. 1, No. 1 (2010)- . - Beograd (Gradski park br. 2) : Fakultet za menadžment u sportu, Alfa Univerzitet, 2010- (Beograd : 3D+). - 23 cm

Dva puta godišnje
ISSN 2217-2343 = Menadžment u sportu
COBISS.SR-ID 175134220

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Violeta Šiljak, Ogovorni urednik

SADRŽAJ

UDK:796.433.1.015
(Originalni naučni članak)

USPEŠNOST BACANJA KUGLE KROZ KORIŠĆENJE DVE EKSPERIMENTALNE METODE - TRENAŽNE I TRADICIONALNE KOD STUDENATA FIZIČKOG VASPITANJA NA UNIVERZITETU JARMUK U JORDANU

Abd-Alkaharim Mahadma
Fakultet za fizičko vaspitanje, Univerzitet Jarmuk, Jordan

Apstrakt

Cilj ovog istraživanja je da se utvrdi efikasnost korišćenja dve metode treninga u bacanju kugle: tradicionalnog i trenažne, putem eksperimentalne metode u kojoj su učestvovali studenti atletike Fakulteta za fizičko vaspitanje i efekti ovih tehnika na ukupne rezultate u bacanju kugle kao i uticaj na razvoj nekih fizičkih karakteristika. Istraživanje uključuje dve grupe (ukupno 20) studenata Fakulteta za fizičko vaspitanje. Svaka grupa se sastojala od 10 studenata. Rezultati su pokazali da postoji statistički značajna razlika u obe grupe između dva merenja pre i posle sprovedenog eksperimenta, prikazujući fizički razvoj sposobnosti i rezultate u bacanju kugle. Nakon eksperimenta, između dve grupe ispitanika uočene su razlike.

Ključne reči: efikasnost, bacanje, kugla, eksperimentalne metode, obuka, tradicionalno

Uvod i značaj studije

Komunikacija naučnog progresa fizičkog vaspitanja i razvoja tehnologije dešava se u različitim oblastima sportske nauke, planiranju i stilovima učenja. Student je u fokusu obrazovnog procesa i predstavlja njegov temelj. Razvoj sposobnosti studenata je glavna svrha nastave. Dakle, trebalo bi da obrazovne institucije obrate posebnu pažnju na studenta (Davis, 1971) primenjujući obrazovnu tehnologiju koja podrazumeva prenos teoretskog obrazovanja u praksu. Prema Inajatu Abdulu Fatahu i Abasi (1987) efikasnost obrazovnog procesa ogleda se u odabiru najprikladnije metode i tehnike koje će pomoći studentima da ostvare svoje ciljeve. Suština je pronalaženje najbolje metode obuke, koja će nastavnicima pomoći da studentima omoguće postizanje obrazovnih ciljeva. Moston i Asor (1994) su tvrdili da je učenje odluka koja je podeljena na individualno i kolektivno učenje po koracima i fazama časa. Kilani (2003), Deri (1999) i Deri i Ahmed (1987) tvrde da je moguće koristiti više od jedne metode u jednoj lekciji.

Vrednost istraživanja

Odrediti najbolji način za bacanje kugle u nastavnom planu i programu iz atletike na Fakultetu za fizičko vaspitanje na Univerzitetu Jarmuk u Jordanu.

Problem istraživanja

1. Efikasno korišćenje dve nastavne metode (tradicionalne i trenažne) u vežbanju bacanja kugle i njihov uticaj na neke fizičke karakteristike.
2. Odrediti najbolji metod za učenje bacanja kugle.

Hipoteze

1. Postoje statistički značajne razlike između učinka merenja pre i posle eksperimenta, kao i delotvornosti nastavnih metoda (tradicionalnog i treninažnog) na određene fizičke karakteristike i rezultate u bacanju kugle.
2. Postoje statistički značajne razlike između merenja rezultata te dve metode za svaku grupu.

Program istraživanja

Istraživači su koristili eksperimentalni pristup učenju. Oformljene su dve grupe, jedna je bazirana na tradicionalnoj metodi, a druga na treningu.

Broj ispitanika

Niko od ispitanika se pre toga nije bavio bacanjem kugle. Ispitanici su podeljeni u dve grupe od po desetoro ljudi. Prva grupa je koristila tradicionalni metod. Druga grupa je koristila metod podučavanja treningom. Treba imati u vidu da su svi studenti bili pod jedinstvenim rukovodstvom istraživača sa specijalizovanim saradnicima u atletici.

Prosečne vrednosti i odstupanja u delotvornosti dve metode tokom ispitivanja treninga (označenog sa „T")

Tabela (1). Nema statistički značajne razlike na nivou ≤ 0,05 između dve grupe i tradicionalni i trening metod ukazuju na ravnopravnost dve grupe u ovim promenljivim.

	Tehnika	Iznos	Prosečna vrednost	Odstupanja	„T"	Stepen slobode	Statička vrednost
Starost / godine	Trening	10	20.05	665.	1.311	18	206.
	Tradicionalna	10	19.65	682.			
Visina / cm	Trening	10	163.85	3.370	998.	18	331.
	Tradicionalna	10	66.20	5.735			
Težina / kg	Trening	10	66.20	8.414	718.	18	482.
	Tradicionalna	10	63.30	9.612			
Savitljivost tela	Trening	10	7.80	4.315	935. 1-	18	069.
	Tradicionalna	10	11.70	4.692			
Bacanje medicinske lopte 1kg	Trening	10	4.34	497.	068.-	18	947.
	Tradicionalna	10	4.36				
Skok iz mesta / cm	Trening	10	1.64	951.	739.	18	470.
	Tradicionalna	10	1.41	176.			
Ravnoteža tela / sec	Trening	10	2.22	412.	378. 1-	18	185.
	Tradicionalna	10	2.58	713.			
Rezultati bacanja	Trening	10	5.37	652.	1.986	18	062.
	Tradicionalna	10	4.65	943.			

Načini sprovođenja istraživanja

- Eksperiment praćenja sproveden je na svakoj grupi 20.09.2012. godine. Za proučavanje je bilo potrebno vreme od šest sedmica, tri puta nedeljno, po pedeset minuta.
- Merenje nakon eksperimenta izvršilo se 03.11.2012. godine, po nastavnom planu i programu.

Rezultati i diskusija

Rezultati se odnose na prvu hipotezu, u kojoj se navodi „postojanje statistički značajne razlike između učinka merenja pre i posle eksperimenta, kao i delotvornosti nastavnih metoda (tradicionalne i treninga) na određene fizičke karakteristike i rezultate u bacanju kugle."

Tabela (2) prikazuje srednje vrednosti i standardna odstupanja T-testa za tradicionalni metod.

	Primena	Iznos	Prosečna vrednost	Odstupanja	„T"	Stepen slobode	Statistika
Težina / kg	pre	10	63.30	9.612	3.653	9	005.
	posle	10	61.86	8.918			
Savitljivost tela	pre	10	11.70	4.692	6.919-	9	000.
	posle	10	16.10	5.666			
Bacanje medicinske lopte 1kg	pre	10	4.36	902.	5.676	9	000.
	posle	10	4.91	880.			
Skok u dalj	pre	10	1.41	176.	8.318-	9	000.
	posle	10	1.55	154.			
Ravnoteža	pre	10	2.58	713	3.892-	9	004.
	posle	10	3.02	744.			
Rezultati u bacanju kugle	pre	10	4.65	943.	8.418-	9	000.
	posle	10	5.69	967.			

Tabela (2) Postojanje statistički značajnih razlika na nivou važnosti ($\alpha \leq 0{,}05$) između prosečnih merenja pre i posle sprovedenog istraživanja. Studenti tradicionalnog metoda u toku celog istraživanja pokazivali su pozitivne rezultate nakon programa časova.

Kako bi se utvrdile razlike pre i posle metode treninga, napravljena je tabela broj 3, koja prikazuje sledeće:

Tabela 3

	Termin	Iznos	Prosečna vrednost	Odstupanja	„T"	Stepen slobode	Statistički značaj
Težina / kg	pre	10	66.20	8.414	322.	9	755.
	posle	10	65.98	7.558			
Savitljivost tela	pre	10	7.80	4.315	3.000-	9	015.
	posle	10	9.80	5.371			
Bacanje medicinske lopte 1kg	pre	10	4.34	497.	6.771-	9	000.
	posle	10	4.64	512.			
Skok u dalj iz mesta	pre	10	1.64	951.	792.	9	449.
	posle	10	1.40	107.			
Ravnoteža	pre	10	2.22	412.	2.982-	9	015.
	posle	10	2.43	356.			
Rezultati u bacanju kugle	pre	10	5.37	652.	4.993-	9	001.
	posle	10	5.60	596.			

U tabeli 3 prikazana je statistički značajna razlika na nivou važnosti (0,05 ≤ a) između prosečnog merenja pre i posle sprovedenog istraživanja. Studenti trenažne metode u toku celog istraživanja pokazivali su pozitivne rezultate nakon programa časova.

Rezultati se odnose na drugu hipotezu, u kojoj se navodi „prisustvo statistički značajnih razlika između merenja posle eksperimenata sa obe metode na osnovu rezultata svake grupe."

U cilju potvrde ispravnosti ove hipoteze korišćene su srednje vrednosti, standardna odstupanja i T-test za varijable istraživanja, da bi se pronašla razlika između dva merenja dve metode podučavanja i tabela (4) to prikazuje.

Prosečne vrednosti i odstupanja u delotvornosti dve metode tokom ispitivanja treninga („T") nakon eksperimenta.

Tabela 4

	Tehnika	Iznos	Prosečna vrednost	Odstupanja	„T"	Stepen slobode	Statistički značaj
Težina / kg	Trening	10	65.98	7.558	1.115	18	280.
	Tradicionalna	10	61.86	8.918			
Savitljivost tela	Trening	10	9.80	5.371	2.552-	18	020.
	Tradicionalna	10	16.10	5.666			
Bacanje medicinske lopte 1kg	Trening	10	4.64	512.	836.-	18	414.
	Tradicionalna	10	4.91	880.			
Skok u dalj iz mesta	Trening	10	1.40	107.	2.514-	18	022.
	Tradicionalna	10	1.55	154.			
Ravnoteža	Trening	10	2.43	356.	2.240-	18	038.
	Tradicionalna	10	3.02	744.			
Rezultati u bacanju kugle	Trening	10	5.60	595.	245.-	18	809.
	Tradicionalna	10	5.69	967.			

U tabeli 4, statistički značajna razlika na nivou važnosti (0,05 ≤ a) nedostaje u svim grupama indikatora.

Zaključak

Uz pomoć naših nastavnih metoda postignuti su sledeći rezultati:

1. Grupa studenata koji su koristili tradicionalni metod pokazala je značajan napredak na nivou fizičkih karakteristika i rezultata u bacanju kugle.
2. Grupa studenata koji su koristili metod treninga pokazala je značajan napredak na nivou fizičkih karakteristika i rezultata u bacanju kugle.
3. Dve grupe studenata (tradicionalni i trenažni) nisu pokazale statistički značajne razlike u odnosu na dve grupe po svim indikatorima istraživanja.

Preporuke

1. Koristiti tradicionalni metod učenja veština u atletici.
2. Metod treninga može se koristiti u obuci atletičara.
3. Koristiti obe metode (tradicionalnu i trenažnu) u atletskom obrazovanju svih studenata.

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UDK: 796.352.012.53
(Originalni naučni članak)

NOVE TEHNOLOGIJE OBUKE U GOLFU

Milan Čoh
Fakultet za sport, Univerzitet u Ljubljani, Slovenija

Apstrakt

Golf je izuzetno složena igra koja zavisi od niza međusobno povezanih faktora. Jedan od najvažnijih elemenata nesumnjivo je tehnika zamaha u golfu. Visoke performanse tehnike zamaha u golfu generišu se kroz nivo motoričkih sposobnosti, visok stepen kontrole kretanja, nivo stabilizacije strukture pokreta, morfološke karakteristike, unutrašnju i međukoordinaciju mišića, motivaciju i koncentraciju. Tehnika zamaha u golfu ispitivana je korišćenjem metode biomehaničke analize. Kinematički parametri registrovani su korišćenjem dve sinhronizovane visokofrekventne kamere na frekvenciji od 2.000 Hz. Uzorak ispitanika činila su tri profesionalna golf igrača. Rezultati istraživanja pokazali su relativno visoku varijabilnost u tehnici zamaha. Maksimalna brzina loptice posle zamaha drvenom palicom kretala se od 233 do 227 km/h. Brzina loptice posle zamaha metalnom palicom bila je u proseku manja za 100 km/h. Elevacioni ugao kretanja loptice bio je u rasponu od 11,7 do 15,3 stepeni. U završnoj fazi zamaha, odnosno donjeg zamaha, rotatori kuka igraju ključnu ulogu.

Ključne reči: golf, tehnika, kinematika, parametri brzine

Uvod

Performanse u golfu zavise od brojnih faktora, među kojima se ključni značaj nesumnjivo pripisuje onima koji definišu tehniku udarca. U istoriji golfa, proučavanje tajne ovog elementa je stalno prisutno u igri brojnih amatera, kao i profesionalaca. Mnoge knjige i priručnici, koje su velemajstori golfa pisali kao pravilnike, bili su posvećeni ovom „kultnom elementu" (Allen, 2007).

Na polju proučavanja tehnike udarca stvorile su se potpuno nove mogućnosti uz pomoć moderne video tehnike u kombinaciji sa kompjuterskom tehnologijom. Putem posebnih softverskih alata možemo uspostaviti najvažnije kvantitativno biomehaničke parametre udarca u trodimenzionalnom prostoru (Simeon, Coleman, Rankin, 2005). U ovoj studiji, koristimo metodu kinematičke analize, koja osigurava precizno beleženje i vrednovanje najvažnijih parametara udarca, kao što su staze - putanje, vrednosti uglova, brzine, ugaone brzine i ubrzanja za pojedine delove ili segmente tela, kao i parametre kretanja palice i loptice. Navedeni podaci dobijeni su prenosom slika video snimaka u kompjuter, korišćenjem postupka digitalizacije modela golf igrača od 15-segmenata. Budući da imamo podatke o igraču u trodimenzionalnom prostoru, možemo proučavati igrača u bilo kojoj fazi udarca, koji je od ključnog značaja za tehniku.

Prema dostupnoj literaturi, nalazimo da se u toku razvoja golfa tehnika udaraca znatno promenila (Hay, 1985; Allen, 2007; Owens, 1992). Danas još uvek postoje velike pojedinačne

razlike u tehnici udarca između najboljih profesionalnih igrača, što zapravo i ne čudi, jer znamo da su te razlike rezultat različitosti u njihovim motoričkim sposobnostima i antropometrijskim karakteristikama. Udarac u golfu, ili tačnije, njegova preciznost, direktno utiče na rezultat igranja, stoga ne čudi da je potraga za novim pristupima i metodama za poboljšanje ovog elementa igre uvek jednako aktuelna i prisutna u procesu treniranja. Visok stupanj standardizacije kretanja, koordinacije u vremenu i prostoru (tajming), kontrola pokreta sistema igrač-palica-loptica ključni su faktori koji u interakciji stvaraju uspešnost udarca i time u velikoj meri i performanse igranja. (Wiren, 2010; Simeon, Coleman, Rankin, 2005; MacKenzie, Springings 2008)

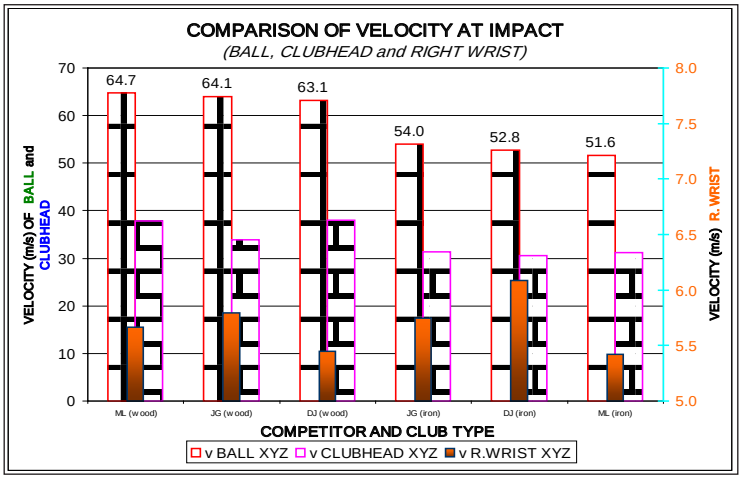
S obzirom na činjenicu da je kvalitet udarca u golfu jedan od najvažnijih faktora, predmet istraživanja bio je da se identifikuju neki od najvažnijih kvantitativnih kinematičkih parametara u dva različita udarca - udarac drvenom i metalnom palicom - i da se ustanovi razlika između igrača i razlike koje proizilaze iz upotrebe dve različite vrste palica za golf.

Metode

Studija je rezultat saradnje između Udruženja profesionalnih golfera Slovenije i Laboratorije za biomehanička merenja na Fakultetu za sport u Ljubljani. Istraživanje je obuhvatilo tri slovenačka profesionalna golfera (M.L., D.J., i J.G.), od kojih je svaki izveo po tri udarca sa dve različite palice za golf (drvenom, metalnom). Da bi se uspostavili kinematički parametri korišćeni su 3D video sistemi za kinematičke analize pod nazivom APAS (Ariel Performance Analysis System) i CMAS (Consport Motion Analisys System). Tehnika udarca snimljena je dvema visokofrekventnim kamerama (JVC TK 1281) postavljenim pod pravim uglom. Kamere su bile sinhronizovane. Kamere su postavljene ispred golfera pod uglom od 45° odnosno 135°, u pravcu udarca. Učestalost snimaka bila je 2000 Hz. Mase i centri gravitacije segmenata i zajednički centar gravitacije tela golfera izračunati su prema antropometrijskom modelu (Dempster, 1955). Svi kinematički parametri filtrirani su pomoću Batervortovog filtera sedmog stepena. Prostor je bio kalibrisan referentnom kockom i definisan horizontalnom X - osom, vertikalnom Y – osom i poprečnom Z – osom. Kriterijum za odabir udarca za analizu bio je početna brzina loptice.

Rezultati i diskusija

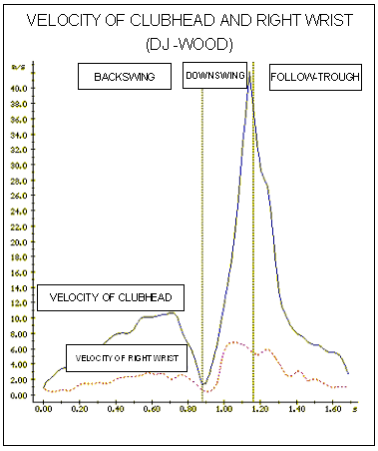
Rezultati kinematičke analize udarca drvenom palicom i udarca metalnom palicom ukazuju na to da u tom pogledu postoje i velike pojedinačne razlike između golfera koji su izabrani za ogled. Udarci se razlikuju kako u brzini individualnih segmenata tela, tako i u brzini palice, i brzini loptice u trenutku udarca. Značajna razlika može biti uspostavljena u putanji glave palice u svim fazama udarca. Sa slike 1 moguće je utvrditi vrednosti brzine loptice, brzinu glave palice, i brzinu desnog zgloba prilikom udarca.



Slika 1. Brzina loptice, brzina glave palice, i brzina desnog zgloba prilikom udarca drvenom odnosno metalnom palicom

Najveću brzinu loptice prilikom udarca drvenom palicom postigao je M.L., 64,7 m/s (233 km/h), sledeći je J.G. koji je dostigao brzinu od 64,1 m/s (230 km/h), a najmanju brzinu od 63,1 m/s (227 km/h) postigao je D.J. Prosečna brzina iznosi 63,9 m/s (231 km/h). Brzine loptica prilikom udarca metalnom palicom bile su u proseku za 10 m/s manje kod sva tri golfera. Na osnovu slike 4 može se zaključiti da udeo brzine glave palice i desnog ručnog zgloba prilikom udarca loptice može znatno varirati. Brzina loptice nije nužno najveća kod igrača koji postiže najveću brzinu udarca glavom palice, jer udarac može biti ekscentričan i samim tim deo brzine palice upotrebljen je za rotiranje lopte.

Slika 2 prikazuje principe menjanja brzine glave palice i desnog zgloba u funkciji vremena u tri ključne faze udarca. Brzina glave palice povećava se postepeno do poslednje trećine zamaha i potom opada do nule, zbog promene smera kretanja u fazi donjeg zamaha. U fazi donjeg zamaha dolazi do maksimalnog povećanja brzine neposredno pre tačke udarca.

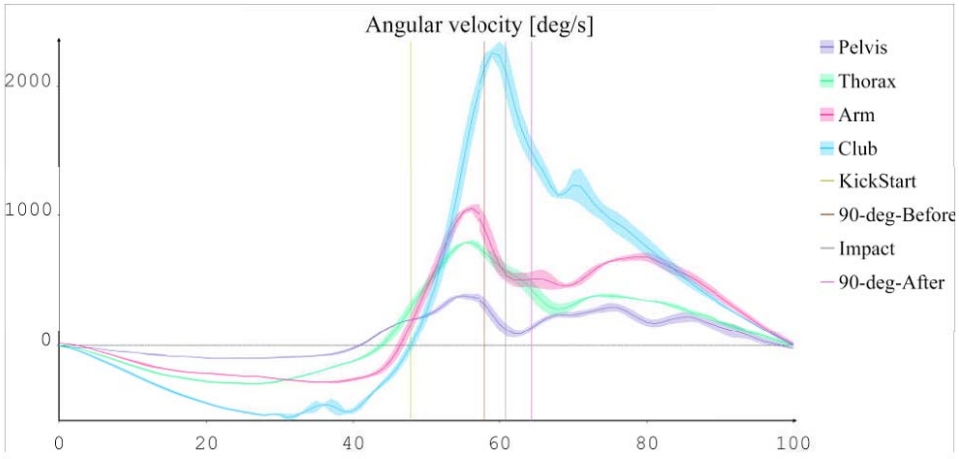


Slika 2. Brzina glave drvene palice i desnog zgloba u funkciji vremena

Brzina se smanjuje postepeno dok se ne zaustavi u završnici udarca. Vrlo sličnu sklonost ka menjanju brzine ima i zglob, njegova brzina je u proseku za 6,5 puta manja od brzine glave palice. Prosečna maksimalna brzina glave palice kod golfera u našem eksperimentu je 36,6 m/s (132 km/h). Najveću brzinu glave palice postigao je D.J., 41,9 m/s (151 km/h). Međutim, dobijeni rezultati se moraju uzeti u obzir sa rezervom, s obzirom na to da tehnologija koja nam je dostupna za obavljanje ovih merenja ima određena ograničenja. Glavno ograničenje je relativno niska frekvencija (50 Hz) korišćenih kamera. Za apsolutnu tačnost proučavanja problema ove vrste bile bi neophodne posebne video kamere sa frekvencijom od 500 ili više sličica.

Ugaoni parametri na početku zamaha (početak donjeg zamaha) i udar pružaju neke osnovne informacije o kvalitetu udarca. Najveće razlike između golfera javljaju se u uglu između ose kuka i pravca udarca u trenutku sudara. J.G. ima najveći ugao na ovom mestu, tj. 45°. Što se tiče drugih uglova, nema značajnih razlika između golfera. Prosečna vrednost ugla ramene ose u odnosu na pravac udarca na vrhu zamaha iznosi 104,9°, ovde najveći ugao postiže D.J. 109,3°, a ugao koji postiže J.G. je 105,4°, a ugao koji postiže M.L. je 100° (veći ugao podrazumeva jače „uvijanje" i „time veću mogućnost elastičnosti rotatora kuka"). U fazi udara, ugao između ramene ose i pravca udarca iznosi u proseku do 13°; ovde, najveći ugao dostiže J.G., odnosno 17°. Na početku zamaha, prosečan ugao između ramene ose i ose kuka je 73° kod sva tri golfera. Najizraženije „uvijanje" tela imao je D.J. 76°, a zatim slede J.G. sa 72°, i M.L. sa 71°.

Na osnovu menjanja uglova između različitih segmenata tela i ugla vektora brzine glave palice (slika 3) možemo uspostaviti čitavu složenost vremena i prostornu sinhronizaciju (tajming) tokom izvođenja udarca.



Slika 3. Ugao između ose kuka i ramene ose, ugao između ramene ose i ruke, i ugao vektora brzine glave palice u odnosu na horizontalu (X osa). Prva vertikalna linija označava poziciju početka zamaha (kraj zamaha), a druga poziciju udara.

Na početku udarca, ramena osa i osa kuka su gotovo paralelne, a potom se ugao između njih postepeno povećava dok ne dođe do polovine faze zamaha. U drugoj polovini zamaha, ugao se ubrzano povećava, i počinje da opada na početku donjeg zamaha, što je rezultat „odvijanja" rotatora kuka. Ugao između ramene ose i ruke u fazi donjeg zamaha ukazuje na to da se javlja ekscentrično-koncentrična mišićna napetost.

Zaključak

Kinematička analiza udarca u golfu jedna je od prvih studija ovog tipa kojom smo želeli da utvrdimo neke osnovne parametre tehnike za drvenu i metalnu palicu za golf. Rezultati ukazuju na značajne pojedinačne razlike među igračima golfa uključenim u eksperimentalni postupak biomehaničkih merenja. Golferi se razlikuju pre svega u brzini palice, brzini loptice u trenutku udarca, dalje, u putanji glave palice u svim fazama udarca, kao i u tajmingu ramene ose i ose kuka. Nema sumnje da bi bilo razumno nastaviti s ovakvim studijama u budućnosti i na taj način ponuditi igračima i trenerima odgovarajuću podršku u smislu modeliranja tehničke obuke i objektivnije kontrole tehnike udarca kao ključnog elementa za igru golf.

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UDK:796.332.058
(Originalni naučni članak)

RAZLIKE U POKAZATELJIMA SITUACIONE EFIKASNOSTI IZMEĐU FUDBALSKIH EKIPA RAZLIČITIH RANGOVA TAKMIČENJA

Alen Kapidžić, Damir Ahmić, Adnan Salkić, Jasmin Mehinović, Ismet Bašinac
Fakultet za tjelesni odgoj i sport Univerziteta u Tuzli

Apstrakt

Osnovni cilj ove studije jeste da dođemo do informacija o učestalosti primene tehničko-taktičkih ispoljavanja a na osnovu parametara koji procenjuju napadačke i odbrambene elemente fudbalske igre. Za potrebe ove studije izvršena je analiza sledećih pokazatelja situacione efikasnosti: GOLOVI – broj postignutih pogodaka, ŠUT U METU – broj ostvarenih šutiranja u okvir gola, ŠUT VAN METE – broj ostvarenih šutiranja van okvira gola, KORNERI – broj kornera i PREKRŠAJI – broj pretrpljenih prekršaja. Analizirane su utakmice sa pet različitih rangova takmičenja i to: trideset (30) utakmica Premijer lige BiH u sezoni 2008/09, dvadeset i pet (25) utakmica sa Evropskog fudbalskog prvenstva 2008. godine, četrdeset (40) utakmica Lige šampiona u sezoni 2011/12, četrdeset (40) utakmica Evropske lige u sezoni 2011/12 i dvadeset i devet (29) utakmica Svetskog fudbalskog prvenstva 2010. godine. Od statističkih analiza za potrebe ovog istraživanja primenjen je Median test. Ovim testom možemo videti da li postoje razlike između grupa entiteta, ali ne možemo znati između kojih grupa je razlika najizraženija. Zbog toga su dobijeni podaci transformisani na viši nivo pomoću Blumove procedure, a nakon toga je primenjena univarijatna analiza varijanse. Kako bi se smanjila verovatnoća greške unutar univarijatne analize varijanse, a zbog većeg broja međusobnih upoređivanja i zbog grupa sa nejednakim brojem entiteta, primenjen je Šefe kriterijum.

Ključne reči: razlika, efikasnost, fudbal, rang

Uvod

Na osnovu analize utakmica može se dobiti pregled određenih situacija koje se dešavaju u toku fudbalske utakmice. Takve informacije nam pružaju mogućnost da identifikujemo prednosti koje se dalje mogu održavati ili razvijati, kao i nedostatke, što sugeriše područja na kojima treba raditi u cilju njihovog poboljšanja. Primena taktičkih varijanti unutar igre nije standardizovana jer zavisi od velikog broja faktora, primarno od tehničke, taktičke kao i fizičke pripremljenosti igrača. Istraživanja koja su se bavila ovom problematikom pokušala su da pokažu koja tehničko-taktička ispoljavanja razlikuju pobedničke od poraženih ekipa (Lago-Penas, Lago-Ballesteros, Dellal & Gomez, 2010; Rowlinson, & O'Donoghue, 2007; Grant, Williams & Reilly, 2009). Moramo naglasiti da je analiza fudbalske igre veoma kompleksna. Kompleksnost se ogleda u velikom broju različitih situacija u kojima se igrači mogu naći

(Jordi, Waitzman & Nunes-Amaral, 2010). Svaka situacija zahteva primenu određenih tehničko-taktičkih postupaka u svrhu rešavanja date situacije. S obzirom da se fudbalska igra brzo razvija i unapređuje, možemo reći da informacije dobijene unutar ovog istraživanja ne mogu za duži vremenski period oslikavati primenu tehničko taktičkih elemenata. Detektujući određene tehničko-taktičke postupke i njihove frekvencije, možemo predvideti koji tehničko-taktički elementi doprinose podizanju kvaliteta fudbalske igre (Grant, et.al. 2009). Za uspeh u fudbalskoj igri, vrlo je važan tehničko-taktički elemant šutiranja na gol, a što je istraživano i unutar ove studije. Efikasnost šutiranja na gol (postignuti pogodak) je jedan od bitnih faktora koji determiniše pobedničke od poraženih ekipa. Postizanje pogodaka u fudbalu uslovljeno je tehničkom i taktičkom superiornošću jedne ekipe. Takođe, jedan od faktora koji utiče na efikasnost šutiranja jeste i kvalitet dodavanja tj. asistencije (Armatas, et al.2009; Hewer & James, 2004; Njororai, 2004; James, Mellalieu & Holley 2002; Hughes & Franks 2005). Jedan od segmenata fudbalske igre, a na kome se zasniva i ovo istraživanje, jeste frekvencija šutiranja prema golu u odnosu na udaljenost od gola. Na ovaj način želimo da dobijemo informacije da li ekipe više koriste šut prema golu unutar ili van šesnaesterca u odnosu na rang takmičenja. Dosadašnjim istraživanjima došlo se do podataka da su i ovi parametri promenjivi u odnosu na rang takmičenja (Yiannakos & Armatas 2006; Carling, Williams, & Reilly 2005; Janković, Leontijević, Jelušić, Pašić, & Mičović, 2011;). Takođe, neki autori su došli do podataka da su pobedničke ekipe imale veću frekvenciju šutiranja od poraženih unutar istog ranga takmičenja (Szwarc, 2004; Hughes & Snook 2006).

Postizanje pogotka uslovljeno je tehničkim karakteristikama i primenom individualne taktike igrača u samoj realizaciji šutiranja. Grupna taktika u napadu važna je u stvaranju situacije za dolazak u poziciju za šutiranje. Pored navedenog u stvaranju povoljne situacije za šutiranje i postizanje pogotka, važna je i taktika protivnika. Ako odbrambeni igrači primenom svojih taktičkih postupaka dozvoljavaju napadačima dovoljno vremena i prostora, onda će njihovi napadi svakako biti uspešniji (Hughes, & Churchill, 2005; Lago-Ballesteros, & Lago-Penas 2010; Engelbrecht, 2010). Međutim, moramo naglasiti da ostvarena frekvencija šutiranja zavisi od efektivnog vremena trajanja igre. S toga smo unutar ove studije uzeli u obzir i frekvenciju standardnih situacija (prekršaji i korneri) koje se dešavaju u toku jedne utakmice. Svaki prekid igre smanjuje i efektivno vreme trajanja iste. Od ovih parametara direktno je zavisna i efikasnost jedne ekipe koja se ogleda u šutevima na gol i postignutim pogocima (Engelbrecht, 2010; Carling, et. al. 2005; Luhtanen, Belinskij, Hayrinen & Vanttinen, 2001). Osnovni cilj ovog istraživanja jeste da se utvrdi postoje li razlike između ekipa klubskog i rezprezentativnog nivoa takmičenja. U ovom radu u istraživanje su uzeti u obzir i parametri situacione efikasnosti ekipa premijer lige BiH u sezoni 2008/09, kako bi ih uporedili sa ekipama koje se takmiče na kvalitetnijem nivou. Već duži niz godina ekipe iz naše zemlje nisu u mogućnosti da se kvalifikuju na neko od većih takmičenja. Ako bi doprineli podizanju kvaliteta klupskog fudbala u BiH (Bosna i Hercegovina), sigurno je da bi reprezentativni nivo takmičenja bio kvalitetniji. Preciznije, u ovoj studiji želimo da dobijemo informacije o učestalosti primene tehničko-taktičkih ispoljavanja koje procenjuju napadačke i odbrambene elemente fudbalske igre. Na ovaj način, prvenstveno s apekta Premijer Lige (BiH), možemo videti u kojim segmentima igre smo slabiji, bolji ili jednaki u odnosu na kvalitetnije nivoe takmičenja.

Za potrebe ovog istraživanja analizirane su utakmice sa pet različitih nivoa takmičenja. Anilizirani su pokazatelji situacione efikasnosti u trideset odigranih utakmica Premijer lige BiH u sezoni 2008/2009. Tako smo unutar ovih trideset odigranih utakmica dobili šezdeset entiteta i entiteti unutar ove grupe su označeni kao entiteti grupe ''Premijer 2008". Takođe, analizirali smo dvadeset i pet odigranih utakmica na Evropskom fudbalskom prvenstvu 2008.

godine, održanog u Austriji i Švajcarskoj. Na ovaj način dobili smo pedeset entiteta unutar ove grupe skupa, koji su označeni kao entiteti grupe ''Euro 2008". Unutar Lige šampiona analizirali smo četrdeset odigranih utakmica u sezoni 2011/12. Tako smo dobili osamdeset entiteta unutar ove grupe, koji su označeni kao grupa ''Liga šampiona". Unutar Evropske lige analizirali smo četrdeset odigranih utakmica u sezoni 2011/12 i dobili osamdeset entiteta unutar ove grupe. Entitete iz ove grupe označili smo kao entiteti grupe ''Evropska liga". U analizu je uzet još jedan nivo takmičenja, a to je Svetsko fudbalsko prvenstvo održano 2010. godine u Južnoj Africi. Na ovom nivou takmičenja u obzir su uzete 29 odigrane utakmice i tako je dobijeno 58 entiteta. Entiteti unutar ove grupe označeni su kao entiteti grupe ''Svetsko 2010".

Metode prikupljanja podataka

Podaci o situacionoj efikasnosti ekipa koje su učestvovale u Premijer ligi BiH u sezoni 2008/2009, prikupljeni su tako što su merioci analizirali snimljene utakmice i u posebno prilagođene formulare unosili podatke o situacionoj efikasnosti ekipa. Pre početka analiziranja snimljenih utakmica i unošenja podataka, ekipa merilaca je izvršila probno merenje određenih tehničko-taktičkih elemenata situacione efikasnosti, odnosno varijabli koje su određene za ovo istraživanje. Na ovaj način merioci su upoznati sa varijablama koje trebaju pratiti i unosti u formular, objašnjeni su im kriterijumi za sve varijable koje prate, kako bi se smanjila mogućnost pojavljivanja grešaka tokom analiziranja utakmica. Ekipu merilaca sačinjavali su: pet profesora fizičkog vaspitanja i sporta i pet trenera Škole fudbala ''Eurofootball". Merioci su nakon probnog merenja podeljeni u dve grupe i svaka grupa merilaca je analizirala sve utakmice. Nakon završene analize, rezultati i jedne i druge grupe merilaca su sumirani i vršeno je njihovo upoređivanje, a sve u cilju dobijanja što objektivnijih pokazatelja. Upoređivanjem dobijenih podataka, uvideli smo da u analiziranim varijablama nisu prisutna odstupanja između ove dve grupe merilaca, što nam govori da su kriterijumi ove dve grupe merilaca ujednačeni.

Podaci o situacionoj efikasnosti reprezentacija koje su učestvovale na evropskom fudbalskom prvenstvu 2008. godine, dobijeni su sa oficijelne stranice www.euro2008.com na kojoj je prikazana zvanična statistika sa evropskog fudbalskog prvenstva.

Podaci o situacionoj efikasnosti za Ligu Šampiona 2001/12 i Evropsku ligu 2001/12 dobijeni su sa oficijelne UEFA stranice www.uefa.com.

Podatke o situacionoj efikasnosti reperezentacija koje su učestvovale na Svetskom prvenstvu 2010. godine dobili smo sa oficijelne FIFA stranice www.fifa.com.

Uzorak varijabli

Varijable unutar ovog istraživanja čine tehničko-taktički elementi igre koje su ekipe primenjivale u toku igre. Ove statističke pokazatelje FIFA i UEFA promovišu za sva takmičenja koja se odigravaju pod njihovim okriljem. Za potrebe ovog istraživanja u uzorak varijabli uzeli smo pet (5) varijabli.

GOLOVI – broj postignutih pogodaka,
ŠUT U METU – broj ostvarenih šutiranja u okvir gola,
ŠUT VAN METE – broj ostvarenih šutiranja van okvira gola,
KORNERI – broj kornera,
PREKRŠAJI – broj pretrpljenih prekršaja.

Statističke procedure

Za utvrđivanje razlika između ekipa koje su uzete u uzorak entiteta, koristili smo Median test. Primenom median testa možemo uvideti da li postoje razlike između grupa entiteta, ali ne možemo znati između kojih grupa je naizraženija razlika. Zbog toga podatke koje dobijemo u postupku prikupljanja, transformisaćemo pomoću Blumove procedure kako bi ih prebacili na veći nivo. Nakon toga primenićemo univarijatnu analiza varijanse sa primenom *Post Hoc*poređenja. Kako bi se smanjila verovatnoća greške koja nastaje zbog većeg broja međusobnih upoređivanja i zbog grupa sa nejednakim brojem entiteta primenjen je Šefe test.

Rezultati

Na osnovu dobijenih rezultata u tabeli 1, možemo videti u kojim od primenjenih varijabli se aritmetičke sredine grupa razlikuju međusobno. Vidimo da u varijablama broj postignutih pogodaka i broj ostvarenih udaraca u okvir gola nisu uočene statistički značajne razlike između grupa entiteta. U varijabli broj ostvarenih udaraca van okvira gola, uočene su statistički značajne razlike između grupe ''Svetsko 2010" i svih ostalih grupa. U varijabli broj izvedenih kornera, nisu uočene statistički značajne razlike među grupama. I na kraju, u varijabli broj učinjenih prekršaja utvrđena je statistički značajna razlika između grupe ''Premijer 2008" i svih ostalih grupa. Takođe, u istoj varijabli utvrđena je razlika između grupe ''Euro 2008" sa ostalim grupama osim grupe ''Svetsko 2010".

Tabela 1

		GOLOVI		SUT U METU		SUT VAN METE		KORNERI		PREKRŠAJI	
		Median (1.00)		**Median (5.00)**		**Median (6.00)**		**Median (4.50)**		**Median (13.00)**	
		ANOVA		**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**	
Evropskaliga	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	Liga šampiona	.0260886	.987	-.0464477	.901	.0115546	.999	.0407754	.938	-.0570092	.751
	Premijer 2008	.0295073	.984	-.1118220	.266	-.0187802	.995	.0395849	.957	-.3593710	.000
	Euro 2008	.0303170	.986	-.1027617	.411	-.0499542	.851	-.0110084	1.000	-.2039190	.001
	Svjetsko 2010	.0693113	.729	-.0787755	.640	-.4388800	.000	-.0132021	.999	-.0975708	.325
		Median (1.00)		**Median (5.00)**		**Median (5.00)**		**Median (4.00)**		**Median (14.50)**	
		ANOVA		**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**	
Ligašampiona	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	Evropska liga	-.0260886	.987	.0464477	.901	-.0115546	.999	-.0407754	.938	.0570092	.751
	Premijer 2008	.0034186	1.000	-.0653743	.774	-.0303349	.967	-.0011905	1.000	-.3023619	.000
	Euro 2008	.0042284	1.000	-.0563140	.879	-.0615088	.725	-.0517838	.910	-.1469099	.046
	Svjetsko 2010	.0432227	.939	-.0323278	.980	-.4504346	.000	-.0539775	.883	-.0405616	.937

	Median (1.00)			**Median (6.00)**		**Median (6.00)**		**Median (4.00)**		**Median (21.50)**
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**
	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
Premijer2008	Evropska liga	-.0295073	.984	.1118220	.266	.0187802	.995	-.0395849	.957	.3593710	.000
	Liga šampiona	-.0034186	1.000	.0653743	.774	.0303349	.967	.0011905	1.000	.3023619	.000
	Euro 2008	.0008098	1.000	.0090604	1.000	-.0311739	.976	-.0505933	.932	.1554520	.048
	Svjetsko 2010	.0398041	.964	.0330465	.983	-.4200997	.000	-.0527870	.912	.2618002	.000
	Median (1.00)			**Median (5.00)**		**Median (6.00)**		**Median (5.00)**		**Median (17.00)**
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**
	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
Euro 2008	Evropska liga	-.0303170	.986	.1027617	.411	.0499542	.851	.0110084	1.000	.2039190	.001
	Liga šampiona	-.0042284	1.000	.0563140	.879	.0615088	.725	.0517838	.910	.1469099	.046
	Premijer 2008	-.0008098	1.000	-.0090604	1.000	.0311739	.976	.0505933	.932	-.1554520	.048
	Svjetsko 2010	.0389943	.972	.0239862	.996	-.3889258	.000	-.0021937	1.000	.1063482	.352
	Median (1.00)			**Median (6.00)**		**Median (15.00)**		**Median (5.00)**		**Median (15.00)**
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**
	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
Svetsko 2010	Evropska liga	-.0693113	.729	.0787755	.640	.4388800	.000	.0132021	.999	.0975708	.325
	Liga šampiona	-.0432227	.939	.0323278	.980	.4504346	.000	.0539775	.883	.0405616	.937
	Premijer 2008	-.0398041	.964	-.0330465	.983	.4200997	.000	.0527870	.912	-.2618002	.000
	Euro 2008	-.0389943	.972	-.0239862	.996	.3889258	.000	.0021937	1.000	-.1063482	.352
	Median Test			Median Test		Median Test		Median Test		Median Test	
	Sig.		.626	Sig.	.079	Sig ..000		Sig.	.520	Sig.	.000

Diskusija

Dobijeni rezultati jasno ukazuju da je u varijabli broj udaraca van okvira gola utvrđena statistički značajna razlika između grupa ''Svetsko 2010'' i svih ostalih grupa. Vidimo da su entiteti ove grupe imale u proseku veći broj ostvarenih udaraca prema protivničkom golu u odnosu na ostale grupe. Treba naglasiti, da ostvarena frekvencija šutiranja prema protivničkom golu zavisi od tehničkih kvaliteta igrača, individualne taktike igrača koji izvode akciju, pa do taktike protivničkih igrača (Armatas, et al.2009; Hewer & James, 2004; Njororai, 2004). Da bi ekipa stvorila povoljnu priliku za šutiranje, za to su joj neophodni igrači sa dobrim tehničkim

kvalitetima u cilju ostvarivanja prevovremenog dodavanja. Neki autori su došli do zaključka (Armatas, et al.2009; Lago-Penas, Lago-Ballesteros, & Rey, 2011) da su ekipe koje su visoko rangirane na tabeli, ostvarile veći broj udaraca unutar šesnaesterca na protivnički gol od ekipa koje su niže-rangirane. To je upravo uslovljeno tehničkim kvalitetom igrača, uigranošću jedne ekipe u sprovođenju taktičkih varijacija i stvaranja povoljne prilike za šutiranje. Sve grupe (ekipe/reprezentacije) koje su analizirane postižu u proseku jedan gol po utakmici. Shodno tome možemo reći da je grupa ''Svetsko 2010" mnogo neefikasnija u realizaciji šutiranja od ostalih grupa sa kojima je poređena, s obzirom na ostvarenu frekvenciju šutiranja. Na osnovu rezultata ovog istraživanja možemo reći da grupe (ekipe/reprezentacije) koje imaju veću efikasnost šutiranja imaju i kvalitetnija tehničko taktička ispoljavanja. Preciznije, selekcija napadača kod kvalitetnih ekipa, sve više je usmerena prema napadačima koji imaju veliki procenat efikasnosti kod udaraca na protivnički gol. Dokaz tome je da se veliki broj istraživanja bavi upravo analizom procenta uspešnih udaraca tj. udaraca iz kojih su postinuti pogoci (Bell, Walker, McRobert, Ford & Williams, 2006; Hughes, & Petit, 2001) Kroz dosadašnja istraživanja došlo se do podataka da se broj napada koji su završeni nepreciznim udarcem prema golu smanjuje(Janković, Leontijević, & Mićović, 2009). Treba naglasiti da na broj preciznih i nepreciznih udaraca prema protivničkom golu utiče i udaljenost sa koje se izvodi udarac (Engelbrecht, 2010). Shodno tome možemo reći da ekipe sve više pažnje posvećuju odbrani sopstvenog gola. Naravno ostvarena frekvencija šutiranja zavisi i od protivničkih igrača, tj. da li odbrambeni igrači sprovođenjem odbrambenih taktičkih postupaka dopuštaju napadačima dovoljno vremena i prostora za organizaciju napada. U nekim dosadašnjim istraživanjima autori su utvrdili da se pobedničke ekipe razlikuju od poraženih u ukupnom broju šuteva i broju šuteva u okvir gola (Lago-Penas, et al. 2010; Erdil, Bozkurt, & Isleyen 2010; Armatas, et al.2009). Šut je završni element u igri i cilj mu je postizanje pogotka. Samo šutiranje je vezano i za intelekt igrača tako da su faktori koji utiču na dolazak u poziciju za šutiranje kao i samu realizaciju šutiranja mnogobrojni počev od individualne i grupne taktike pa do iskustva igrača (Duch, Waitzman, & Nunes-Amaral, 2010). Smatramo da je kvalitet finalnog dodavanja, pre samog šutiranja, od velikog značaja za stvaranje povoljne prilike za šutiranje. Na efikasno finalno dodavanje utiče i vremenska usklađenost igrača koji dodaje loptu i igrača koji istu prima. S tim u vezi važno je da igrač koji dodaje loptu na vreme uoči igrača koji dolazi u poziciju za šutiranje. Pravovremenost dodavanja zavisi od tehničkih kavaliteta igrača koji učestvuju u akciji, ali i od individualnih taktičkih sposobnosti igrača. S jedne strane tehnički kvalitet dolazi do izražaja kod kvalitete samog dodavanja. Taktičke sposobnosti igrača kod stvaranja pozicije za udarac na gol, dolaze do izražaja u smislu odabira povoljne pozicije za šut i kod predviđenja kretanja kretanja odbrambenih igrača što je važno za efikasno finalno dodavanje (Armatas, et al.2009).

Statistički značajne razlike između grupa prisutne su i u varijabli broj počinjenih prekršaja. Kako vidimo iz tabele 1, najveći broj prekršaja po jednoj utakmici napravile su ekipe grupe ''Premijer 2008" a potom reprezentacije grupe ''Euro 2008". Samim tim, možemo doći do zaključka da je efektivno vreme trajanja igre manje kod ove dve grupe entiteta u odnosu na ostale grupe. Interesantno je da nisu prisutne statistički značajne razlike između grupa u varijablama postignuti pogoci, broj izvedenih kornera kao i u varijabli šut u okvir gola. Možemo reći da su grupe ''Premijer 2008" i ''Euro 2008" za manje efektivno vreme trajanja igre ostvarile približno istu frekvenciju u navedenim varijablama. Veća frekvencija prekida utakmice može biti povezana sa taktičkim ponašanjem igrača unutar jedne ekipe (kooperativnost), slabije interakcije igrača nakon oduzete lopte od protivnika kao i generalne strategije u igri (Memmert, 2011; Memmert 2010; Bate, 1998). Veća frekvencija pretrpljenih prekršaja po jednoj utakmici može nastati upravo kao posledica neracionalnih taktičkih postupaka koji

bi omogućili da se na vreme zaustavi protivnik. Takođe veća frekvencija prekida igre može nastati usled nedostatka tehničke pripremljenosti kao neadekvatan odgovor na datu situaciju. Naravno za adekvatan odgovor na datu situaciju vrlo važna je i kreativnost igrača koja se treba sistematski razvijati u dugogodišnjem procesu izgradnje igrača (Hughes, & Franks, 2005; Hughes, & Churchill, 2005). Veliki broj prekršaja (prekida igre) ne mora biti nedostatak ze ekipe. Efikasna organizacija napada posle prekršaja, pogotovo u protivničkoj polovini terena je prvenstveno uslovljena taktičkom kvalitetom igrača. Potrebno je da u organizaciji napada igrači koriste taktičke postupke za stvaranje prostora, kako bi ekipa/reprezentacija organizovala efikasan napad. Tako autori koji su se bavili ovom problematikom (Fulurija, 2010) došli su do rezultata koji ukazuju da efikasnost akcija nakon prekida igre do 16 metara zavisi od broja igrača koji učestvuju u organizaciji iste. S druge strane efikasnost akcija nakon prekida igre preko 16 metara ovisi prvenstveno od primene taktičkih varijacija za stvaranje slobodnog prostora. U istraživanjima koja su tretirala problematiku odbrambenih elemenata nogometne igre (Lago-Penas, et al. 2011; Lago-Penas, et al. 2010) utvrđene su statistički značajne razlike između pobedničkih i poraženih ekipa u broju crvenih i žutih kartona. Utvrđene razlike idu u korist poraženih ekipa, koje su definisane i kao manje kvalitetne ekipe. Na osnovu dobijenih rezultata u našem istraživanju, možemo reći da je evidentno da su entiteti unutar grupe ''Premijer 2008" inferiornije u smislu tehničko-taktičkog ispoljavanja u odnosu na ostale grupe. Entiteti grupe ''Euro 2008", takođe su inferiornije od entiteta grupa sa kojima je utvrđena statistički značajna razlika. Moramo naglasiti da deo prekršaja čine i napadači kada izgube loptu blizu protivničkog gola. Takvo ponašanje igrača može biti i deo strategije u igri. Tako je (Engelbrecht, 2010) kod profesionalnih fudbalskih timova došao do podataka da je većina prekida igre napravljena od strane igrača napada u momentu kada izgube loptu. Većina prekida je napravljena kao rezultat pozicije ofsajd ili kao rezultat fizičkog prekršaja. Shodno dobijenim rezultatima, evidentno je da ukoliko počinjeni prekršaji nisu deo strategije, ekipe trebaju da rade na taktičkim postupcima koja će doprineti efikasnijoj organizaciji napada nakon prekida. Naravno sa prethodnim razmatranjem povezan je i tehničko-taktički kvalitet svakog igrača i sposobnost anticipacije. Treba naglasiti da brzina reakcije na terenu u igri nije određena samo prostim vremenom reakcije. Tu upravo dolazi do izražaja važnost sposobnosti predviđanja. Igrači sa boljom sposobnošću predviđanja imaju brže i preciznije reakcije bilo u napadu ili odbrani (Abernethy, Wann, & Parks, 1998).

Zaključak

Evidentno je da već duži niz godina ekipe iz Premijer lige BiH ne mogu da se kvalifikuju na neko od velikih nogometnih takmičenja. Na osnovu ovog istraživanja želimo da dođemo do informacija koje bi prvenstveno uticale na podizanje kvalitetan fudbalske igre u BiH. Vidimo da su ekipe grupe ''Premijer 2008" za manje efektivno vreme trajanja igre ostvarile prosečno isti broj udaraca prema protivničkom golu. Ekipe ove grupe su takođe ostvarile prosečno najveći broj prekršaja po jednoj utakmici. Kada uporedimo ove parametre možemo reći da su ekipe vrlo lako dolazile u poziciju za šutiranje. To nas navodi na pretpostavku da su odbrambeni igrači ostavljali igračima napada dovoljno vremena i prostora za organizaciju napada. Shodno tome trebalo bi više pažnje poklanjati grupnim i individualnim taktičkim postupcima kod ovih ekipa. Ekipe bi trebale sve tehničko taktičke elemente (odbrana, napad) koji se primenjuju u igri, usavršavati sa naglaskom na što veću situacionu varijativnost. Na taj način bi se igra sa taktičkog aspekta podigla na veći nivo. Igrači se na ovaj način upoznaju sa velikim brojem problemskih situacija koje se mogu javiti u igri a time se smanjuje i mogućnost iznenađenja od strane protivnika. Uočljiva je i velika frekvencija prekida igre unutar ovog ranga takmičenja. Kako smo i naglasili veliki broj prekida igre ne mora biti

nedostatak, ali bi se trebala veća pažnja posvetiti taktici standardnih situacija. Efikasnost realizovanih napada posle prekida ne ovisi samo od taktičkih već i od tehničkih kvaliteta. Stoga bi se podizanjem nivoa tehničke pripremljenosti igrača, stvorili povoljni uslovi i za podzanje kvaliteta i racionalizaciju taktičkih varijacija koje se primenjuju u igri. To je jedan od uslova podizanja nivoa ukupne kvalitete igre u ovom rangu takmičenja. Dobijeni rezultati navode nas na razmišljanje da je potrebno trenažni proces u školama fudbala usmeriti prema zahtevima vrhunskog sporta. To je moguće postići prilagođavanjem trenažnih sadržaja, koji bi u konačnici doveli do formiranja igrača koji mogu udovoljiti zahtevima današnjeg fudbala.

Na svakoj utakmici, broj mogućih situacija je gotovo beskonačan. Zbog toga je razumevanje strukture i logike rešavanja situacija u igri veoma važno. Razumevanje faza i podfaza toka igre postaje ključno i preduslov je za kontinuirano usavršavanje ukupne stvarne igračke kvalitete, kao i formiranja tima.

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UDK: 796.325.012.1
(Originalni naučni članak)

EKSPLOZIVNA SNAGA NOGU, BRZINA TRČANJA I SPOSOBNOST BRZE PROMENE PRAVCA ODBOJKAŠA

Sunčica Poček, Milenko Vuković
Fakultet za sport i fizičko vaspitanje, Novi Sad

Apstrakt

Odbojka je kompleksan sport u kom, u smislu motoričkih sposobnosti, dominira eksplozivna snaga, skočnost i sposobnost brze promene pravca. Uzorak ispitanika čine odbojkaši (N=21), sa Fakulteta sporta i fizičkog vaspitanja, (uzrasta 19.85 +/- 0.83 godina; visine 181.67 +/- 12.03 cm; težine 72.62 +/- 12.99 kg; trenažnog iskustva 6.76 +/- 2.21 godina). Cilj istraživanja bio je da se ispita veza između eksplozivne snage nogu, brzine trčanja i sposobnosti brze promene pravca. Sledeći testovi su izvedeni: Skok u blok, Skok smeč, Skok u dalj, Jelka test, T test, 93639m test i Trčanje 20m. Pirsonov koeficijent korelacije iz programa SPSS 15.0 je korišćen za obradu podataka. Rezultati su pokazali da su vertikalna skočnost, sprint i sposobnost brze promene pravca odbojkaša odvojeni, posebni kvaliteti. U trenažnoj praksi i prilikom testiranja ovih izuzetno važnih sposobnosti za uspešno izvođenje odbojkaša, mora biti poštovan princip specifičnosti.

Ključne reči: odbojka, CODS, VJ

Uvod

Odbojka je kompleksna sportska aktivnost u kojoj dominira alaktatni (fosfageni) anaerobni energetski sistem. Kinantropometrijski model odbojkaša obuhvata nadprosečnu telesnu visinu, eksplozivnu snagu, skočnost, brzinu i koordinaciju, osobine i sposobnosti neophodne u igri koja uključuje snagu i visinu u bloku, snagu i brzinu u smeču, izdržljivost tokom setova, kao i vrhunsko tehničko umeće. Na višem nivou veština, izvođenje je određeno brzinom i vertikalnom skočnošću. Fizički kapacitieti koji određuju izvođenje sportiste su eksplozivne-dinamične mišićne aktivnosti, skočnost i brzina u izvođenju naglih pokreta u više pravaca (Ciccarone, Croisier, Fontani, Martelli, Albert, Zhang, Kloes, 2008). Servis, prijem, dizanje, smeč, blok i odbrana polja su osnovni elementi igre, odlučujući aspekti pobede ili poraza na međunarodnim takmičenjima (Rodriguez-Ruiz, Quiroga, Miralles, Sarmiento, De Saa, & Garcia-Manso, 2011).

Mnogi sportovi, ograničeni dimenzijama terena, uključuju i pravolinijski sprint, ali mnogo češće ponavljajuće kratke sprinteve sa promenama pravca. Sposobnost postizanja brzine i promena pravca tokom tih sprinteva, sa što manjim gubitkom u brzini i kvalitetu izvođenja determiniše postignuće u kolektivnim sportovima, što je dokazano video analizama prilikom snimanja pokreta i kretanja igrača u situacionim uslovima i trajanjem određene aktivnosti tokom utakmice (time and motion analysis), potvrđivanjem baterija testova primenjenih na sportiste različitog nivoa i analizama trenera u sportovima kao što su ragbi(Docherty, Wenger,

& Neary, 1988; Meir, Newton, Curtis, Fardell, & Butler, 2001), hokej na travi (Keogh, Weber, & Dalton, 2003) i fudbal (Reilley, Wiliams, Nevill, & Franks, 2000).

U pokušaju da se objasne mogući faktori koji utiču na agilnost, Young, James, & Montgomery (2002) su predložili deterministički model agilnosti (Slika 1). Namera autora je bila da ukaže na glavne faktore koji određuju agilnost, i koji mogu biti primenjeni u sportovima koji uključuju brze promene pravca kao što je u većini kolektivnih sportova. Ovaj model naglašava moguć uticaj karakteristika mišića nogu na agilnost uključujući nekoliko drugih faktora.

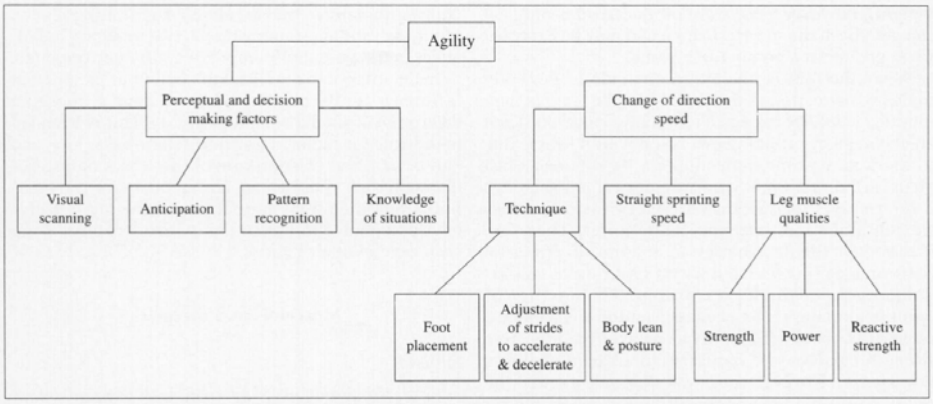

Fig. 1.—Model indicating the main factors determining agility. *Agility*: running speed with at least one change of direction performed in a competitive game. This may include being in possession of a ball or piece of equipment; *visual scanning*: ability to process visual information in competitive game; *anticipation*: prediction of an event in a game that influences the movements of a player in a game; *pattern recognition*: the ability to recognise patterns of play by an opposing team or player; *knowledge of situations*: knowledge of the probable movements of other players, based on previous experience of the game.

Sheppard i Young (2006) su predložili novu definiciju agilnosti u sport kao: "brz pokret celog tela sa promenom brzine ili pravca kao odgovor na stimulus". Ova nova definicija agilnosti prepoznaje obe komponenete kognitivnu i fizičku komponente uključenu u agilnost u sportu.

Skoro sva postojeća literatura koja je pokušala da opiše veze sa nekim merama agilnosti ili trening za poboljšanje agilnosti koristila je vremenski ograničen zadatak koji uključuje jednu ili više promena pravca, poznat kao brzina promene pravca. Na osnovu sličnih rezultata prezentovanih od strane Baker (1999), Buttifant, Graham i Cross (1999), Draper i Lancaster (1985), i Young, Hawken i McDonald (1996), testiranje brzine pravolinijskog trčanja izgleda da nije snažno povezano sa testiranjem trčanja sa promenama pravca na uzorku ispitanika igrača ragbija, fudbala i američkog fudbala.

Štaviše, i možda najvažnije, trening pravolinijskog sprinta ne dovodi do poboljšanja izvođenja sprinta sa promenama pravca (Young, McDowell, & Scarlett, 2001).

Na osnovu rezultata Djevalikian (1993), Webb i Lander (1983) i Young i sar., (1996, 2002), ali vidi Negrete & Brophy, 2000, mere koncentrične jačine i snage javljaju se kao slabi prediktori brzine promene pravca. Može biti da je zapažena razlika između navedenih istraživanja priroda zadatka korišćena pri oceni brzine promene pravca. Negrete i Brophy (2000) su koristili složeni zadatak koji se izvodi u više pravaca na kraćim rastojanjima, dok su ostali (Djevalikian, 1993; Webb & Lander, 1983; Young et al., 1996, 2002) koristili testove sprinta koji uključuju poneki pravolinijski sprint i manji broj promena pravca tokom sprinta.

Čini se da mere jačine i snage imaju uticaj na brzinu promene pravca (Negrete & Brophy, 2000), ali da ova veza može biti primetna u slučaju poređenja zadataka koji uključuju brzinu promene pravca na kraćim rastojanjima.

Imajući ovo na umu, cilj ove studije bio je da istraži povezanost između brzine promene pravca, brzine trčanja i mera eksplozivne snage donjih ekstremiteta odbojkaša.

Metod

Uzorak ispitanika

Odbojkaši i odbojkašice (N=21), studenti Fakulteta sporta i fizičkog vaspitanja (uzrast 19.85 +/- 0.83 godina; visina 181.67 +/- 12.03 cm; težina 72.62 +/- 12.99 kg; trenažni staž 6.76 +/- 2.21 godina), su angažovani za ovo istraživanje. Ispitanici su bili upoznati sa postupcima koji su uključeni u testiranje. Svi ispitanici su dobili jasno objašnjenje studije, nakon čega je dobijena pisana saglasnost za testiranje.

Postupak testiranja

Kao uobičajen protokol testiranja za ovu grupu, ispitanici su obavili tipično zagrevanje pre samog testiranja. Ukratko, ovo zagrevanje sastojalo se od 10 minuta opšteg dela (lagano trčanje sa promenom pravca i ubrzanjem), praćeno sa 10 minuta dinamične aktivnosti uz pojačan intenzitet i brzinu izvođenja (preskoci, zamasi nogama, zamasi rukama), sa 3-5 minuta odmora bez izvođenja statičkog istezanja neposredno pred testiranje. Ispitanici su ponovo upoznati sa protokolom testiranja.

Ispitanici su izveli po tri pokušaja svakog testa, a najbolje izvođenje je bilo zadržano u analizi.

Uzorak mernih instrumenata

Uzorak mernih instrumenta sastojao se od sedam motoričkih testova: Skok blok (SB), Skok smeč uz tri koraka zaleta (SS), Skok u dalj (SD), Jelka test (JT), T test (TT), 93639 m test (93639m) i Trčanje 20 m (20m).

Obrada podataka

Prikupljeni podaci podvrgnuti su statističkoj analizi programom SPSS 15.0. Deskriptivna statistika je prikazana u Tabeli 1 za sve varijable. Za utvrđivanje povezanosti među varijablama primenjen je Pirsonov koeficijent korelacije (Tabela 2).

Rezultati i diskusija

Deskriptivna statistika odbojkaša i odbojkašica prikazana je u Tabeli 1. Tabela pokazuje da je indeks uhranjenosti u okviru granica normale (22.04), tako da ispitanici iz ove studije pripadaju kategoriji prosečno uhranjene populacije. Vrednosti indeksa telesne mase u literaturi za odbojkašice različitog uzrasta, nacionalnosti i nivoa takmičenja varira između 20.5 kg/m^2 i 22.5 kg/m^2. Srednja vrednost indeksa telesne mase u ovoj studiji (21.41 kg/m^2) odgovara vrednostima objavljenim u skorašnjim istraživanjima 22.1kg/m^2, 20.5kg/m^2, 21.9kg/m^2 (Gualdi-Russo i Zaccagni, 2001; Papadopoulou, Gallos, Paraskevas, Tsapakidou i Fachantidou, 2002; Malousaris, Bergeles, Barzouka, Bayios, Nassis, i Koskolou, 2008). Iako je u poslednje dve decenije mezomorfni somatotip bio primarna komponenta konkurentnih odbojkašica, u najnovijim studijama javlja se preovlađujući ektomorfni somatotip na uštrb mezomorfnog.

Telesna visina se smatra determinišućim faktorom u odbojci, zajedno sa vezom u odnosu na telesnu težinu, koristi se kao kriterijum u selekciji talentovanih odbojkaša. Srednja vrednost odbojkaša i odbojkašica u našoj studiji bila je 181.67 +/- 12.03 cm, sa rasponom od 161 cm

do 203 cm. Poredeći odbojkaše u ovom istraživanju sa drugim muškim i ženskim timovima, ispitanici iz našeg istraživanja su znatno inferiorniji kada je vrednost telesne visine u pitanju (Gualdi-Russo i Zaccagni, 2001; Papadopoulou i sar., 2002; Malousaris i sar., 2008; Sheppard, Cronin, Gabbett, McGuigan, Etxebarria i Newton 2008;Carvajal, Betancourt, Leon, Deturnel, Martinez, Echevarria, Castillo i Serviat, 2012), što može biti objašnjeno različitim nivoom takmičenja prilikom poređenja, i/ili selekcijom tokom trenažne prakse. Posebno, vrednosti telesne visine u ovoj studiji su niže od onih zapaženih u literaturi u ocenjivanju odbojkašica takmičarskog nivoa. Telesna visina i telesna težina odbojkaša i odbojkašica reprezentacije Srbije iz Londona 2012 su (aritmetička sredina, N=20), 199.75 cm, 84.55 kg; odnosno 186.45 cm, 71.95 kg, što je u saglasnosti sa savremenim zahtevima odbojkaškog nadmetanja. Očigledne razlike zapažene u vrednostima TV i TM između uzoraka su očekivane, budući da igrači reprezentacije Srbije i ispitanici iz A1 Lige (Gualdi-Russo & Zaccagni, 2001; Papadopoulou et al., 2002; Malousaris et al., 2008; Sheppard et al., 2008; Carvajal et al., 2012), prolaze strožije procedure selekcije koja je praćena visoko profesionalnim uslovima i tretmanu, savetima koji se tiču treninga i ishrane.

Na osnovu ovih rezultata, možemo rezimirati, da ispitanici iz naše studije, po svojim antropometrijskim karakteristikama, jasno pripadaju populaciji studenata Fakulteta sporta i fizičkog vaspitanja i blizu prosečnih vrednsti njihovih 20godišnjih vršnjaka (Mihajlović, Petrović & Šolaja, 2011; Rakić, 2009).

Tabela 1. Deskriptivna statistika (AS – aritmetička sredina, SD-standardna devijacija)

VARIJABLE	ISPITANICI (N=21)			
	AS	SD	MIN	MAX
Uzrast (decimalne godine)	19.85	0.83	18.94	21.89
Trenažni staž	6.76	2.21	3	12
Telesna visina (cm)	181.67	12.03	161	203
Telesna težina (kg)	72.62	12.99	54	100
Indeks telesne mase (kg/m^2)	22.04	2.35	18.9	27.4
Skok u blok (cm)	271.53	19.76	237	311
Skok smeč (cm)	287.68	22.74	245	318
Skok u dalj (cm)	234.17	37.14	164	313
Jelka test (0,1s)	35.60	3.79	27.69	41.45
T test (0,1s)	10.36	0.56	8.95	11.91
93639 m (0,1s)	7.79	0.40	7.11	8.52
Trčanje 20m (0,1s)	3.60	0.30	3.02	4.11

Koeficijenti korelacije koji opisuju veze među testovima prikazani su u Tabeli 2. Varijable koje predstavljaju sposobnost brzine promene pravca T test i 93639m su statistički značajno povezani jedino međusobno (r=0.63; p=0.00) i u odnosu sa Jelka testom i testom Skok u dalj. Jelka test je test sposobnosti brzine promene pravca ali sa drugačijim energetskim zahtevima u poređenju sa T testom i 93639m. Testovi različitog trajanja mogu biti podvrgnuti uticajima

vezanim za kapacitet energetskog sistema pre nego za procenu sposobnosti brzine promene pravca. Složenost svakog testa može biti kategorisana u odnosu na broj zahtevanih promena pravca ili po tipu pokreta i sila koje su primarno korišćene tokom testa. Određeni testovi mogu imati mali broj promena pravca (L test, T test, 93639m test), dok drugi (Jelka test, Illinois test) mogu uključivati mnogo više promena pravca. Svaka promena pravca zahteva zaustavljanje praćeno generisanjem sile da bi se kretanje nastavilo sa što manjim gubitkom brzine, što opet može naglasiti važnost ekscentrično-koncentrične sposobnosti mišića za razvoj sile i izdržljivosti sa porastom broja promena pravca. Primena sile tokom stvarne promene pravca je mnogo teža za utvrđivanje zbog toga što ona u mnogome zavisi od individualne tehnike. Međutim, prihvaćeno je da su bočne sile uključene u određene promene pravca kao što je slučaj u T testu kada promeni pravca prethodi korak – dokorak (Brughelli, Cronin, Levin, & Chaouachi, 2008). U pogledu međusobne povezanosti testova brzine promene pravca, Draper i Lancaster (1985) su pronašli značajnu korelaciju između Ilinois testa i testa napred – nazad (r=0.63) i testa napred – nazad i 5-0-5 testa (r=0.51), ali bez značajne korelacije između Ilinois testa i 5-0-5 (0.25). Istraživači su sugerisali da su rezultati većine testova promene pravca nezavisni jedan od drugog, kao i da je ovo posledica dužine i složenosti svakog od testova promene pravca. U našoj studiji povezanost testova brzine promene pravca je bila statistički značajna, ali je interesantno da su T test i 93639m (koji su kraće trajali i sa manjim brojem promena pravca u odnosu na Jelka test), bili statistički značajno povezani jedino sa testom Skok u dalj (horizontalna primena sile), dok je Jelka test bio u statistički značajnoj vezi sa svim primenjenim testovima, što može biti opravdano razlikama u pravcu primene sile i/ili energetskim zahtevima kao što je ranije rečeno.

Ako posmatramo model opisan na sl. 1, primetićemo da su Sheppard i Young predložili da su brzina pravolinijskog trčanja i karakteristike mišića nogu važni činioci sposobnosti promene pravca. U našem istraživanju brzina pravolinijskog trčanja (Trčanje 20m) je statistički značajno povezana sa svim testovima osim onih za brzinu promene pravca T-test (r=0.15) i 93639m test (r=0.29), dok je sa Jelka testom veza bila statistički značajna (r=0.68). U literaturi, većina korelacija između brzine promene pravca i brzine pravolinijskog trčanja se može opisati kao umerena (r=0.3-0.5). Brughelli i sar. (2008) su zapazili najslabije korelacije između testa Trčanje 20m i 5-0-5 testa agilnosti (r=0.055) a najjače statistički značajne veze kod žena između T testa i sprinta (r=-0.63 to -0.69). U istraživanju Young, James i Montgomery (2002) naznačeno je da sa povećanjem promene u pravcu od pravolinijskog sprinta prema 20^0, 40^0 do 60^0, ispitanicima je bilo potrebno više vremena da pretrče rastojanje od 8m. Sheppard i Young (2006) su rekli da generalno, što je više promena pravca, manji je transfer sa brzine pravolinijskog trčanja na promene pravca, tj. da je gubitak u brzini veći što je više promena pravca u odnosu na pravolinijski sprint. Na prvi pogled mogli bismo da zaključimo kako ovo izgleda da nije slučaj, obzirom na rezultate navedene u ovom istraživanju. Međutim, imajući u vidu da su različite distance i vreme trajanja za izvođenje 3 testa za procenu brzine promene pravca trčanja, jasne su i razlike u značajnosti povezanosti sa testom pravolinijskog trčanja. Naime, u izvođenju Jelka testa tokom prosečnih 35.6 s postoji veći broj dužih deonica tokom kojih može da dođe do izražaja brzina pravolinijskog trčanja, dok kod testova T test i 93639m za kraće vreme i na manjim distancama dolazi do promene pravca trčanja što je i slučaj u primeru istraživanja Sheppard i Young (2006). U smislu zajedniške varijanse između varijabli, izgleda da su brzina pravolinijskog trčanja i brzina promene pravca, uglavnom različite motoričke sposobnosti

Najčešća vrsta skoka korišćena u predikciji sposobnosti promene pravca je vertikalan skok (Brughelli i sar., 2008). U našoj studiji koristili smo specifične skokove iz odbojke Skok u blok (koji je zapravo ekscentrično-koncentrična akcija mišića nogu izvedena iz osnovnog stava

za blok) i Skok smeč sa tri koraka zaleta uz zamah rukama. Dodatno, koristili smo test Skok u dalj za procenu eksplozivne snage nogu, skok koji se vrednuje horizontalnom distancom. Intuitivno, izgleda da bi bilo prikladnije koristiti skokove koji uključuju ne samo vertikalnu reaktivnu silu podloge već i horizontalnu reaktivnu silu podloge, budući da je većina ljudskog kretanja kombinacija ova dva tipa sila. Rezultati našeg istraživanja pokazuju da je samo test Skok u dalj u statistički značajnoj vezi sa testovima brzine promene pravca, dok su SS i SB bili u statistički značajnoj vezi jedino sa Jelka testom (r=-0.6). Djevalikian (1993) je izvestio o slabim (r=0.15) i korelacijama bez statističke značajnosti između mera snage (izvođenje vretikalnih skokova za 15s) i testa brzine koji uključuje sedam promena pravca "boomerang run". Web i Lander (1983) su koristili po jedan vertikalni skok i skok u dalj u poređenju sa testom brzine promene pravca. Ponovo, dobijene su slabe korelacije bez statističke značajnosti kako za Skok u dalj (r=-0.35) tako i za vertikalni skok (r=-0.19) u izračunavanju povezanosti sa testom za brzinu promene pravca L run. Marković (2007), je izvestio o slabim korelacijama između testova Skok u dalj i tri testa brzine promene pravca (r=-0.12 do -0.27). Peterson i sar., 2006, koristeći Skok u dalj, našli su da je skok u horizontalnoj ravni statistički značajno povezan sa T testom u oba uzorka, kod muškaraca (r=-0.613) i žena (r=0.713). Konačno, Negrete i Brophy (2000) izvestili su o značajnoj korelaciji (r=-0.65) između testa Skok u dalj sa jedne noge i testa brzine promene pravca "diamond-shaped test". Ova mera horizontalnog skoka bila je veća nego veze vertikalnog skoka i testa brzine promene pravca (r=-0.38). Štaviše, Peterson i sar., 2006, su potvrdili značajnije veze horizontalnih skokova i testova brzine promene pravca nego one zapažene u slučaju vertikalnih skokova. Na osnovu rezulta, uslovno rečeno skokovi koji uključuju kombinaciju vertikalne i horizontalne reaktivne sile podloge mogu bolje predvideti sposobnost promene pravca.

Tabela 2. Koeficijenti korelacije primenjenih testova

	1	**2**	**3**	**4**	**5**	**6**	**7**
1. Skok u blok	1.00						
2. Skok smeč	0.94**	1.00					
3. Skok u dalj	0.79**	0.80**	1.00				
4. Jelka test	-0.60**	-0.60**	-0.74**	1.00			
5. T-test	-0.10	-0.12	-0.44*	0.46*	1.00		
6. 93639 m test	-0.29	-0.29	-0.60**	0.63**	0.63**	1.00	
7. Trčanje 20m	-0.75**	-0.66**	-0.75**	0.68**	0.15	0.29	1.00

*p□0.02; **p□0.00

Zaključak

Mnogo različitih testova korišćeno je u proceni izvođenja brzine promene pravca i sve više se kontiuirano razvija sa ciljem da istraživači procene specifične zahteve sporta u kom se primenjuju. Postoji mnoštvo tesova koji se koriste. Problem kod ovih testova je što oni mogu sadržati raznovrsne obrasce pokreta, kao što su trčanje napred, trčanje unazad, bočno kretanje korak-dokorak, slalom kretnje i ukršteni koraci. Trajanje i intenzitet, broj promena pravca, kao i ugao pod kojim se promena vrši su činioci koji znatno variraju među testovima za procenu brzine promene pravca. Potrebno je identifikovati specifične obrasce kretanja uspešnih sportista u konkretnom sportu.

U ovoj korelacionoj analizi, glavni zaključci su da je sposobnost promene pravca varira zavisno od trajanja i intenziteta, broja promena pravca i ugla pod kojim se promena vrši u testovnoj situaciji. Ova sposobnost je nezavisna od vertikalne skočnosti i brzine pravolinijskog trčanja a povezana sa horizontalnom skočnosti (test Skok u dalj). Trening i testiranje ovih sposobnosti odbojkaša bi trebao biti visoko specifičan. Posmatranje karakteristika mišićnih grupa nogu kao jedino zaslužne za pokrete promene pravca kretanja predstavlja pojednostavljeno objašnjenje. Sposobnost promene pravca se mora sagledati kao funkcija celokupnog kinetičkog lanca uz adekvatnu stabilnost trupa, pre nego samo kao funkcija nogu.

Treneri i naučnici su zainteresovani za utvrđivanje efekata različitih programa treninga na varijable od interesa, u ovom slučaju brzinu promene pravca kretanja. Da bi to postigli, promene u karakteristikama mišića nogu (jačina, snaga i reaktivna jačina) i brzine pravolinijskog trčanja trebalo bi da budu praćene longitudinalno tokom trenažnih intervencija. Rezultati korelacionih analiza se moraju interpretirati uz rezervu, obzirom da govore o povezanosti a ne uzročno-posledičnim interakcijama određenih varijabli i sposobnosti promene pravca kretanja.

Dalja istraživanja su potrebna, nadamo se da će one varijable koje snažno utiču na sposobnost promene pravca biti razjašnjene i kao rezultat, pružiti čitaocu uvid i usmeriti pažnju na one varijable koje bi trebalo procenjivati, razvijati i pratiti.

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UDK:796/799:159.923.2
(Originalni naučni članak)

RAZLIKE U NEKIM KARAKTERISTIKAMA LIČNOSTI IZMEĐU ODBOJKAŠA I FUDBALERA

Zoran Savić[1], Slađan Karaleić[1], Goran Nešić[2]

[1]Fakultet za sport i fizičko vaspitanje Univerziteta u Prištini
[2]Fakultet sporta i fizičkog vaspitanja Univerziteta u Beogradu

Apstrakt

Čovekovu ličnost, sposobnost i sve ostale karakteristike, upoznajemo naučnim pristupom, njihovu međusobnu povezanost, kao i sastav brojnih činilaca antropološkog statusa koji su neminovni za uspeh u sportu. Veoma je važno, da prilikom najranije sportske orijentacije dece, usmeriti ih da se bave onim sportom koji odgovara njihovom psihosomatskom statusu i u kojem će postizati najbolje rezultate. Merenje faktora koji su od značaja za sportski uspeh, u kineziologiji i antropologiji, je nemoguće direktno izvršiti već na osnovu njegovih indikatora, tj. reakcija, zaključujemo njihovu egzistenciju. Iz navedenog proizilazi da je nauka (kineziologija, antropologija i druge), odgovorna da pronalazi metode koji omogućavaju utvrđivanje faktora koji su bitni za postizanje uspeha u sportu. Ovo istraživanje treba da pomogne rešavanju nekih od ovih problema, i ono treba da objektivno utvrdi konativni status odbojkaša i fudbalera istog ranga takmičenja i da pruži određeni doprinos u poboljšanju ovih igara.

Ključne reči: Konativne karakteristike, dimenzije ličnosti, regulativni mehanizmi, fudbaleri, odbojkaši

Uvod

Sport je aktivnost u koju se po pravilu uključuju osobe koje pozitivno valorizuju i preferiraju takmičarskoj situaciji i koje su u tu svrhu sposobne i spremne podneti odgovarajuća fizička i psihička opterećenja.

Neadekvatan izbor sadžaja i pogrešno usmeravanje treninga, najčešće je uzrokovano nepoznavanjem strukture motoričkih, funkcionalnih, kognitivnih, konativnih i drugih faktora koji limitiraju određena sportska dostignuća, kao i nepoznavanje kvalitativnih karakteristika međusobne povezanosti tih faktora. Otuda je veoma čest slučaj da se previše ili sasvim nepotrebno radi na razvoju ili usavršavanju jedne ili druge antropološke osobine koja nije uvek značajna za datu sportsku aktivnost, ili je čak i kontradiktorna za razvoj neke druge, za tu aktivnost mnogo značajnije osobine ili sposobnosti. Ovakav pristup neminovno dovodi do stagnacije razultata i smanjuje ukupnu efikasnot treninga.

Da bi se objasnila bilo koja motorička aktivnost, moraju se uzeti u obzir konativne karakteristike, odnosno modaliteti čovekovog ponašanja.

Konativne karakteristike su specifične relativno stabilne i nepromenljive strukture psihičkih osobina nekog pojedinca, u kojoj svaka osobina zauzima posebno, strukturom

određeno mesto (*M. Zvonarević, 1975*). To su latentne strukture od kojih zavise modaliteti reakcija u odnosu na sebe i druge ljude, odnosno društva u celini, a koje proizilaze iz stepena ingeligencije ega u dinamičkoj komunikaciji svakog pojedinca sa okolinom. Sa kibernetičkog stanovišta konativne karakteristike u okviru biološkog sistema se mogu shvatiti kao svrsishodno i adaptivno ponašanje koje je omogućeno integralnim funkcionisanjem CNS-a, uz dominantnu manifestaciju tonskih regulativnih mehanizama (*S. Horga, 1979*).

Otuda je u ovom radu akcenat stavljen na to, da se iz ukupnog antropološkog prostora izuči struktura konativnih karakteristika, kod sportista koji preferiraju različitim sportskim aktivnostima, koji se takmiče u istom rangu.

Problem, predmet i cilj istraživanja

Utvrđivanje razlika između konativnih dimenzija odbojkaša i fudbalera sa područja Kosova i Metohije koji se takmiče u istom rangu, je problem ovog rada. Predmet ovog istraživanja su karakteristike ličnosti odbojkaša i fudbalera.

Pred istraživanje je bio postavljen generalni cilj, a to je utvrđivanje razlika nekih konativnih karakteristika na navedenom uzorku. Pred istraživanje se može postaviti sledeći operativni zadatak, u cilju realizacije generalnog cilja, i to: utvrditi razlike u karakteristikama ličnosti između skupa fudbalera i skupa odbojkaša koji se takmiče u istom rangu takmičenja.

Hipoteze

Iz izloženog problema i predmeta istraživanja kao i formilisanog generalnog cilja i operativnih zadataka u istraživanju se može postaviti sledeća hipoteza:

- u strukturi ličnosti između skupa odbojkaša i skupa fudbalera, koji se takmiče u istom rangu, očekuju se statistički značajne razlike.

Metod rada

Uzorak ispitanika

Uzorak ispitanika definisan je kao uzorak populacije aktivnih odbojkaša i fudbalera sa područja Kosova i Metohije koji se takmiče u srpskoj ligi - grupa jug.

Iz ukupne populacije formiran je uzorak ispitanika metodom namernog izbora. Ovo je učinjeno s obzirom na organizaciju takmičenja i rad klubova. Istraživanje je sprovedeno na uzorku od 140 ispitanika, od čega 65 odbojkaša i 75 fudbalera.

Posebni uslovi pri utvrđivanju uzorka bili su:

- starost ispitanika, koja je određena kao hronološka starost od 18 do 30 godina;
- da su ispitanici na dan testiranja zdravi i bez izrazitih psihičkih aberacija;
- da su ispitanici muškog pola;
- da su ispitanici obuhvaćeni redovnim trenažnim procesom;
- da su ispitanici standardni u ekipi.

Uzorak varijabli

Za procenu konativnih dimenzija ličnosti izabrani su merni instrumenti tako da mogu da pokriju dimenzije modela funkcionisanja konativnih regulativnih mehanizama. Model pretpostavlja hijerarhijsku organizaciju mehanizama za regulaciju i kontrolu modaliteta ponašanja, a konstruisan je tako da se izbegne veštačka dihotomija na normalne i patološke konativne faktore.

Izabrani su sledeći merni instrumenti:
- regulator aktiviteta (EPSILON)
- regulator organskih funkcija (HI)
- regulator reakcija odbrane (ALFA)
- regulator reakcije napada (SIGMA)
- sistem za koordinaciju regulativnih funkcija (DELTA)
- sistem za integraciju regulativnih funkcija (ETA).

Tehnika merenja

Konativne varijable

Za procenu efikasnosti sistema za regulaciju aktiviteta (EPSILON) upotrebljeni su sledeći testovi:
- M16,EX1,EX2,CF, CH.

Za procenu efikasnosti sistema za regulaciju i kontrolu organskih funkcija (HI) upotrebljeni su slede}i testovi:
- G11, K10, H13, E8, Z9.

Za procenu efikasnosti sistema za regulaciju i kontrolu reakcije odbrane (ALFA) upotrebljeni su sledeći testovi:
- A1,O3,S5,F2,C.

Za procenu efikasnosti sistema za regulaciju i kontrolu reakcije napada (SIGMA) upotrebljeni su sledeći testovi:
- N14,T15, SG3, CE SP3,

Za procenu efikasnosti sistema za koordinaciju regulativnih funkcija (DELTA) upotrebljeni su sledeći testovi:
- L17, P18,DL2, D6, I7, SG2.

Za procenu efikasnosti sistema za integraciju regulativnih funkcija (ETA) upotrebljrni su sledeći testovi:
- DL1, DL3, SP5, CC, CQ4

Metode obrade rezultata

Vrednost nekog istraživanja ne zavisi samo od uzorka ispitanika i uzorka varijabli, odnosno od vrednosti osnovnih informacija, već i od primenjenih postupaka za transformaciju i kondenzaciju tih informacija.

Za utvrđivanje razlika pojedinih segmenata psihosomatskog statusa kod odbojkaša i fudbalera različitog ranga takmičenja bila je primenjena kanonička diskriminativna analiza. Kanonički diskriminativni model se interpretira kao poseban tip faktorske analize koji sadrži komponente koje najbolje razdvajaju grupe u prostoru varijabli. Generalna statistička značajnost diskriminacije grupa ispitanika određuje se pomoću F-testa. Diskriminativne varijable se dobijaju na osnovu diskriminacijskih koeficijenata koji zavise od varijanse svake varijable iz primenjenog sistema varijabli i imaju originalne rezultate. Diskriminativna jačina primenjenih varijabli određuje se pomoću ***Wilk'sove*** lambde. Nivo značajnosti diskriminativne jednačine određuje se ***Bartlettovim***c^2 testom. Vrednost c^2 testa se testira uz

određeni broj stepeni slobode. Svaka diskriminativna varijabla objašnjava određeni procenat varijabiliteta u diskriminacijskom prostoru primenjenih varijabli. Podaci su obrađeni u Centru za multidisciplinarna istraživanja Fakulteta za sport i fizičko vaspitanje Univerziteta u Prištini.

Rezultati i diskusija

Razlike u nekim karakteristikama ličnosti između odbojkaša i fudbalera

Tabela 1. KANONIČKE DISKRIMINATIVNE FUNKCIJE

Fcn	Eigen V.	Pct of Var	Cum Pct	Can Corr	Wilks L	X^2	DF	Sig
1*	.05	100.00	100.00	.22	.94	7.06	3	.06

Tabela 2. MATRICA STRUKTURE

	FUNC1
ODBOJKAŠI	-.24
FUDBALERI	.21

Tabela 3. CENTROIDI GRUPA

	FUNC1
ETA	.65
DELTA	.44
HI	.33
SIGMA	-.30
EPSILON	-.18
ALFA	.11

Povezanost između vrste sporta i ličnosti, može da egzistira na nekoliko različitih načina, gde prva pretpostavka govori o karakterističnoj strukturi ličnosti koja motiviše pojedinca pri izboru neke sportske discipline, a ujedno je i bitan uslov perzistencije i uspeha u tom sportu. Druga pretpostavka jeste da takva određena struktura konativnih karakteristika, ne postoji, ali bavljenjem određenim sportskim aktivnostima dolazi do modifikacije strukture konativnih karakteristika u, za taj sport, adekvatnom smeru. Sportska ličnost koja pokreće inicijalno bavljenje sportom, je treća mogućnost, ali učešćem i selekcijom unutar različitih sportskih disciplina dolazi do modeliranja "spotske ličnosti" u ličnost karakterističnu za pojedinu sportsku disciplinu. Međutim, moguće je takođe da ne postoje posebni sklopovi konativnih dimenzija koji određuju izbor neke sportske aktivnosti, niti participacija u njoj utiče na formiranje drugačijeg sklopa ličnosti.

Veliki broj istraživanja ukazuje, mada ne uvek, na prisutnost razlika u strukturi ličnosti sportista koji pripadaju različitim sportskim disciplinama. Naime, obzirom na veoma različita

obeležja pojedinih sportskih disciplina, logično je da se kao i u nizu drugih aktivnosti, postavljaju i različiti zahtevi u pogledu strukture konativnih osobina koje se njima bave. Zato, donekle začuđuje da rezultati istrazivanja ličnosti sportista nisu još jače istakli ove razlike između pojedinih sportskih disciplina. Međutim, budući da se većina ovih istraživanja svodila na izolovano posmatranje pojedinih karakteristika ličnosti, procenjivanih na veoma različite načine, nije, niti je mogla biti dobijena slika o konativnim karakteristikama sportista različitih sportskih disciplina. I drugi metodološki nedostaci bili su prisutni u ovim istraživanjima, naročito nedostaci u načinu formiranja uzorka ispitanika, pa i metodama obrade rezultata.

Rezultati kanoničke diskriminativne analize između grupa ispitanika uzetih u našem istraživanju pokazuju da nije dobijena statistički značajna razlika između posmatranih konativnih dimenzija jer je značajnost izolovane diskriminativne dimenzije značajna na nivou p=.06. Razlog za tako dobijene rezultate treba tražiti u uzorkovanju, jer se radi o sportistima niskog takmičarskog nivoa kod kojih trenažni proces nije doveo do značajnih promena konativnih regulativnih mehanizama ili je imao sličan obim uticaja na oba uzorka tretiranih sportista.

Zaključak

Cilj istraživanja bio je, kao što je to već ranije naznačeno da se izvrši identifikacija i utvrdi latentna struktura konativnih dimenzija na navedenom uzorku.

U tu svrhu primenjena su šest merna instrumenata za procenu konativnih karakteristika.

Program merenja sproveden je na uzorku od 140 ispitanika – aktivnih takmičara u dve sportske igre koji se takmiče u republičkom rangu Srpske lige na području Kosova i Metohije - grupa jug, muškog pola uzrasta od 18 do 30 godina. Celi uzorak bio je podeljen na dva subuzorka, od kojih je prvi definisan kao skup 65 odbojkaša. Drugi subuzorak definisan je kao skup od 75 fudbalera. Sprovedena je diskriminativna analiza sa svrhom da se utvrde razlike između subuzorka odbojkaša i fudbalera u istim dimenzijama. Na osnovu analiziranih i interpretiranih podataka mogu se utvrditi, odnosno formirati sledeći zaključak:

- U diskriminativnom postupku, sprovedene analize pokazale su da se subuzorci sportista međusobno značajno ne razlikuju. Na osnovu dobijenih rezultata postavljena hipoteza H1 se u potpunosti odbacuje.

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UDK: 338.487:659.1(497.1)
(Pregledni članak)

MARKETING I PROMOCIJA SPORTSKO REKREATIVNIH SADRŽAJA U RAZVOJU TURIZMA CRNE GORE

Bojan Rajak[1], Ranko Marijanović[1], Stefan Marijanović[2], Dragan Klarić[3]

[1]Fakultet za menadžment u sportu, Beograd
[2]Fakultet organizacionih nauka, Beograd
[3]Fakultet za menadžment, Herceg Novi

Apstrakt

Rad predstavlja trenutno stanje promovisanosti sportsko rekreativnih sadržaja u turizmu Crne Gore. Poseban značaj dat je analizi web sajta NTO CG, kao trenutno najvećoj bazi podataka sportsko rekreativnih sadržaja u turizmu Crne Gore. Pored navedenog, na osnovu uporedne analize za 2012.god. i 2013.god., rad sadrži i statističke podatke o broju ponuda sporta i rekreacije u turizmu Crne Gore za sve tri regije posebno (severna, središnja i primorska).

Ključne reči: promocija, sport, rekreacija, turizam, NTO CG

Uvod

Na turističkom tržištu sve više raste potražnja za sportsko rekreativnim sadržajima kod odmora. Destinacije koje sadrže uslove za održivost sportsko rekreativnih sadržaja u prirodnim uslovima, bolje se kotiraju na turističkom tržištu. Crna Gora ima velike prirodne potencijale za razvoj kako sportkog, tako i brojnih drugih oblika turizama, a polazeći od prostornih komparativnih prednosti za njihov razvoj, na raspolaganju nalaze se sledeće tri regije:

1. Severna regija (opština Plužane, Kolašin, Bijelo Polje, Berane, Šavnik, Žabljak, Pljevlja, Mojkovac, Andrijevica, Plav i Rožaje),
2. Središnja regija (opština Podgorica, Nikšić, Danilovgrad i Cetinje), i
3. Primorska regija (opština Herceg Novi, Kotor, Bar, Tivat, Budva i Ulcinj).

Osnovni razvojni dokument s kojim Crna Gora raspolaže kada je u pitanju turizam jeste inovirani Master plan, odnosno Strategija razvoja turizma Crne Gore (Crna Gora – Ministarstvo turizma i zaštite životne sredine, Strategija razvoja turizma Crne Gore do 2020. godine, Ministarstvo turizma i zaštite životne sredine Crne Gore, Podgorica, 2008), izrađeni 2001., a inovirani 2008.godine.[1]

Marketing Crne Gore kao turističke destinacije je u nadležnosti nacionalne turističke organizacije države – Nacionalne turističke organizacije Crne Gore. Ova organizacija obavlja

1 Unković S. i Zečević B. (2009), „Ekonomika turizma“, Ekonomski fakultet, Beograd, str. 451

poslove vezane za promociju Crne Gore kao turističke destinacije, analizira kretanja na turističkom tržištu i organizuje istraživanja turističkog tržišta, obavlja različite aktivnosti na prikupljanju informacija, koordinacija između ključnih nosilaca turističke ponude, zadužena je za eventualno osnivanje turističkih predstavništva u inostranstvu i drugo.[2]

Nacionalna turistička organizacija Crne Gore, kao kvazidržavni organ, finansira se iz budžeta Crne Gore, kao što je, uostalom, slučaj i sa nacionalnim turističkim organizacijama drugih zemalja sveta, poput francuskog *Maison de la France,* britanskog *VisitBritain*, nemačke *Deutche Zentrale fur Tourismus* ili italijanskog *Ente Nazionale Italiano per il Tourismo*, predstavlja kljućnu polugu Crne Gore u pogledu planiranja i sprovođenja njenih marketinških aktivnosti kao turističke destinacije. Neophodnost njenog postojanja i funkcionisanje proizilazi iz nemogućnosti privatnog sektora da samostalno na inostranom tržištu promoviše svoje proizvode, kao i nemogućnosti da se u okviru privatnog sektora generišu potrebni resursi za istraživanje tržišta i druge strateške aktivnosti marketinga koje zahtevaju značajna sredstva. Konačno, Nacionalna turistička organizacija Crne Gore je neophodna jer je potrebno da se koordiniraju aktivnosti privatnog sektora u cilju kreiranja adekvatnog destincijskog turističkog proizvoda ovih zemalja.[3]

Predmet rada i metode

Predmet istraživanjapredstavlja promovisanost sportsko rekreativnih sadržaja u turizmu Crne Gore. Cilj istraživanja jeste da se ukaže na stanje dostupnosti informacija o ovim sadržajima preko zvanične prezentacije NTOCG.

U radu biće korišćene sledeće naučno-istraživačke metode: deskripcije, eksplikacije, komparacije, metod statističke obrade podataka, metod analize sadržaja, metod prikaza (putem teksta, slika i tabela).

Rezultati i diskusija

Za NTOCG možemo reći da teži objedinjenju svih sportsko rekreativnih ponuda u turizmu Crne Gore, i trenutno predstavlja najveću bazu podataka ove vrste u Crnoj Gori.

Na pitanje: „da li baza podataka sajta NTOCG, predstavlja ukupan broj sportsko rekreativnih sadržaja u turizmu Crne Gore?" – odgovor bi glasi ne. Putem internet pretrage, može se naići na sportsko rekreativne ponude u turizmu Crne Gore koje se ne nalaze i na zvaničnom sajtu NTOCG. Broj tih ponuda je manji od 10%.

Na osnovu ovoga možemo reći da većina organizatora sportske rekreacije u turizmu Crne Gore prepoznala je značaj baze podataka NTOCG, i da su njihove ponude uglavnom našle mesto u istoj. Stoga smo izvršili detaljan pregled sportsko rekreativnih ponuda putem internet pretrage zvaničnog sajta Nacionalne turističke organizacije Crne Gore. Ovakva vrsta analize, korišćena je iz razloga što se na isti način (putem internet pretrage), u najviše slučajeva i strani turisti prvi put susreću sa sportsko rekreativnim ponudama za kojima tragaju na prostoru Crne Gore. Analiza je teritorijalno obuhvatila kompletnu oblast Crne Gore, sagledavajući njen primorski, planinski i središnji region, a za svaki od pomenutih odnosila se na:

- ponudu sportsko rekreativnih aktivnosti u Crnoj Gori;
- pregled lokaliteta gde se organizuju sportsko rekreativne aktivnosti u Crnoj Gori;
- sedište i naziv organizatora/posrednika sportsko rekreativnih ponuda u turizmu Crne Gore.

2 Unković S. i Zečević B. (2009), „Ekonomika turizma", Ekonomski fakultet, Beograd, str.445

3 Unković S. i Zečević B. (2009), „Ekonomika turizma", Ekonomski fakultet, Beograd, str.445

Kompletna analiza sastojala se iz dve etape, od kojih prva je izvršena u martu 2012.godine, a druga godinu dana kasnije u martu 2013.godine, kako bi se uočile promene u razvoju promocije ponuda sportsko rekreativnog turizma na godišnjem nivou.

Nakon kompletne analize, radi lakšeg prikaza brojčanog stanja promovisanih usluga pružaoca ponuda sporta i rekreacije, napravili smo sledeću tabelu, u kojoj:

- prva kolona predstavlja broj ponuda koje su se nalazile u pretrazi kategorije sporta i rekreacije na sajtu NTOCG u martu 2012.godine, a ne nalaze se više u istoj marta 2013.godine;
- druga kolona predstavlja broj ponuda koje su se nalazile u pretrazi kategorije sporta i rekreacije na sajtu NTOCG u martu 2012.godine, a nalaze se u istoj i marta 2013. godine ;
- treća kolona predstavlja broj ponuda koje se nisu nalazile u pretrazi kategorije sporta i rekreacije na sajtu NTOCG u martu 2012.godine, a nalaze se u istoj marta 2013. godine.

Tabela 1. Promovisane ponude sporta i rekreacije, od 2012.god. do 2013.god., na sajtu NTOCG

Pružaoci ponuda sporta i rekreacije	**kolona 2012.god.**	**kolona 2012. i 2013.god.**	**3. kolona 2013.god.**
TURISTICKE AGENCIJE	20	5	2
SPORTSKI KLUBOVI	0	55	12
OSTALO (ski centri, etno sela, javna preduzeća, proizvodnja plovila, dileri plovila, lokaliteti, luke, p.u.zadruge, udruženja, prodavnice)	7	22	23

Kao što možemo primetiti, na zvaničnom sajtu NTOCG u vezi sporta i rekreacije, uglavnom nalaze se ponude pružaoca usluga sportsko rekreativnih aktivnosti, od kojih najviše susrećemo ponude sportskih organizacija i turističkih agencija. U manjem broju, zatim možemo videti i sportsko rekreativnu promociju lokaliteta i centara (etno sela, ski centara i sl.), kao i prodavnica sportske opreme, iznajmljivanja, popravke i prodaje plovila i dr.

Posmatrajući tabelarni prikaz analize, možemo primetiti da je iz pretrage sporta i rekreacije na sajtu NTOCG uklonjeno 2013.godine 20 ponuda turističkih agencija i 7 ostalih, čije prezentacije su se na istim stranicama sajta nalazile u martu 2012.godine. Isto tako, možemo primetiti da je do marta 2013.godine na stranicama sporta i rekreacije promovisano 37 novih ponuda, koje se u ovoj pretrazi nisu nalazile godinu dana ranije.

NTOCG pokušava ovim web direktorijumom da objedini sve turističke atrakcije, usluge i mesta u Crnoj Gori, u koje spada i kategorija sporta i rekreacije. Za pojedinačne pružaoce turističkih usluga u Crnoj Gori, ovaj web portal odlična je šansa za reklamiranje sopstvenih proizvoda.

Prema sedištu pravnih lica, možemo reći da je u sve 3 regije Crne Gore, skoro podjednako prepoznat značaj pružanja sportsko rekreativnih usluga u turizmu. Prema rezultatima analize, posmatrajući sedište organizatora ponuda sporta i rekreacije objavljenih na sajtu NTOCG iz marta 2012.godine, pružanjem ovih usluga bavilo se:

- u primorskom regionu kvalitativno 41, što kvantitativno iznosi 37,60%
- u planinskom regionu kvalitativno 34, što kvantitativno iznosi 31,20%
- u središnjem regionu kvalitativno 34, što kvantitativno iznosi 31,20%

Godinu dana kasnije, posmatrajući sedište organizatora ponuda sporta i rekreacije objavljenih na sajtu NTOCG, na osnovu ponovljene analize u martu 2013.godine, pružanjem ovih usluga bavilo se:

- u primorskom regionu kvalitativno 46, što kvantitativno iznosi 38,66%
- u planinskom regionu kvalitativno 38, što kvantitativno iznosi 31,93%
- u središnjem regionu kvalitativno 35, što kvantitativno iznosi 29,41%

Ako bismo pojedinačno pregledali ponude, videli bi smo da u velikom broju na sajtu NTOCG nedostaju informacije o lokaciji gde organizatori pružaju usluge sportske rekreacije, kao i da mnogi pružaoci ovih usluga ne poseduju svoje lične web prezentacije.

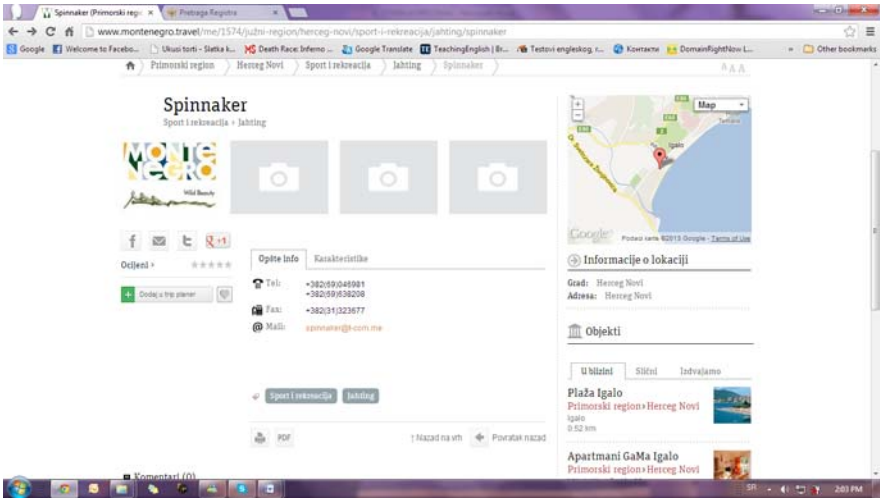
Naime, iako je posedovanje i izgled lične web prezentacije u sadašnjem vremenu oličenje poslovnosti, mnogi pružaoci usluga još uvek ne shvataju značaj interneta, kao sredstva za unapređenje svog poslovanja.

U martu 2012.godine, od ukupno 109 oglašenih ponuđača sporta i rekreacije na sajtu NTOCG, 40 nije posedovalo svoju ličnu web prezentaciju gde bi se turisti mogli detaljnije informisali o ponudama koje pružaju, što iznosi 36,70% od ukupnog broja. U martu 2013. godine broj je procentualno porastao, tako da od 119 oglašenih na sajtu NTOCG, 57 nije posedovalo svoju ličnu web prezentaciju, što iznosi 47,89 % od ukupnog broja.

Što se tiče nedostataka nekih od najosnovnijih informacija koje se ne nalaze na samome sajtu NTOCG, pri saopštenju konkretnih ponuda u sportu i rekreaciji, možemo reći:

- u martu 2012.godine od ukupno 109 ponuda, na 55 prikaza nije bilo istaknuto na kojoj tačno lokaciji ovi ponuđači pružaju svoje usluge, što kvantitativno iznosi oko 50,46% od ukupno prikazanih ponuda;
- u martu 2013.godine broj je porastao, tako da od ukupno 119 ponuda, na čak 82 prikaza nije bilo istaknuto na kojoj lokaciji ponuđači pružaju svoje usluge, što kvantitativno iznosi oko 68,91% od ukupno promovisanih ponuda sporta i rekreacije.

Na narednom primeru, prikazaćemo kako izgleda jedan od navedenih mnogobrojnih sadržaja na sajtu NTOCG, sa oskudno prikazanom ponudom u martu 2013.godine:



Slika 1. "Prikaz jednog od mnogobrojnih ponuda sporta i rekreacije na sajtu NTOCG"; *Izvor: http://www.montenegro.travel/me/1574/ju%C5%BEni-region/herceg-novi/sport-i-rekreacija/jahting/spinnaker(od dana 16.03.2013.godine)*

Posmatrajući prikazani primer, možemo primetiti da od ponuđenih informacija potencijalnim klijentima ne pruža se gotovo ništa više od najosnovnijih podataka koji sadrže:

1. Naziv privrednog subjekta
2. Sedište (navedeno ime opštine, bez adrese)
3. Vrstu sporta i rekreacije
4. Kontakt, odnosno broj telefona i e-mail adresa

Usled navedenog kao zaključak se nameće, da umesto jasno definisanih i javno objavljenih informacija, preko ovog web direktorijuma NTOCG, gotovo nemoguće je doći do detaljnijih podataka o uslugama većine promovisanih ponuda. Potencijalnim posetiocima sajta, ostavlja se mogućnost informisanja isključivo preko kratkih saopštenja, pozivom na ostavljene brojeve telefona, ili putem e-maila pružaoca ovih sportsko rekreativnih usluga. Pružaocima usluga, na ovaj način ostavlja se mogućnost da po sopstvenim potrebama, i u svakom momentu mogu promeniti cenu i sadržaj aktivnosti, od slučaja do slučaja.

Pored navedenog, možemo reći da "Spinnaker" (kao primer u ovom razmatranju), uopšte i ne poseduje status pravnog lica, odnosno izbrisan je iz Centralnog registra privrednih subjekata Crne Gore.

Postavlja se pitanje: "ko onda stoji iza ovakvih projekata, i koliko ovakvih ponuda se nalazi na sajtu NTOCG? Da li, i na koji način, obrisani privredni subjekti pružaju i naplaćuju svoje usluge u Crnoj Gori, a uz sve pomenuto potpomognuti su promocijom na zvaničnom sajtu NTOCG?"

Slika 2. "Prikaz obrisanog privrednog subjekta Spinnaker u pretrazi CRPSCG"; *Izvor: http://www.crps.me/index.php/me/pretraga-registra (od dana 16.03.2013.godine)*

Nakon prikupljanja i obrade podataka o stepenu korišćenja sportsko rekreativnih sadržaja, kako bi se na osnovu dobijenih rezultata sublimirali zaključci, i dao krajnji sud o prisutnosti i promociji sportsko rekreativnih sadržaja, urađena je i SWOT analiza promocije sportsko rekreativnih sadržaja na zvaničnoj prezentaciji turizma Crne Gore.

Tabela 2. "SWOT analiza promocije sportsko rekreativnih sadržaja na zvaničnom sajtu turizma Crne Gore"

Korisno	**Štetno**
SNAGE **Objedinjavanje sportsko rekreativnih aktivnosti na jednom mestu** (pruža mogućnost potencijalnim turistima da se na jednom mestu upoznaju sa svim sportsko rekreativnim sadržajima u turizmu Crne Gore)	SLABOSTI **Pružanje oskudnih i nepotpunih informacija turistima o sportsko rekreativnim sadržajima** (iako organizatori sportsko rekreativnih aktivnosti pre oglašavanja popunjavaju upitnike sa jasno zatraženim informacijama od strane NTOCG, mnogi od ovih sadržaja se kasnije veoma oskudno prikazuju na samom web portalu NTOCG, ne pružajući dovoljno informacija budućim potrošačima usluga šta konkretno ponuđači nude, za koliko novca, kada, gde i koja stručna ekipa stoji iza projekta u pružanju ovih usluga)
PRILIKE **Besplatno oglašavanje** (web portal je privlačan svim organizatorima sporta i rekreacije, obzirom da ih finansijski ne opterećuje)	PRETNJE **Vremenski period oglašavanja nije limitiran ugovorom, niti rokom, npr.da se godišnje obnavlja** (prvobitno dostavljeni sportsko rekreativni sadržaji vremenom su podložni izmenama i dopunama, a čak može doći i do potpunog gašenja pravnog subjekta, a da o tome nije obaveštena NTOCG i da neažurirane informacije stoje i dalje na zvaničnom portalu turizma Crne Gore).

Zaključak

Sportsko rekreativni sadržaji u turizmu Crne Gore približno su zastupljeni u sve tri njene regije, i trenutno uglavnom ih organizuju i sprovode sportske organizacije i turističke agencije. Vodeći promoter sportsko-rekreativnih sadržaja u turizmu Crne Gore je Nacionalna turistička organizacija, koja trenutno predstavlja najobuhvatniju bazu podataka, a zatim slede je i lokalne turističke organizacije koje su odgovorne za marketing turizma na nivou turističkih mesta (gradova i opština).

Nakon detaljnog pregleda svih predstavljenih ponuda, primetili bi smo da ova baza nije savršena u smislu zadovoljavanja potreba potrošača, obzirom da iako je napravljen pomak u smislu prepoznavanja potrebe za objedinjavanjem ovih podataka na jednom mestu, mnoge sportsko rekreativne ponude su ovde veoma oskudno prikazane, ne pružajući dovoljno informacija budućim potrošačima usluga šta konkretno nude, za koliko novca, kada, gde i koja stručna ekipa stoji iza projekta u pružanju ovih usluga.

NTOCG kao kvazidržavni organ, koji je zadužen za marketing Crne Gore kao turističke destinacije, ne bi trebala dozvoliti da se preko svoje zvanične web prezentacije pojavljuju nepotpuni sadržaji, kao i neproverene organizacije koje nude sportsko rekreativne sadržaje bez posedovanja odgovarajuće licence. Naprotiv, NTOCG trebala bi filtrirati sve sadržaje na osnovu predhodno utvrđenih kriterijuma, i u budućnosti pre prezentovanja na svom web portalu nastojati da pridobije detaljnije informacije od organizacija koje se bave ovim vidom

selektivnog turizma, kao i redovno ih ažurirati u pogledu njihovih planiranih aktivnosti i načina na koji pružaju iste.

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UDK: 351.74/.76:613.71
(Pregledni članak)

TEHNIKE SPECIJALNOG FIZIČKOG OBRAZOVANJA U FUNKCIJI ZAŠTITE POLICAJCA

Đurica Amanović[1], Milija Ljubisavljević[2], Željko Nikač[1], Suzana Talijan[1], Nenad Koropanovski[1]

[1]Kriminalističko-policijska akademija u Beogradu
[2]Ministarstvo unutrašnjih poslova Republike Srbije

Apstrakt

U radu je analizirana praktična primena tehnika specijalnog fizičkog obrazovanja (SFO) kao sredstva zakonitih kontrolnih aktivnosti policije tj. tehnike fizičke kontrole u funkciji kontrolisanja fizičkog otpora koji pruža osumnjičeno lice. Analizirano je ukupno 350 situacija u kojima je bila opravdana upotreba fizičke sile. Posebna pažnja posvećena je definiciji sile, količini i prirodi otpora koji se mora savladati, te nivou sile koju pripadnik policije primenjuje da bi neutralisao nezakonite fizičke akcije osumnjičenog u cilju upravljanja (kontrole) određenom situacijom. Dalje, u radu je potencirana potreba jasno kodifikovanog i opšte prihvaćenog niza pravila prilikom primene sile, kao garant etičkog i zakonitog vršenja policijskih ovlašćenja.

Ključne reči: otpor, fizička kontrola, tehnika, specijalno fizičko obrazovanje.

Uvod

Osnovna funkcija policije je sprovođenje zakona i održavanje reda. Jedan od neophodnih i neizbežnih aspekata ove funkcije je i primena sile (sredstava prinude), naravno kada je to potrebno. Zakon o policiji[1] reguliše upotrebu silei ona se može koristiti samo kada je apsolutno neophodna za postizanje legitimnog cilja u funkciji bezbednosti, sprovođenja pravila i propisa. Načela i uputstva kojima se reguliše upotreba sile (sredstava prinude) definisane su u Zakonu o policiji, Pravilniku o uslovima i načinu upotrebe sredstava prinude[2], Pravilniku o načinu obavljanja policijskih poslova[3], Uputstvu o policijskoj etici i načinu obavljanja poslova policije[4] i drugim međunarodnim i nacionalnim standardima.

U Pravilniku o uslovima i načinu upotrebe sredstava prinude, definisani su uslovi i način upotrebe sredstava prinude (primena sile) i posebno se potenciraju principi neophodnosti i proporcionalnosti, vreme trajanja, ograničenja kao i obaveze nakon upotrebe sile. Pod sredstvima prinude podrazumevaju se fizička snaga, službena palica, sredstva za vezivanje, specijalna vozila, posebno dresirani psi, konjica, sredstva za zaprečavanje, hemijska sredstva i vatreno oružje (čl. 1. stav 2). Isto tako, regulisano je da policijski službenik upotrebljava silu

[1] Službeni glasnik R.Srbije, br. 101/2005
[2] Službeni glasnik R.Srbije, br. 133/2004
[3] Službeni glasnik R. Srbije, br.27/2007
[4] Službeni glasnik R. Srbije, br.41/2003

tako da službeni zadatak obavi sa najmanje štetnih posledica po lice protiv koje upotrebi silu i samo za vreme dok postoje zakonom opravdani razlozi zbog kojih je sredstvo prinude (sila) upotrebljeno (čl. 2). Dalje, o svakoj primeni sredstava prinude (sile) policijski službenik u pismenom obliku podnosi izveštaj neposrednom starešini, najkasnije 24 časa od upotrebe sredstava prinude (čl. 31).Međutim, policijska praksa pokazuje veoma širok i nesistematičan pristup kod samog izveštavanja o upotrebi sredstava prinude (sile) od strane policije.

U radu je korišćena moderna, u skladu sa evropskim standardima, definicija otpora koja daje dobru osnovu za koncizno i kvalitetno izveštavanje od strane policije.Kontrola je sila koju policijsko osoblje primenjuje da bi upravljao situacijom i kontrolisao otpor osumnjičenog. Kada verbalna komunikacija nije uspešna, policajac mora da planira mogućnost upotrebe fizičke snage (sile) kao najblažeg sredstva prinude.Izbor vrste ili količine sile, bi trebao biti zasnovan na količini otpora osumnjičenog, kao i od okolnosti u određenoj situaciji. Prema tome, cilj primene fizičke sile ili tehnika fizičke kontrole, leži u prevazilaženju otpora koga osumnjičeni pruža. Otporom se smatra svako odupiranje osumnjičenog (pasivno ili aktivno) naredbama policije, napad ili izbegavanje mera ili aktivnosti koje policija nalaže i preduzima u skladu sa Zakonom. Naravno, vrsta i količina sile koju će policija upotrebiti treba da bude zasnovana na vrsti otpora koji pruža osumnjičeni kao i drugim bitnim faktorima i okolnostima specifične situacije koji mogu uticati na izbor i količinu sile koja je upotrebljena.

Taktičko rešenje (oblik i obim sile) za koje se policijski službenik opredeli treba da bude zasnovano na obliku i obimu otpora koji pruža osumnjičeni, kao i na ostalim uslovima i okolnostima specifične situacije (količina otpora, prisustvo oružja, ozbiljnost i priroda prekršaja, osobine osumnjičenog, okruženje i dr). Procena opasnosti nivoa otpora treba da bude zasnovana na tehničko-taktičkom znanju policijskog službenika kao i na adekvatnoj energetskoj obezbeđenosti (mehanizmi odgovorni za energetski deo strukturiranja i kontrole realizacije tehnika kontrole, biohemijskog i fiziološkog karaktera).

Specijalno fizičko obrazovanje[5] karakteriše velikibroj tehnika[6], njihovih varijanti i kombinacija, koje se izvode u nepredvidivim i varijabilnim situacijama sa različitim protivnicima. Edukacija u SFO-u se sprovodi modelom faznog učenja, kao osnovna, usmerena i situaciona obuka (Milošević i sar. 1989). Svaka od faza ima specifične ciljeve i zadatke. Zadaci osnovne i usmerene obuke se odnose na učenje bazičnih konceptualnih algoritama, na učenje izvedenih konceptualnih i nekih situacionih algoritama, dok je zadatak situacione obuke primena već naučenih algoritama i programa, sa ciljem uspostavljanja potpune kontrole nad osumnjičenim. Fizička kontrola obuhvata niz tehnika SFO-a, kao što je blago vođenje lica, pritisci i stezanja na vitalne tačke, tehnike poluge, sve do destrukcije osumnjičenog tj. dinamičnijih tehnika, kao što su udarci, bacanja, i dr. U strukturi predmeta Kriminalističko-policijske akademije, Specijalno fizičko obrazovanje pripada grupi obaveznih predmeta i u sastavu je Katedre policijskih nauka. Specijalno fizičko obrazovanje

[5] Specijalno fizičko obrazovanje (SFO) je nastavno-naučna oblast koja se izučava na svim nivoima školovanja pripadnika policije.Najveći deo programa SFO usmeren je na identifikaciju i savlađivanje tehnika više borilačkih sistema (*judo, karate, aikido),* i na njihovu aplikaciju preko *jujutsu* tehnika, u raznovrsnim, specijalnim uslovima života i rada pripadnika policije. Specijalno fizičko obrazovanje predstavlja kompleksan sistem samoodbrane koji čine osmišljene i sistematizovane tehnike odbrane i napada, njihove varijante i kombinacije koje se izučavaju radi primene u konkretnoj situaciji, dakle, preduzimanjurealizacijikonkretnihpolicijsko-operativnih i drugih zakonskih mera u funkciji policijskog posla (tehnikefizičke kontrole osumnjičenog, itd).

[6] Specifična motorička znanja (motorički algoritmi), odnosno specifična forma položaja, kretanja i osmišljenih borilačkih pokreta koji su precizno definisani načinom izvođenja i nazivom(Jovanović, 1992).

kao integralni deo fizičkogvaspitanja i sporta (kineziologije)[7] sa svojim sadržajem i ciljevima je u direktnoj povezanosti sa razvojem, održavanjem i podizanjem na viši nivo zdravstvenih, radnih i specijalnih sposobnosti i znanja koja su od posebnog značaja za efikasno i uspešno obavljanje profesionalnih zadataka službenika MUP-a.

Aktuelnost i značaj istraživanja je upravo u sve češćem napadu na policijske službenike (aktivna i teška agresija), nedovoljnoj krivično pravnoj i prekršajno pravnoj zaštiti pripadnika policije. Prema podacima iz evidencija MUP-a, na napad na bezbednost pripadnika policije, dolazilo je, poslednjih godina, nešto manje od polovine svih napada (Ignjatović, 2006). Prema istom izvoru, najveći procenat (42%) u odnosu na poslove koje su vršili policajci prilikom napada na njihov telesni integritet odnosio se na održavanje ili uspostavu javnog reda i mira (period 1993-2003).

Predmet rada i metode

Naše istraživanje predstavlja čisto kontemplativan odnos prema problemu istraživanja, i kao takav predstavlja sistematsko neeksperimentalno posmatranje tj. kvalitativnu i kvantitativnu deskripciju realne primene tehnika SFO u obavljanju policijsko-operativnih poslova. Prema tome, predmet istraživanja se odnosio na analizu primene sile kao sredstva prinude, najtežeg Zakonom utvrđenog ovlašćenja policije, odnosno upotreba fizičke snage (tehnike fizičke kontrole) kao najblažeg sredstva prinude. Upotrebom fizičke snage (Zakon o policiji), smatra se upotreba različitih zahvata (stručno i terminološki tačnije - tehnika) borilačkih veština ili njima sličnih postupaka na telu drugog (osumnjičenog) lica, kojima je cilj odbijanje napada ili savlađivanje otpora uz nanošenje najmanje štetnih posledica.

Istraživanjem treba da se dobiju podaci, koji će doprineti efikasnijoj edukaciji i uspešnijem obavljanju profesionalnih zadataka.Za potrebe ovoga rada slučajnim izborom analizirano je 350 situacija o upotrebi fizičke snage u više slučajno odabranih policijskih uprava na teritoriji R. Srbije, u periodu 2010/2011 godine. Iz analiziranihsituacija izdvojene su varijable koje su prezentovale nivo otpora, nivo kontrole i tehnikespecijalnog fizičkog obrazovanja koje su kvantifikovane deskriptivnom statistikom (apsolutne i relativne frekvencije) što je prikazano tabelarno i grafički.

Rezultati i diskusija

Iz analiziranih situacija, čiji predmet je bila upotreba fizičke snage kao sredstva prinude, izdvojeni su aktuelni nivoi otpora kroz četiri diferencirane grupe: pasivan otpor; defanzivan otpor; aktivna agresija; teška agresija.Fizička kontrola obuhvata niz tehnika SFO-a, kao što je blago vođenje osumnjičenog, pritisci i stezanja na vitalne tačke, tehnike poluga, sve do tehnika koje se koriste za destrukciju osumnjičenog, kao što su udarci, bacanja, i dr. Naravno, izbor tehnike i intenzitet sile zavisi od količine otpora i opasnosti koja može iz njega da nastane.

Osim toga, primenjena tehnika fizičke kontrole svakog policijskog službenika, zavisi od njegove prethodne obuke, iskustva i znanja iz oblasti specijalnog fizičkog obrazovanja, kriminalističke taktike, metodike, operative, psihologije, i drugih oblasti. Daljom analizom aktuelnih situacija o upotrebi fizičke snage u cilju savladavanja otpora izdvojene su tehnike SFO-a koje su korišćene.

Analiza nivoa otpora

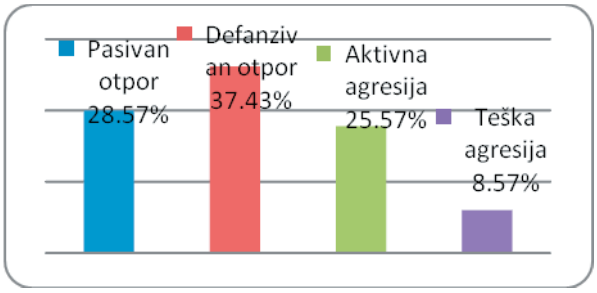
[7] Danas nailazimo, još uvek, kako na terminološku tako i na suštinsku zbrku šta je predmet proučavanja matične nauke. Tako je nekad u polju društveno - humanističkih nauka a nekad u polju medicinskih nauka. Odlukom Nacionalnog saveta za visoko obrazovanje Srbije iz 2006. godine, promenjen je naziv naučneo blasti fizička kultura u osnovne naučne discipline fizičko vaspitanje i sport.

Od ukupnog broja situacija u kojima je došlo do upotrebe sredstava prinude, odnosno, upotrebe fizičke snage kao sredstva prinude, izdvojeno je 350 koje su opravdale Zakonom dozvoljene postupke. Aktuelni otpor u analiziranim izveštajima je ispoljen kroz neke od navedenih nivoa otpora prikazanih u **tabeli 1**i **grafikonu 1**.

Tabela 1. Nivo otpora osumnjičenog naveden u analiziranim situacijama

Nivo otpora	Apsolutna frekvencija (f)	Relativna frekvencija (f %)
Pasivan otpor	100	28.57
Defanzivan otpor	131	37.43
Aktivna agresija	89	25.43
Teška agresija	30	8.57

Na osnovu dobijenih rezultata može se zaključiti da je od ukupnog broja situacija (350) najviše bilo defanzivnog otpora 131 ili 37,43%. Aktivna agresija na policijske službenike je bila u 89 ili 25,43% situacija,od tog broja izdvajaju se 3 situacije sprečavanja napada na kolegu ili drugo lice. Od ukupnog broja situacija njih 100 ili 28,57% je činio pasivan otpor osumnjičenog. U 30 slučajeva ili 8,57% radilo se o teškoj agresiji na policijske službenike. Važno je istaći da od tog broja 2 slučaja su bila pretnja oružjem (pištolj), 2 napada nožem, 1 napad drvenom palicom i 1 napad grlićem flaše.



Grafikon 1. Nivo otpora osumnjičenog

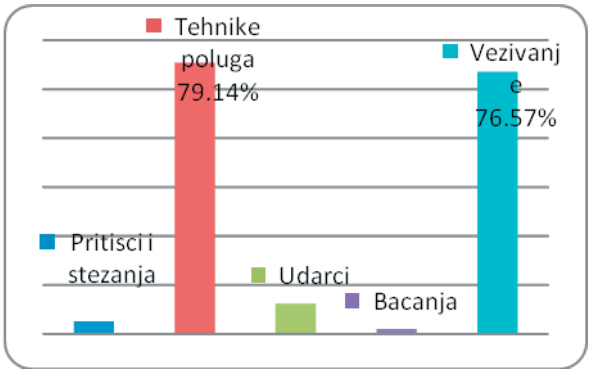
Analiza primenjenih tehnika SFO

Neke situacije su rešavane uspešnom komunikacijom, verbalnim obraćanjem (davanjem upozorenja i komandi) i vezivanjem, međutim kada to nije bilo dovoljno policija je primenjivala fizičku silu odnosno tehnike SFO-a, kao najblaže sredstvo prinude (laka i teška kontrola). Analizom aktuelnih situacija o upotrebi sredstava prinude kao sredstva kontrole osumnjičenog izdvojene su pojedinačne tehnike SFO koje su činile tehnike poluga, zatim tehnike udaraca, bacanja, pritisci i stezanja na vitalne tačke, i vezivanje službenim lisicama. Primenjene tehnike prikazane su u **tabeli 2**.

Tabela 2. Tehnike SFO koje su pripadnici policije koristili da bi kontrolisali otpor osumnjičenog u analiziranim situcijama.

Korišćena tehnike SFO-a	Apsolutna frekvencija (f)	Relativna frekvencija (f%)
Pritisci i stezanja na vitalne tačke	13	3.71
Tehnike poluga	277	79.14
Udarci	31	8.86
Bacanja	5	1.43
Vezivanje službenim lisicama	268	76.57

Iz analiziranih Izveštaja o upotrebi sredstava prinude (sile) navodi se 350 situacija primene tehnika SFO-a, od kojih su 277(79,14%) situacije rešene tehnikom poluga[8]. Čak kod 268 situacija ili 76,57% urađeno je vezivanje osumnjičenog uz upotrebu službenih lisica (**dijagram 2**). Važno je istaći da je u najvećem broju situacija nakon realizovane poluge urađeno i vezivanje osumnjičenog, dok je u manjem broju situacija tehnika poluge korišćena u svrhu dovođenja osumnjičenog do službenog vozila. Slični rezultati su dobijeni i u našim ranijim istraživanjima, kao i istraživanjima drugih autora. Tako, za vreme intervencije čak 71% situacija se rešava držanjem i polugom a u 79% situacija su korišćene službene lisice (Anderson et al., 2001).



Grafikon 2. Korišćene tehnike kontrole u aktuelnim situacijama.

U **tabeli 3** prikazane su vrste poluga koje su korišćene u analiziranim situacijama. Na osnovu dobijenih rezultata može se zaključiti da je čak 183 ili 66,06% situacija rešeno polugom uvrtanjem ramena tj. ključem na laktu. Kod 41 situacije (14,18 %) korišćena je tehnika poluge

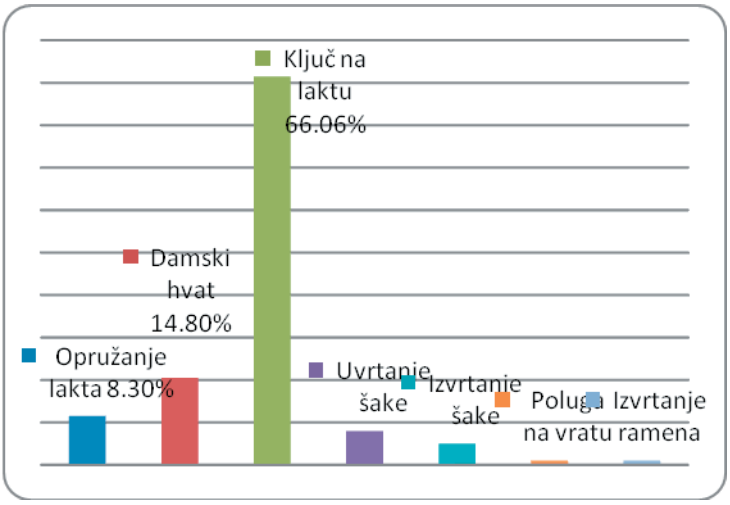
[8] Tehnika poluga (*kansetsuwaza*) su najprepoznatljiviji tehnički elementi samoodbrambenog *jujitsu* sistema i u sastavu su skupine tehnika kontrole (*katamewaza*). Poluge su borbene tehnike koje se izvode tako da se vrši brzo i snažno istezanje tkiva u predelu zgloba (stabilizatora zgloba) na kojem se tehnika primenjuje. Cilj upotrebe poluga je da se uspostavi kontrola nad protivnikom (*osaewaza*) kao najblaže sredstvo prinude (fizička kontrola) nanošenjem bola, distorzije ili luksacije zahvaćenog zgloba. Moguće ih je uraditi na svim zglobovima i primeniti u različitim situacijama u kojima se mogu naći policijski službenici. Poluge se najčešće izvode na zglobu lakta, ramena, šake, kičme i kolena.

na šaci savijanjem ili damski hvat, a kod 23 situacija (8,30%) tehnika prekomernog opružanja lakta.

Tabela 3. Vrsta poluge koju je pripadnik policije koristio da bi kontrolisao otpor osumnjičenog u analiziranim situacijama.

Vrsta poluge	Apsolutna frekvencija (f)	Relativna frekvencija(f %)
Opružanje lakta	23	8.30
Damski hvat	41	14.80
Ključ na laktu	183	66.06
Uvrtanje šake	16	5.78
Izvrtanje šake	10	3.61
Poluga na vratu	2	0.72
Izvrtanje ramena	2	0.72

Iz analiziranih situacija kod kojih je policijski službenik koristio tehniku poluge iz programa specijalnog fizičkog obrazovanja, može se zaključiti da je u najvećem broju analiziranih situacija korišćena tehnika uvrtanja ramena (ključ na laktu) i to u 66.06% situacija (**dijagram 3**). Samo je u dva slučaju primenjena poluga izvrtanjem ramena, a dve situacije su rešavane tehnikom poluge na vratu. U obe situacije se radilo o sprečavanju napada na drugo lice.



Grafikon3. Korišćene poluge u aktuelnim izveštajima.

Zaključak

Da bi policija bila efikasna u sprovođenju zakona, pripadnici policije imaju čitav niz prava i ovlašćenja koja mogu upotrebiti. Jedno od Zakonom definisanih posebnih ovlašćenja policije su i sredstva prinude (**primena sile**). Fizička snaga (**fizička sila**) je predviđena kao najblaže sredstvo prinude. Pravilnikom o uslovima i načinu upotrebe sredstava prinude, upotrebom

fizičke snage, smatra se upotreba različitih zahvata (preciznije **tehnika**) borilačkih veština (preciznije **specijalnog fizičkog obrazovanja** ili **fizičke kontrole**) ili njima sličnih postupaka na telu drugog lica, kojim je cilj odbijanje napada ili savlađivanje otpora lica uz nanošenje najmanjih štetnih posledica.

Mali broj istraživanja koja se bave primenom sile i kontrole otpora uslovio je ovakvo istraživanje kao teorijsku osnovu za opsežnije istraživanje ove pojave. U prilog tome, policijska praksa pokazuje veoma širok i nesistematičan pristup kod samog izveštavanja o primeni sile od strane policije. U radu je korišćena moderna definicija otpora, koja daje dobru osnovu za optimalno delovanje kod primene fizičke kontrole osumnjičenog kao i kvalitetno i unificirano izveštavanje od strane policije.

Kada je u pitanju nivo otpora osumnjičenog, može se zaključiti da je od ukupnog broja situacija najviše bilo defanzivnog (37.43%) i pasivnog otpora (28.57%), a aktivne agresije na policijske službenike 25.43% i teške agresije 8.57%. Iz analiziranih izveštaja o upotrebi fizičke snage, policajci za kontrolu lica najčešće koriste tehnike poluga (79.14%) i vezivanje službenim lisicama (76.57%). Od korišćenih tehnika poluga čak 66.06% situacija je rešavano polugom prekomernim uvrtanjem ramena tj. ključem na laktu.

Na kraju, smatramo da posebno treba podvući problem permanentne obuke i treninga policijskih službenika iz oblasti teorijske nastave (ljudska prava, policijska etika, komunikacija i pravni osnov za primenu policijskih ovlašćenja), operativnih policijskih veština i specijalnog fizičkog obrazovanja koji će umanjiti rizik njihove viktimizacije i optimizirati primenu sile.

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UDK: 796.056:796.032(497.1)
(Pregledni članak)

POZICIJA SPORTISTA U CRNOGORSKOM OLIMPIJSKOM POKRETU

Marko Begović
Nemački sportski univerzitet

Apstrakt

Ovaj rad bavi se pitanjem institucionalnog položaja sportista u okviru Crnogorskog Olimpijskog pokreta sa ciljem osmišljavanja mehanizama koji će jačati prednosti, a eliminisati institucionalne prepreke za sportiste. Oslikavanjem formalne (kao i neformalne) organizacione strukture, teži se stvaranju institucionalnog okvira za unapređivanje karijera sportista, integracija i funkcionisanju u društvenom sistemu nakon završetka sportske karijere, kao i ukupnom poboljšanju sistema sporta u Crnoj Gori.

Ključne reči: sportisti, Olimpijski pokret, sportska karijera, Crna Gora

Uvod

Kako bi se promenilo stanje Olimpijskog pokreta u Crnoj Gori potrebno je prihvatiti Kubertenovu ideju sportiste kao jezgra i glavnog promotera i prenosioca olimpijskih vrednosti:

„Da bi sto ljudi razvilo svoju muskulaturu, potrebno je da se njih pedesetoro bavi sportom, a da bi se njih pedesetoro bavilo sportom, potrebno je da njih dvadesetoro budu profesionalci; ali da bi njih dvadesetoro bili profesionalci, neophodno je da njih petoro budu sposobni za vanserijska dostiguća."[1]

Uzevši u obzir statističku poziciju Crne Gore, države sa populacijom manjom od milion ljudi, sportske aktivnosti treba da vodi državna vlast, ali preko decentralizovanih jedinica unutar Nacionalnih sportskih saveza (delova crnogorskog NOK-a).[2] Pod vođstvom države, Italijanski Olimpijski Komitet (CONI) odgovoran je za sportske aktivnosti.[3] Načelo decentralizacije znači da bi trebalo da budu uključeni svi koji se aktivno bave nekim konkretnim sportom (od sportista do pokrovitelja). Teniski savez Sjedinjenih Američkih država (USTA) je primer gde sportisti, treneri, sudije, pokrovitelji aktivno učestvuju u različitim odborima u okviru USTA koji se zasnivaju na pravilima osnivačkog akta USTA, statuta, i različitih uslova prijema u te odbore.[4]

Sport igra veoma važnu ulogu u celokupnom crnogorskom identitetu, posebno u vremenima kada je ekonomska kriza izuzetno produbila jaz između klasa sa negativnim

[1] In MÜLLER, N. (1986) /IOC (Eds.) Olympic Education : Pierre de Coubertin. Textes choisis. Vol.I « Révélation». Zurich, Hildesheim, New York, p. 436.
[2] http://data.un.org/CountryProfile.aspx?crName=Montenegro
[3] Legge N. 91/81 sul Professionismo Sportivo, Art. 14.
[4] http://assets.usta.com/assets/1/15/2012_Constitution_Bylaws3_022212.pdf

uticajem na socijalizaciju ugroženog stanovništva. Zbog ovih negativnih posledica, sportske organizacije imale su tendenciju da prate organizacionu strukturu drugih vladinih organizacija. U svom radu, Šifle definiše tri različite vrste organizacionih kultura sportskih upravnih tela: kultura udruženja izabranih rukovodilaca volontera, koja se zasniva na državnim vrednostima amaterizma i volontiranja; kultura javnog servisa, državnih službenika koji se nalaze na različitim nivoima u okviru zvaničnog saveza (crnogorske sportske organizacije obično prate ovu organizacionu šemu); i menadžerska kultura koja uključuje menadžere i stručnjake, i zasniva se na zaslugama, performansama i isplativosti.[5]

S druge strane, nema mnogo istraživanja koja su se bavila pitanjima sportskih organizacija iz relacione perspektive.[6]

COK-NSS relaciona struktura

Pravni položaj Crnogorskog Olimpijskog komiteta predstavlja savez svih sportskih saveza (ali ne i olimpijskih sportova). Strategija i akcioni planovi zavise od NOK-a Generalne skupštine Crne Gore koju čine razni predstavnici sportskog pokreta (predstavnici nacionalnih sportskih saveza).[7] Imajući u vidu organizacioni sistem koji postaje sve više birokratski, Krozije i Friedberg su predložili da funkcioneri posluju sa značajnim nivoom autonomije.[8] Iako su dužni da se pridržavaju obaveza predviđenih statutom, predstavnici su ipak skloni da donose odluke na osnovu svojih neformalnih saveza, kako bi zadovoljili svoje privatne interese. Uprkos neskladu u društvu, Koukli je zaključio da se sport sastoji iz pravila stvorenih međuljudskom saradnjom.[9] Kontekstualni kulturni elementi (koji su uzeti zdravo za gotovo) široko su rasprostranjeni u procesu donošenja odluka u okviru Crnogorskog olimpijskog pokreta.[10] Nacionalni sportski savezi su vladine organizacije koje se sastoje od sportskih klubova ili predstavljaju njihovu uniju. Većina klubova su ili u privatnom vlasništvu ili u javnom, ali pod potpunom kontrolom privatnih lica (koji su obično povezani sa politički uticajnim ljudima).

Razmatranje statuta[11] (zaštitno pravno sredstvo svakog nacionalnog saveza) dovodi do zaključka da je prioritet ili centralna tačka NSS-a u Crnoj Gori razvoj sportista. Pod razvojem sportista podrazumeva se stvaranje najboljih mogućih uslova za postizanje najboljih sportskih rezultata. U suštini, ostatak statuta ne pruža nikakav pravni niti bilo kakav dodatni podzakonski akt koji bi mogao da obezbedi praktičnu primenu gorenavedenog. Očigledno je da se neformalni savezi grade na zajedničkim ciljevima vlastodržaca, kako bi oni ostali na položaju i kako bi povećali svoje interese. Na primer, Numerato je analizirao situaciju u češkim organima vlasti:

„Iz perspektive društvenog kapitala, sportsko upravno telo predstavlja instituciju kao skup veza u okviru mreže, koje imaju određenu konfiguraciju i koje su organizovane na određeni način. Članovi saveza dele kognitivne slike o sebi a odnosi se održavaju kroz određeni stepen

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[5] Chifflet, P. (1993). Associations de sportifs ou enterprises du sport. In A. Loret (Ed.), *Sport and Management*. Paris: Dunod.

[6] Harvery, J., Lévesque, M., & Donnelly, P. (2007). Sport Volunteerism and Social Capital. *Sociology of Sport Journal, 24*(2), 206-223.

[7] http://www.cokcg.org/onama/statut/

[8] Crozier, M and Friedberg, E (1977) L'Acteur et le Système.Paris: Éditions du Seuil.

[9] Coakley, J (2007) Sport in Society – Issues and Controversies. Boston: McGraw Hill.

[10] O kulturnim elementima iz konteksta u: DiMaggio, P.J,. & Powell, W. W. (1991). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality. . In P. W.W & P.J. DiMaggio (Eds), *The New Institutionalism in Organizational Analasys*. Chicago, IL. University of Chicago Press. 26-27.

[11] Većina NSS-a ima sličan statut (Samo Crnogorska verzija): http://www.mta.co.me/userfiles/file/Statut.pdf

poverenja. Ponašanje članova udruženja, koji se manje ili više poistovećuju sa sportskim pokretom, regulisano je normama i obavezama."[12]

Položaj sportista

Važeći ustav NSS-a, s jedne strane pogođen svetskom ekonomskom krizom a s druge strane prihvativši filozofiju okrenutu ka tržištu bez neophodnih pravnih instrumenata (statuta i podzakonskih akata za poboljšanje položaja sportista) uopšteno zanemaruje sportiste i jedino ima za cilj da visoki funkcioneri dobiju državna sredstva i da prošire svoj uticaj. Većina saveza nije kroz statut predvidela institucionalni položaj sportista. Pozitivan primer je Fudbalski savez Crne Gore, gde klubovi, sportisti, treneri, sudije, medicinsko osoblje i najniži predstavnici imaju svoje sindikate u okviru krovnog saveza.[13] Glavni problem Olimpijskog pokreta u Crnoj Gori je ugrožen položaj sportista (zakonski i u praksi). U svom govoru, Frenki Frederiks istakao je sledeće:

„Nesumnjivo je da, bez sportista, ne bi bilo Olimpijskih igara, ne bi bilo sporta."

Bez podrške institucija tokom sportske karijere, karijera koja dolazi posle bavljenja sportom je neizvesna i nejasna i bilo je mnogo dokaza da su sportisti posezali za alkoholom kako bi se izborili sa završetkom sportske karijere.[14] Obratimo pažnju na preporuke sa Kongresa MOK-a iz oktobra 2009. godine:

„Svi sportisti čine srce Olimpijskog pokreta. Njih podržavaju obimne strukture, koje posebno uključuju lokalne klubove, nacionalne i internacionalne saveze i nacionalne olimpijske komitete... Sportiste bi trebalo podsticati da uzmu udela u organizaciji i razvoju u 21. veku."[15]

S druge strane, što se tiče neizvesne budućnosti sportista, Fuks Ebaugh (1988) je primetio:

„Proces razdvajanja od uloge koja je centralna za nečiji identitet i ponovno uspostavljanje identiteta u novoj ulozi, koja uzima u obzir nečiju bivšu ulogu čini proces koji ja nazivam promena uloga."[16]

Olimpijski pokret u Crnoj Gori nema ni formalno ni neformalno uređene ustanove za zaštitu sportista, koje imaju za cilj da ih održe aktivnim i posle sportske karijere. Ovo je veoma bitno jer bi oni, s jedne strane, mogli da posluže kao uzor, a još važnije je što bi to značajno smanjilo mogućnost da bivši sportista postane problematičan član društva. Kao nastavak u vezi sa razvojem sportista:

„Sportistima svih sportova iz celog sveta treba omogućiti pristup odgovarajućem nivou osnovnog pravnog savetovanja i usmerenje tokom njihove sportske karijere. Najuticajniji ljudi Olimpijskog pokreta bi trebalo, o svom trošku, da identifikuju pravila i procedure za postizanje ovog cilja."[17]

Olimpijski pokret u Crnoj Gori je državno orijentisani sistem, kojim upravlja privatno ili politički podobno lice, i konstelacija u NOK-u Crne Gore čini ga veoma uticajnim. Statut Crnogorskog NOK-a omogućava predstavnicima saveza da zauzmu položaj u različitim komisijama, bez obzira da li oni poseduju neophodne preduslove za to. Sportisti bi trebalo

[12] Numerato, D. (2008). Czech Sport Governing Bodies and Social Capital. *International Review for the Sociology of Sport, 43*(1), 21-34.

[13] http://fscg.co.me/images/stories/pravilnici/2012/Statut_FSCG-02.pdf

[14] Mihailovic, M. (1968). The status of former sportsmen. International Review of Sport Sociology, 3, 73-93.

[15] XIII Olympic Congress, (2009). Recommendations, Denmark.

[16] Fuchs Ebaugh, H. (1988) Becoming an Ex. The Process of Role Exit. (pp.1) Chicago, IL: The University of Chicago Press. p.1

[17] *Ibid.,* p. 4.

da budu uključeni u celokupni proces donošenja odluka. O ulozi sportista u institucijama Olimpijskog pokreta:

„Sportisti moraju biti uključeni u organe odlučivanja u okviru Olimpijskog pokreta kroz Sportsku komisiju i druge organe koje imaju puno pravo glasa."[18]

Ne znači, naravno, da će to rešiti sve probleme. Mogućnost učešća možda neće u potpunosti rešiti probleme relacionog trougla (zajednica-sportisti-olimpijski pokret), kako napominje Mekfi:

„Ne mogu se, na primer, rešiti svi problemi u konkretnom sportu određivanjem novih pravila igre, pravila koja će svaku situaciju nedvosmisleno rešiti."[19] Neformalne veze najčešće postaju praksa koja u mnogim slučajevima prevazilazi formalne interese NSS. Jedan od najočiglednijih razloga koji služi kao mehanizam odbrane može objasniti Kešmor:

„Kriza legitimiteta mehanizama za privremeno rešavanje razmirica, koji su oslabljeni zbog komercijalizacije i profesionalizacije sporta."[20]

Sa potpunom svešću o tome da ovo nije uobičajeno stanje u NSS-u, važno je napomenuti da formotvorna istorijska pozadina NSS (socijalistički period/javno vlasništvo do sredine osamdesetih i uvođenje kapitalističkih principa uz nedostatak pravne institucionalne zaštite od devedesetih) tera na jedinu moguću konstelaciju da bi sportiste stavila u položaj da se njihov glas čuje i da uzmu učešće u vođenju NSS-a. Početak promena bi trebalo da bude prilagođavanje postojećih statuta i, s obzirom na to da se većina Nacionalnih sportskih saveza (preko 90%) finansira iz državnih sredstava, da se predstavnici društva dovedu na menadžerske pozicije.[21] Imajući u vidu da su NSS državno orijentisane organizacije važno je podsticati oformljavanje posebnih udruženja sportista, trenera, sudija, roditelja i podstaći pokrovitelje u NSS-u da zauzmu jednaku ulogu u odlučivanju. Osim toga, konstelacija odnosa unutar NSS-a koja je važna za autonomiju u sportu, može da posluži kao zaštita od bilo kakvog zlostavljanja u konkretnom sportu, omogućavajući svim sportistima da budu ravnopravno zastupljeni. U odeljku sa preporukama MOK-a sa Kongresa iz 2009. godine, „Struktura Olimpijskog pokreta", autonomija u sportu je istaknuta kao ključni segment u cilju promovisanja različitosti i posebnosti:

„Nadležne međuvladine organizacije i vlade bi trebalo da priznaju neophodnu i suštinsku autonomiju Olimpijskog pokreta, pogotovo poštovanje i sprovođenje pravila dobrog upravljanja, jednakosti i pravičnosti u sportu i sportskoj administraciji, ustanovljenim od strane Olimpijskog pokreta i navedenim u Olimpijskoj povelji, da obezbedi najbolje i najpravednije moguće bavljenje sportom... Svi činioci Olimpijskog pokreta bi trebalo da preispitaju svoja pravila i aktivnosti, da bi se osiguralo da su u potpunosti u skladu sa Olimpijskom poveljom i sa osnovnim principima i vrednostima olimpizma."

Autonomija u okviru Crnogorskog Olimpijskog pokreta (uglavnom u strukturi NSS-a) uglavnom se pogrešno smatra za autoritet, posebno kada je u pitanju donošenje strateških

[18] *Ibid.,* p. 4.

[19] McFee, G (2000) Spoiling: an Indirect Reflection of Sport's Moral Imperative?' pp. 172-182in Tännsjö, T and Tamburrini, C (eds.) Values in Sport - Elitism, Nationalism, Gender Equality and the Scientific Manufacture of Winners, London: E & FN Spon.

[20] Cashmore, E (2005) Making Sense of Sports. London: Routledge. In work of: Dino Numerato, D. and Persson, H.T.R., (2010). *"To Govern or to Dispute? Remarks on the Social Nature of Dispute Resolutions in C zech and Danish Sports Associations",* Entertainment and Sports Law Journal, ISSN 1748-944X, p. 3.

[21] Informacije o finansiranju NSS-a i drugih sportskih organizacija (klubova) mogu se naći na: http://www.infomladi.me/index.php?IDSP=19976&jezik=lat i http://www.infomladi.me/index.php?IDSP=20257&jezik=lat.

odluka o razvoju sportskog sistema ili u okviru konkretnog sporta, s jedne strane, i način trošenja državnih sredstava (izdvojenih za razvoj sportista) s druge strane.

Zaključna razmatranja

Svesno je uzet u obzir institucionalni položaj sportista u cilju otkrivanja organizacione struktute Crnogorskog Olimpijskog pokreta sa akcentom na Nacionalne sportske saveze kao ključnog segmenta (organizacionog). Postoje dva glavna razloga zašto je izabran ovaj princip. Kao prvo, nema mnogo studija o aspektima odnosa u sportskim organizacijama što se tiče položaja sportista. Kao drugo, u zemlji koja je u tranziciji, pravne osnove treba smatrati temeljom za izgradnju odnosa. Relacione forme su uključene putem izgradnje institucije u cilju zaštite položaja sportiste s jedne strane i poboljšanja mogućnosti za razvoj ukupnog državnog potencijala kroz Crnogorski Olimpijski pokret. Cilj ovog rada nije da se suprotstavlja postojećim strukturama, već da ukaže na ugroženi položaj sportista i da posluži kao smernica (sportistima da preuzmu odgovornost) za poboljšanje organizacione strukture Crnogorskog Olimpijskog pokreta.

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Tabele moraju biti označene arapskim brojevima (npr. tabela 1, tabela 5). Svaka tabela mora biti razumljiva i bez čitanja teksta.

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MANAGEMENT IN SPORT
Scientific Journal in the Filed of Management in Sport
Vol. 5 (2014), No 1 (1-)
ISSN 2217-2343

Published by
Faculty of management in sport, *Alfa* University, Belgrade, Palmira Toljatija 3

For publisher
Dragan Životić, Ph.D. Dean of Faculty of management in sport, *Alfa* University

Print and Design
3D+, Belgrade

Copies:
100 copies

ALFA UNIVERSITY
Faculty of Management in Sport

MANAGEMENT IN SPORT

Scientific Journal in the Filed of Management in Sport

Belgrade, 2014

CIP - Katalogizacija u publikaciji
Narodna biblioteka Srbije, Beograd

005:796

MENADŽMENT u sportu : naučni časopis iz oblasti menadžmenta u sportu / glavni urednik Dragan Životić ; odgovorni urednik Violeta Šiljak = Management in sport : scientific journal in the field of management in sport / editor-in-chief Dragan Životić ; responsible editor Violeta Šiljak. - Vol. 1, No. 1 (2010)- . - Beograd (Gradski park br. 2) : Fakultet za menadžment u sportu, Alfa Univerzitet, 2010- (Beograd : 3D+). - 23 cm

Dva puta godišnje
ISSN 2217-2343 = Menadžment u sportu
COBISS.SR-ID 175134220

A WORD FROM THE EDITOR

Dear Sirs,

In front of You is a new issue of "Management in Sport" - a scientific journal in the field of management in sport. Publisher is the Faculty of Sport Alfa University in Belgrade. The journal is an important source of new scientific and technical information, as the only of its kind in the region. The editorial board of the journal is committed to upholding the reputation and the level of significance of the magazine. The journal is published annually with the works to be published in Serbian and English.

We invite all interested researchers in the field of management in sport and other related fields associated with the sport to its scientific and technical projects contribute to the development of the magazine.

Violeta Šiljak, General Editor

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UDC: 796.433.1.015
(Original scientific paper)

THE EFFECTIVENESS OF TRAINING THROWING SHOT PUT USING TWO EXPERIMENTAL METHODS OF TRAINING – TRAINING AND TRADITIONAL, STUDENTS OF PHYSICAL EDUCATION AT THE UNIVERSITY OF YARMOUK, JORDAN

Abd - Alkhareem Makhadmeh
Faculty of Physical Education, Yarmouk University, Jordan

Abstract

The aim of this study is to determine the effectiveness of two methods of shot put teaching: traditional and training, with students of athletics at the Faculty of Physical Education and the effects of these techniques on the overall results in throwing shot put and the development of some physical properties. Two groups of students of the Faculty of Physical Education were involved (20 students). Each group consisted of 10 students. The results showed that there were significant statistical differences between the two measurements before and after the experiment in each group, showing physical development of abilities and the results of throwing shot put. After the experiment, between two groups of indicators were noticed differences.

Keywords: effectiveness, throwing, shot put, experimental methods, training, traditional

Introduction and Importance of the Study

Communication of scientific progress of physical education and the development of technology takes place in the various fields of sports science, planning and learning styles. The student is in the focus of the educational process and represents its foundation. The development of students' abilities is the main purpose of teaching. Therefore, educational institutions should pay special attention to the student (Davis, 1971), using educational technology which is a transfer of theoretical education into practice. According to Inayat Abdul Fattah and Abbas (1987) the effectiveness of the educational process reflects in selecting the most appropriate methods and techniques to help students achieve their goals. The point is to find the best training methods that can help teachers to provide students to achieve educational goals. Moston and Ashor (1994) argued that learning is a decision divided into individual and collective learning on the steps and stages of the lesson. Kilani (2003), Derry (1999) and Derry and Ahmed (1987) argued that it is possible to use more than one method in one lesson.

The Value of Research

To determine the best way of throwing shot put in the core curriculum of athletics at the Faculty of Physical Education at Yarmouk University in Jordan.

The research problem:

1. Effective use of the two teaching methods (traditional and training) for training throwing shot put and their influence on some physical properties.
2. To determine the best method for learning throwing shot put.

Hypothesis:

1. The existence of statistically significant difference between measurement resaults before and after the experiment, and the effectiveness of teaching methods (traditional and driving range) on certain physical properties and results in throwing shot put.
2. The existence of statistically significant differences between the measurement resaults of the following two methods for each group.

The course of study:

The researchers used an experimental approach to learning. Two groups were created, one was based on the traditional method, and the other on training.

The population of subjects:

None of the subjects had not previously dealt with throwing shot put. Subjects were divided into two groups of 10 people. The first group used traditional method. The second used the training method of teaching. It should be noted that all of the students were under the unified leadership of the researchers with specialized assistants in athletics.

The average values and variations in the effectiveness of two methods during examination of training (indicated by "T")

	Technique	Number	The average value	Deviations	"T"	Degree of freedom	The static value
Age / year	Training	10	20.05	665.	1.311	18	206.
	Traditional	10	19.65	682.			
Height / cm	Training	10	163.85	3.370	998.	18	331.
	Traditional	10	66.20	5.735			
Weight / kg	Training	10	66.20	8.414	718.	18	482.
	Traditional	10	63.30	9.612			
The flexibility of the body	Training	10	7.80	4.315	935. 1-	18	069.
	Traditional	10	11.70	4.692			
Throwing medical ball 1kg	Training	10	4.34	497.	068.-	18	947.
	Traditional	10	4.36				
Jumping from a place / cm	Training	10	1.64	951.	739.	18	470.
	Traditional	10	1.41	176.			
Body Balance / sec	Training	10	2.22	412.	378. 1-	18	185.
	Traditional	10	2.58	713.			
The results throw throwing	Training	10	5.37	652.	1.986	18	062.
	Traditional	10	4.65	943.			

Table (1). There is no statistically significant differences at the level of ≤ 0,05 between the two groups and both the traditional and training method indicate the equality of the two groups in these variables.

Ways of implementation of the study:

- Measure up experiment was carried out to study for each group in 09/20/2012. It took time to study for six weeks, three times a week, teaching hour (50 minutes).
- After the experiment, measurements took place on 3/11/2012 according to the core curriculum.

Results and interpretation:

The results are related to the first hypothesis: "The existence of statistically significant difference between measurement resaults before and after the experiment, and the effectiveness of teaching methods (traditional and driving range) on certain physical properties and results in throwing shot put."

Table (2) shows the averages and standard deviations of the T-test for the traditional method.

	application	number	The average value	deviations	"T"	degree of freedom	The statistics
Weight / kg	before	10	63.30	9.612	3.653	9	005.
	after	10	61.86	8.918			
The flexibility of the body	before	10	11.70	4.692	6.919-	9	000.
	after	10	16.10	5.666			
Throwing medical ball 1kg	before	10	4.36	902.	5.676	9	000.
	after	10	4.91	880.			
Long jump	before	10	1.41	176.	8.318-	9	000.
	after	10	1.55	154.			
balance	before	10	2.58	713	3.892-	9	004.
	after	10	3.02	744.			
The results of shot put	before	10	4.65	943.	8.418-	9	000.
	after	10	5.69	967.			

Table (2). The existance of statistically significant differences in the level of significance (α ≤ 0,05) between the average measurements before and after the study. Students of the traditional method have shown positive results after a program of lessons.

To determine the differences before and after the training method, there is a table number (3) that illustrates this:

	Appointment	Number	The average value	Deviation	"T"	Degree of freedom	Statistical significance
Weight / kg	Before	10	66.20	8.414	322.	9	755.
	After	10	65.98	7.558			
The flexibility of the body	Before	10	7.80	4.315	3.000-	9	015.
	After	10	9.80	5.371			
Throwing medical ball 1kg	Before	10	4.34	497.	6.771-	9	000.
	After	10	4.64	512.			
Long jumping from a place	Before	10	1.64	951.	792.	9	449.
	After	10	1.40	107.			
balance	Before	10	2.22	412.	2.982-	9	015.
	After	10	2.43	356.			
Result Shot Put	Before	10	5.37	652.	4.993-	9	001.
	After	10	5.60	596.			

In Table 3, there is a statistically significant difference at a significance level (0,05 ≤ a) between the average measurements before and after the study. Students of the training method showed positive results after a program of lessons.

The results are related to the second hypothesis: "The existence of statistically significant differences between the measurement resaults of the following two methods for each group."

To verify the validity of this hypothesis, average values, standard deviations and T-test for variables of research have been used, to find the difference between two measurements of two methods of teaching and Table (4) illustrates this.

Average values and variations in the effectiveness of two methods during during examination of training (indicated by "T") after the experiment.

	Technique	Number	The average value	Deviation	"T"	Degree of freedom	Statistical significance
Weight / kg	Training	10	65.98	7.558	1.115	18	280.
	Traditional	10	61.86	8.918			
The flexibility of the body	Training	10	9.80	5.371	2.552-	18	020.
	Traditional	10	16.10	5.666			
Throwing medical ball 1kg	Training	10	4.64	512.	836.-	18	414.
	Traditional	10	4.91	880.			
Long jumping from a place	Training	10	1.40	107.	2.514-	18	022.
	Traditional	10	1.55	154.			
Balance	Training	10	2.43	356.	2.240-	18	038.
	Traditional	10	3.02	744.			
Result Shot Put	Training	10	5.60	595.	245.-	18	809.
	Traditional	10	5.69	967.			

In Table 4, a statistically significant difference in the level of significance (0,05 ≤ a) is missing in all indicators of two groups.

Conclusions:

With the help of our teaching methods following results were achieved:

1. The group of students who used the traditional method showed a significant improvement in the level of physical abilities as well as the results in throwing shot put.
2. Group of students who used the training method showed a significant improvement in the level of physical abilities as well as the results in throwing shot put.
3. Two groups of students (traditional and training) showed no statistically significant differences between the two groups of all indicators of research.

Recommendations:

1. Use the traditional method of learning the skills in athletics.
2. A training method can be used in the training of athletes.
3. Use of both methods (traditional and training) in athletic education of all students.

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UDC: 796.352.012.53
(Original scientific paper)

THE NEW TRAINING TECHNOLOGIES IN GOLF

Milan Čoh
Faculty of Sport, University of Ljubljana, Slovenia

Abstract

Golf is an extremely complex game which depends on a number of interconnected factors. One of the most important elements is undoubtedly the golf swing technique. High performance of the golf swing technique is generated by: the level of motor abilities, high degree of movement control, the level of movement structure stabilisation, morphological characteristics, inter- and intro-muscular co-ordination, motivation, and concentration. The golf swing technique was investigated using the biomechanical analysis method. Kinematic parameters were registered using two synchronised high-speed cameras at a frequency of 2.000 Hz. The sample of subjects consisted of three professional golf players. The study results showed a relatively high variability of the swing technique. The maximum velocity of the ball after a wood swing ranged from 233 to 227 km/h. The velocity of the ball after an iron swing was lower by 100 km/h on average. The elevation angle of the ball ranged from 11.7 to 15.3 degrees. In the final phase of the golf swing, i.e. downswing, the trunk rotators play the key role.

Keywords: golf, technique, kinematics, velocity parameters

Introduction

Performance in golf depends on numerous factors, among which the key importance is undoubtedly attributed to those defining the technique of stroke. In the history of golf, the study of the secrets of this element was constantly present in the play of numerous amateurs as well as professionals. Many books and manuals, written as a rule by grand masters of the golf game, were dedicated to this "cult event" (Allen, 2007).

Completely new possibilities in the field of studying the stroke technique have opened up by modern video technique used in conjunction with computer technology. By means of special software tools we can establish the most important quantitative biomechanical parameters of the stroke in a three-dimensional space (Simeon, Coleman, Rankin, 2005). In the present study, we use the method of kinematic analysis that ensures accurate recording and evaluation of the most important parameters of the stroke such as paths - trajectories, the values of angles, speeds, angular speeds and accelerations for individual parts or segments of the body, and the parameters of the movement of the club and ball. The mentioned data are obtained by transferring video images into the computer, using the procedure of digitalisation of a 15-segment model of the golf player. Since we have the player's data in a three-dimensional space, we can study the player in any phase of the stroke crucial for the technique.

On the basis of the available literature, we find that in the course of the development of the golf game, the technique of strokes changed markedly (Hay, 1985; Allen, 2007; Owens,

1992). Today there still exist large individual differences in the stroke technique between the best professional players, which fact is not surprising since we know that the said differences are the result of the differences in their motor abilities and anthropometric characteristics. The stroke in golf, or more precisely, its accuracy, directly affects the playing result, therefore it is not surprising that the search for new approaches and methods to improve this element of the play is always equally topical and present in the training process. A high degree of the standardisation of movement, co-ordination in time and space (timing), the control of the movement of the player-club-ball system are those key factors that in interaction generate the successfulness of a stroke and thereby to a large extent also the playing performance (Wiren, 2010; Simeon, Coleman, Rankin, 2005; MacKenzie, Springings, 2008).

In view of the fact that the quality of a stroke in golf is one of the most important factors, the object of the study was to identify some most important quantitative kinematic parameters in two different strokes - namely, a stroke with a wood and with an iron - and to establish the differences between the players and the differences arising from the use of the two different types of clubs.

Methods

The study is as a result of the co-operation between the Professional Golf Association of Slovenia and the Laboratory for Biomechanical Measurements at the Faculty of Sport of Ljubljana. Measured were three Slovene professional golfers (M.L., D.J., and J.G) each of whom performed three strokes with two different clubs (wood, iron). To establish kinematic parameters, a 3-D video system for kinematic analysis called APAS (Ariel Performance Analysis System) and CMAS (Consport Motion Analysis System) were used. The stroke technique was filmed with two High-Speed cameras (JVC TK 1281) placed perpendicular to each other. The cameras were image-synchronised. The cameras were placed in front of the golfer at an angle of 45° and 135°, respectively, to the direction of the stroke. The frequency of shots was 2000 Hz. The masses and centres of gravity of the segments and the common centre of gravity of the golfer's body were calculated according to the anthropometric model (Dempster, 1955). All kinematic parameters were filtered with a Butterworth filter of 7^{th} degree. The space was calibrated with a reference cube and defined with the horizontal X-axis, vertical Y-axis, and transversal Z-axis. The criterion for the selection of the stroke for analysis was the launch speed of the ball.

Results and Discussion

The results of the kinematic analysis of the stroke with a wood and the stroke with an iron point to it that in this respect there also exist large individual differences between the golfers in the sample selected. The strokes differ both in the speed of individual body segments, the speed of the club, and the speed of the ball at the moment of impact. Considerable differences can also be established in the trajectory of the clubhead tip in all phases of the stroke**.** From Figure 1 it is possible to establish the values of the speed of the ball, the speed of the clubhead tip, and the speed of the right wrist at impact.

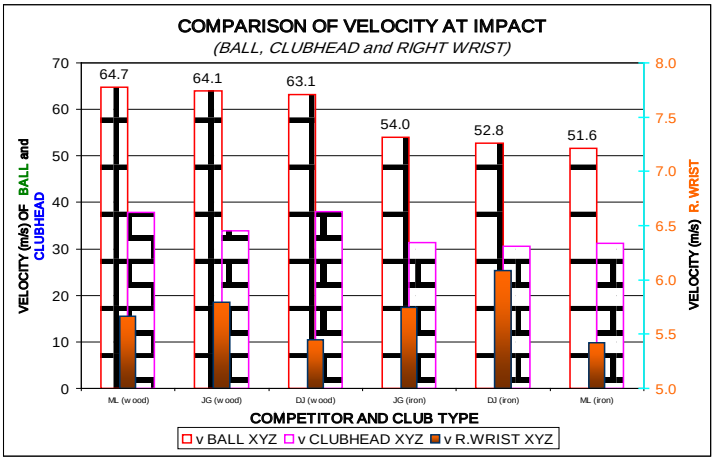

Figure 1. Speed of the ball, speed of the clubhead tip, and speed of the right wrist at impact in the stroke with a wood and an iron, respectively

The highest speed of the ball in the stroke with a wood was attained by M.L., 64.7 m/s (233 km/h), the next was J.G. who reached the speed of 64.1 m/s (230 km/h), and the lowest speed, 63.1 m/s (227 km/h) was achieved by D.J. The average speed is 63.9 m/s (231 km/h). The speeds of the balls when performing the stroke with an iron were on average by 10 m/s smaller in all three golfers. From figure 4 it can also be concluded that the contribution of the speed of the clubhead tip and the right wrist to the launch speed of the ball can vary considerably. The speed of the ball is not necessarily the highest in the player who achieves the highest speed of the clubhead tip at impact because the stroke can be performed eccentrically and hence a part of the speed of the club is utilised for the rotation of the ball.

Figure 2 shows the principles of the changing of the speed of the clubhead tip and the right wrist as a function of time in three key phases of the stroke. The speed of the clubhead tip increases gradually up to the last third of the backswing and than decreases down to the value 0 due to the change of the direction of movement into the downswing phase. In the downswing phase there occurs a steep increase in speed up to its maximal value just before the point of impact.

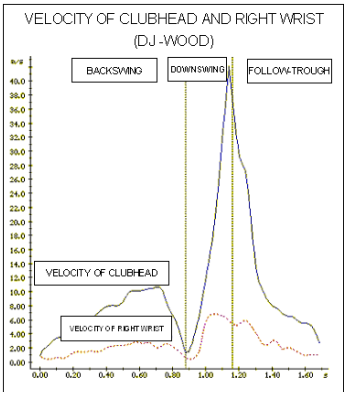

Figure 2. Speed of the clubhead tip and the right wrist as a function of time for a wood.

The speed decreases gradually until it stops in the finish of the stroke. A very similar tendency of speed changing has also the right wrist, its speed being on average by 6.5 times smaller than that of the clubhead tip. The average maximal speed of the clubhead tip in the golfers of our sample is 36.6 m/s (132 km/h). The largest speed of the clubhead tip attained D.J., 41.9 m/s (151 km/h). However, the results obtained must be to a certain extent taken into account with a reservation since the technology available to us for carrying out these measurements has certain limitations. The main limitation is a relatively low frequency (50 Hz) of the used cameras. For absolutely correct studying of the issues of this kind, special video cameras with a frequency of 500 or more frames per second were necessary.

The angular parameters in the position at the top of the backswing (the begin of the downswing) and impact provide some essential information on the quality of the stroke. The largest differences between golfers occur in the angle between the hip axis and the direction of the stroke at the moment of impact. J.G. has the largest angle at this point, namely 45°. As regards other angles, there are no significant differences between the golfers. The average value of the angle of the shoulder axis relative to the direction of stroke at the top of the backswing amounts to 104.9°, here the largest angle is attained by D.J., namely 109.3°; the angle attained by J.G. is 105.4°; and the angle attained by M.L., 100° (a larger angle means a stronger "winding" and "thereby a stronger possibility of the utilisation of the elasticity of the trunk rotators). In the impact phase, the angle between the shoulder axis and the direction of the stroke amounts on average to 13°; here, the largest angle is achieved by J.G., namely 17°. At the top of the backswing, the average angle between the shoulder axis and the hip axis is 73° in all three golfers. The most pronounced "winding" of the trunk has thus D.J., namely 76°, then follows J.G with 72°, and M.L. with 71°.

On the basis of the changing of the angles between the various segments of the body and the angle of the vector of the velocity of the clubhead tip (Figure 3) we can establish the entire complexity of the time and spatial synchronisation (timing) in performing the stroke.

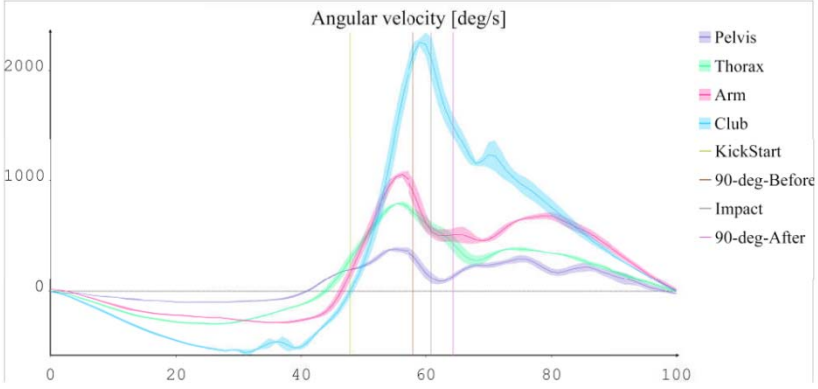

Figure 3. Angle between the hip axis and shoulder axis, angle between the shoulder axis and the arm, and angle of the vector of the speed of the clubhead tip relative to the horizontal (X-axis). The first vertical line designates the position of the top of the backswing (end of backswing), and the second one the position of impact.

In the beginning of the stroke, the shoulder and hip axis are almost parallel, then the angle between them gradually increases until it reaches the half of the backswing phase. In the second half of the backswing, the angle increases rapidly, and begins to fall off steeply in the beginning of the downswing, which is the result of the "unwinding" of the trunk rotators. The

angle between the shoulder axis and the arm in the downswing phase indicates that eccentric-concentric muscular strain occurs.

Conclusion

The kinematic analysis of the golf stroke is one of the first studies of this kind by means of which we wanted to establish some basic parameters of the technique for a wood and an iron club. The results point to considerable individual differences between golf players included in the experimental procedure of biomechanical measurements. The golfers differ above all in the speed of the club, the speed of the ball at the moment of impact, further, in the trajectory of the clubhead tip in all phases of the stroke, and in the timing of the shoulder and hip axis. It were without doubt reasonable to continue with such studies also in the future and thus to offer both players and coaches a suitable support in terms of modelling the technical training and a more objective control of the technique of the stroke as the key element of the golf game.

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UDC: 796.332.058
(Original scientific paper)

DIFFERENCES IN INDICATORS OF SITUATIONAL EFFICIENCY BETWEEN FOOTBALL TEAMS ON DIFFERENT LEVELS OF COMPETITION

Alek Kapidžić, Damir Ahmić, Adnan Salkić, Jasmin Mehinović, Ismet Bašinac
Faculty of Physical Education and Sport

Abstract

The main goal of this study is to obtain information on the frequency of technical and tactical display, and on the basis of parameters evaluating offensive and defensive elements of football. For the needs of this study the following indicators of situational effectiveness were analyzed: GOALS –number of goals scored; SHOT ON TARGET – number of shots on goal; SHOT OFF TARGET – number of shots that miss the goal; CORNER KICKS – number of corner kicks and FOULS – number of fouls received. Five games on five different levels of competition were analyzed: thirty (30) games of BH Premier League from 2008/2009 season, twenty-five (25) games from Euro 2008, forty (40) games of European League from 2011/2012 season and twenty-nine (29) games from 2010 World Cup. From statistical analyses used for the needs of this research, Median test was applied. This test helps us to determine whether there are any differences between the entity groups, but we cannot know among which groups that difference is the most expressed. Therefore, the results obtained in this research were transformed on a higher level with the help of Bloom's procedure, and after that univariate analysis of variance was used. In order to reduce the probability of a possible error within univariate analysis of variance and because of higher number of mutual comparisons, and also because of groups with unequal number of entities, Scheffe's method was used.

Keywords: difference, efficiency, football, level

Introduction

On the basis of game analysis it is possible to obtain the overview of certain situations that occur during a football match. Such information offer a possibility to identify the advantages which can later be maintained or improved, and disadvantages, which suggests areas that need improvement. The use of tactical variants within the game is not standardized because it depends on large number of factors, primarily of technical, tactical as well as physical preparation of players. Researches that covered this problems have tried to show which technical and tactical displays distinguish winning from losing teams (Lago-Penas, Lago-Ballesteros, Dellal & Gomez, 2010; Rowlinson, & O'Donoghue, 2007; Grant, Williams & Reilly, 2009). We have to emphasize that the analysis of football is very complex. Complexity is reflected in large number of different situations in which players can find themselves (Jordi, Waitzman & Nunes-Amaral, 2010). Each situation requires the use of certain technical and tactical actions aimed at solving the given situation. With regard to the fact that the game of football is

in rapid development and improvement, we can say that information obtained through this research cannot be a long term solution for the clear picture of how to apply technical and tactical elements. By detecting certain technical and tactical actions and their frequencies, we can predict which technical and tactical elements contribute in improving the quality of football (Grant, et.al. 2009). For success in football, technical and tactical element shot on goal is very important, which was analyzed in this study as well. Efficiency of shooting on goal (goal scored) is one of the important factors distinguishing winning from losing teams. Goal scoring in football depends on technical and tactical domination of one team. Also, one of the factors that influence shooting efficiency is the quality of passing i.e. assisting (Armatas, et al.2009; Hewer & James, 2004; Njororai, 2004; James, Mellalieu & Holley 2002; Hughes & Franks 2005). One segment of football, which is the basis of this research, is shot on goal frequency with respect to distance from goal. By this way we want to obtain information whether teams have more frequent use of shooting on goal inside or outside the box with respect to the level of competition. Previous researches have helped obtain data which show that these parameters are also variable with respect to the level of competition (Yiannakos & Armatas 2006; Carling, Williams, & Reilly 2005; Janković, Leontijević, Jelušić, Pašić, & Mičović, 2011;). Some authors have also obtained data which show that winning teams had larger shooting frequency than losing teams within the same level of competition (Szwarc, 2004; Hughes & Snook 2006).

Goal scoring is determined by technical characteristics and use of player's individual tactics in completing a shot on goal. Group offensive tactics is important in creating a situation for getting in the position to shoot. Besides the above mentioned, when it comes to creating better situation for a shot on goal and goal scoring, the opponent's tactics is also important. If defensive players by using their own tactical actions give forwards enough time and space, than their attacks on goal will definitely be more successful (Hughes, & Churchill, 2005; Lago-Ballesteros, & Lago-Penas 2010; Engelbrecht, 2010). However, we have to emphasize here that accomplished frequency of shooting on goal depends of effective playing time during a match. Therefore, within this study we also took into consideration the frequency of standard situations (fouls and corner kicks) that occur in a football match. Each whistle stops the game and reduces effective playing time. These parameters directly influence and determine efficiency of a team which is reflected through shots on goal and goals scored (Engelbrecht, 2010; Carling, et.al. 2005; Luhtanen, Belinskij, Hayrinen & Vanttinen, 2001). The main goal of this research is to determine whether there are differences between national teams competing on international level of competition and teams playing in national leagues. In this research we also took into consideration parameters of situational efficiency for teams competing in Premier League of Bosnia and Herzegovina in 2008/2009 season, so that we can compare them with teams that played on a higher level of competition. For a long period of time, teams from our country have not been good enough to qualify for one of the stronger levels of competition. If we raise the level of quality for our national league, Bosnian national team will certainly have better quality. In other words, we want to use this study to obtain information on the frequency of using technical and tactical display which evaluates offensive and defensive elements of football. By this way, mainly from the aspect of Premier League in Bosnia and Herzegovina, we can see in which segments we are weaker, equal or stronger in comparison to stronger levels of competition.

Methods

Entity Sample

For the needs of this research, games form five different levels of competition were analyzed. We analyzed indicators of situational efficiency in thirty games played in Bosnian Premier League for 2008/2009 season. Within these thirty games we obtained sixty entities, and entities within this group are marked as group entities "Premijer 2008". We also analyzed twenty five games played on Euro 2008, held in Austria and Switzerland. This helped us obtain fifty entities within this group, which are marked as"Euro 2008" group entities. Within the Champions League we analyzed forty games played during 2011/2012 season. Through this analysis we obtained eighty entities within this group, which are marked as "Champions League" group. We analyzed forty games within the European League for 2011/2012 season and obtained eighty entities within this group. Entities from this group are marked as "European League" group entities. We included one more level of competition in the analysis, and that was 2010 World Cup held in South Africa. We took into consideration 29 games from the World Cup and by that way obtained 58 entities. Entities within this group are marked as "2010 World Cup" group entities.

Data Collection Methods

Data collection on situational efficiency of teams participating in Bosnian Premier League during the 2008/2009 season was performed by a measuring team that analyzed recorded games and registered the data in specially adapted forms. Before analyzing recorded games and data registering, the measurement team performed a trial measurement of certain technical and tactical elements of situational efficiency, i.e. variables chosen for this research. By this way, members of the measuring team were introduced to variables they need to monitor and register in the form. They were also explained criteria for all variables they were monitoring, so that possibility of making the same mistakes while analyzing a game could be reduced. The measurement team consisted of: five professors of Physical Education and Sport and five coaches from the football school "Eurofootball". After the trial measurement they were divided into two groups and each group analyzed all games. After the analysis was completed, results of both groups were summed up and compared, in order to get as objective indicators as possible. By comparing the obtained data, we learned that there were no deviations in analyzed variables between the two measurement groups, which tells us that they had similar criteria.

Data on situational efficiency of national teams that took part in Euro 2008 were obtained from official website www.euro2008.com which offered official stats from the European football championship. Data on situational efficiency for 2011/2012 Champions League and European League season were obtained from official website of UEFA www.uefa.com. Data on situational efficiency of national teams that took part in the World Cup 2010 were obtained form official FIFA website www.fifa.com.

Variable Samples

Variables within this research consist of technical and tactical elements used by both teams during a match. These statistical indicators are promoted by FIFA and UEFA for all competitions organized by them. For the needs of this research, we took five variables into the sample.

GOALS – number of goals scored,

SHOT ON TARET – number of shots on goal;

SHOT OFF TARGET – number of shots that miss the goal;

CORNER KICKS – number of corner kicks;
FOULS – number of received fouls.

Statistical Procedures

For determining differences between the teams taken in the entity sample we used Median test. By using Median test we can see whether there are any differences between entity groups, but we cannot know between which groups is the difference most expressed. Because of this, data obtained through collecting process will be transformed by Bloom's procedure in order to transform them on a higher level. After that we will apply univariate analysis of variance by using Post Hoc comparison. In order to reduce probability of making mistakes because of higher number of mutual comparisons and because of groups with unequal number of entities, Scheffe'e method is used.

Results

On the basis of obtained results presented in table 1, we can see in which of the used variables arithmetic means differ among themselves. We can see that in variables number of scored goals and number of shots on target there are no statistically significant differences between entity groups. In variable number of shots off target, we identified statistically significant differences between "World Cup 2010" group and all other groups. In variable number of corner kicks, we identified no statistically significant differences between the groups. And finally, in variable number of committed fouls we identified statistically significant differences between "Premijer 2008" and all other groups. Also, in the same variables there is a difference between "Euro 2008" group and other groups except " World Cup 2010" group.

Table 1

		GOALS		SHOT ON TARGET		SHOT OFF TARGET		CORNER K ICKS		FOULS	
		Median (1.00)		Median (5.00)		Median (6.00)		Median (4.50)		Median (13.00)	
		ANOVA		ANOVA		ANOVA		ANOVA		ANOVA	
European League	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	Champions League	.0260886	.987	-.0464477	.901	.0115546	.999	.0407754	.938	-.0570092	.751
	Premijer 2008	.0295073	.984	-.1118220	.266	-.0187802	.995	.0395849	.957	-.3593710	.000
	Euro 2008	.0303170	.986	-.1027617	.411	-.0499542	.851	-.0110084	1.000	-.2039190	.001
	World Cup 2010	.0693113	.729	-.0787755	.640	-.4388800	.000	-.0132021	.999	-.0975708	.325
		Median (1.00)		Median (5.00)		Median (5.00)		Median (4.00)		Median (14.50)	
		ANOVA		ANOVA		ANOVA		ANOVA		ANOVA	
Champions League	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	Eurpean League	-.0260886	.987	.0464477	.901	-.0115546	.999	-.0407754	.938	.0570092	.751
	Premijer 2008	.0034186	1.000	-.0653743	.774	-.0303349	.967	-.0011905	1.000	-.3023619	.000
	Euro 2008	.0042284	1.000	-.0563140	.879	-.0615088	.725	-.0517838	.910	-.1469099	.046
	World Cup 2010	.0432227	.939	-.0323278	.980	-.4504346	.000	-.0539775	.883	-.0405616	.937

	Median (1.00)			**Median (6.00)**		**Median (6.00)**		**Median (4.00)**		**Median (21.50)**	
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**	
Premijer 2008	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	European League	-.0295073	.984	.1118220	.266	.0187802	.995	-.0395849	.957	.3593710	.000
	Champions League	-.0034186	1.000	.0653743	.774	.0303349	.967	.0011905	1.000	.3023619	.000
	Euro 2008	.0008098	1.000	.0090604	1.000	-.0311739	.976	-.0505933	.932	.1554520	.048
	World Cup 2010	.0398041	.964	.0330465	.983	-.4200997	.000	-.0527870	.912	.2618002	.000
	Median (1.00)			**Median (5.00)**		**Median (6.00)**		**Median (5.00)**		**Median (17.00)**	
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**	
Euro 2008	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	European League	-.0303170	.986	.1027617	.411	.0499542	.851	.0110084	1.000	.2039190	.001
	Champions League	-.0042284	1.000	.0563140	.879	.0615088	.725	.0517838	.910	.1469099	.046
	Premijer 2008	-.0008098	1.000	-.0090604	1.000	.0311739	.976	.0505933	.932	-.1554520	.048
	World Cup 2010	.0389943	.972	.0239862	.996	-.3889258	.000	-.0021937	1.000	.1063482	.352
	Median (1.00)			**Median (6.00)**		**Median (15.00)**		**Median (5.00)**		**Median (15.00)**	
	ANOVA			**ANOVA**		**ANOVA**		**ANOVA**		**ANOVA**	
World Cup 2010	Scheffe test	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.	Mean dif.	Sig.
	European League	-.0693113	.729	.0787755	.640	.4388800	.000	.0132021	.999	.0975708	.325
	Champions League	-.0432227	.939	.0323278	.980	.4504346	.000	.0539775	.883	.0405616	.937
	Premijer 2008	-.0398041	.964	-.0330465	.983	.4200997	.000	.0527870	.912	-.2618002	.000
	Euro 2008	-.0389943	.972	-.0239862	.996	.3889258	.000	.0021937	1.000	-.1063482	.352
	Median Test Sig.	.626		Median Test Sig.	.079	Median Test Sig .	.000	Median Test Sig.	.520	Median Test Sig.	.000

Discussion

Obtained results clearly show statistically significant difference between "World Cup 2010" and all other groups in variable number of shots off target. We see that entities of this group had higher average of shots on target in comparison to other groups. It should be pointed out that the frequency of shots on target depends on technical qualities of players, individual tactics of players who are involved in the play, to the tactics of opponents (Armatas, et al.2009; Hewer & James, 2004; Njororai, 2004). For a team to create better position for a shot on goal, it needs to have players with high technical qualities in order to make a pass on time. Some authors came to a conclusion (Armatas, et al.2009; Lago-Penas, Lago-Ballesteros, & Rey, 2011) that championship contenting teams made higher number of shots on opponent's goal inside the box from lower-ranked teams. This is influenced by technical qualities of play-

ers, team chemistry and ability to perform tactical variations and create better position for a shot on goal. All groups (teams/national teams) that were analyzed score one goal per match. In accordance with this fact we can say that group "World Cup 2010" is much less efficient in performing shots on goal from the other groups, with regard to completed frequency of shooting on goal. Based on the results of this research we can say that groups (teams / national teams) that have higher shooting efficiency also have better technical and tactical display. To be more accurate, selection policy of strikers for top quality teams is getting closer to selecting strikers that have higher average of efficiency when it comes to shooting on opponent's goal. This is proved by the fact that a large number of researches is concerned with the analysis of successful shots average, i.e. shots that found back of the net (Bell, Walker, McRobert, Ford & Williams, 2006; Hughes, & Petit, 2001). Conclusions in previous researches showed decrease in the number of attacks which ended in unsuccessful shot on goal (Jankovic, Leontijevic & Micovic, 2009). It should be pointed out that number of successful and unsuccessful shots on opponent's goal is also influenced by the distance from which the shots are taken (Engelbrecht, 2010). In accordance with this fact we can say that teams pay more and more attention on defending their own goal. Of course, frequency of shooting on goal depends on the opposing side's players as well, i.e. whether defenders by performing defensive tactics allow opposing strikers enough time and space for organizing their attack. In some previous researches authors determined that winning teams differ from losing teams in overall number of shots and number of shots on target (Lago-Penas, et al. 2010; Erdil, Bozkurt, & Isleyen 2010; Armatas, et al.2009). A shot on goal is a finishing element in the game of football and the aim of it is to score a goal. Shooting itself is also related to the intellect of players, therefore we can say that factors influencing a player or a team getting into position to shoot on goal as well as shooting on goal are various, starting from individual and group tactics all the way to the experience of players (Duch, Waitzman, & Nunes-Amaral, 2010). We think that quality of the final pass leading to a shot on goal is of great importance for creating a good opportunity for a shot on goal. Effective final pass is also influenced by time accordance between players who assist and players on the receiving end of a final pass. In relation to that it is important that player who makes the pass sees his teammate who is in position to shoot. Timely pass depends on technical qualities of players who are included in the play, but also on individual tactical abilities of players. Technical quality comes into full effect in a good assist. Tactical abilities of players in creating position for a shot on goal, come into effect when it comes to choosing a good position to shoot and in predicting movement of opponent's defenders which is important for a high quality final pass (Armadas, et al. 2009).

Statistically significant differences between the groups are present in variable number of fouls committed. As we can see from table 1, the highest number of fouls on a match was made by teams from "Premijer 2008" group, and then national teams from "Euro 2008" group. Therefore, we can conclude that effective playing time is less for these two entity groups in comparison to the other groups. An interesting fact is that there are no statistically significant differences between the groups in variables goals scored, number of corner kicks as well as in variable shot on target. We can say that "Premijer 2008" and "Euro 2008" groups for less effective playing time accomplished similar frequency in the above mentioned variables. Higher frequency of game stoppage can be related to tactical behavior of players within a team (cooperation), weaker player interaction after a steal as well as overall game strategy (Memmert, 2011; Memmert 2010; Bate, 1998). Higher frequency of received fouls per game can occur as a consequence of irrational tactical actions which would allow defenders to stop their opponents on time. Also, higher frequency of game stoppage can occur due to the lack of technical preparation as inadequate response to a given situation. Of course, for adequate

response to a given situation it is very important to have creativity of players which should be systematically developed through a long term process of player development (Hughes, & Franks, 2005; Hughes, & Churchill, 2005). Big number of fouls (game stoppage) doesn't have to be deficiency for teams. Efficient organization of after the whistle plays, especially in the opponent's side of the pitch is mainly influenced by tactical quality of players. It is necessary that in organizing attacks on goal players use their tactical actions for creating space, so that team / national team could organize a better and more efficient attack. Authors dealing with this issue (Fulurija, 210) have came up with results which point out that efficiency of after the whistle plays inside the box depends on the number of players participating in organizing those plays. In researches covering defensive elements in football (Lago-Penas, et al. 2011; Lago-Penas, et al. 2010) statistically significant differences between winning and losing teams in number of red and yellow cards were determined. These differences are to the advantage of losing teams which were defined as weaker teams. On the basis of obtained results by our research, we can say that it is evident that entities within "Premijer 2008" group are more inferior in terms of technical and tactical display in comparison to the other groups. Entities of "Euro 2008" group are also more inferior than entities of the groups with which statistically significant difference was determined. We have to point out that a certain percentage of fouls belongs to offensive players who commit fouls after they lose the ball near opponent's goal. This can be a part of team's strategy. That was how (Engelbrecht, 2010) the analysis of professional football teams showed that majority of fouls was committed by offensive players straight after they lost the ball. Game stoppage mostly resulted from offside and fouls. In accordance with obtained results, it is evident that if committed fouls are not part of the strategy, teams should work on tactical actions which would contribute to more efficient organization of after the whistle plays. All of this is related to technical and tactical quality of each player and their abilities to anticipate. It should be emphasized that reaction speed on the pitch is not determined just by time of reaction. This is exactly where importance of anticipation ability comes into full effect. Players with better anticipation abilities have quicker and more accurate reactions on both sides of the pitch (Abernethy, Wann, & Parks, 1998).

Conclusion

It is evident that for a long period of time teams from Premier League of Bosnia and Herzegovina haven't been able to qualify for a major football tournament. On the basis of this research we want to find information which will mainly be a positive influence on raising the quality of football in Bosnia and Herzegovina. We can see that teams from "Premijer 2008" group for less effective playing time created the same average of shots on goal. The same teams have the highest average of fouls committed per match. When we compare these parameters we can say that teams had an easy time creating positions for a shot on goal. This leads us to assumption that defensive players left opponent's offensive players enough time and space for organizing their plays. Therefore, these teams should pay more attention to group and individual tactics. Teams should constantly improve and modernize all technical and tactical elements (offense and defense) used in a match, with accent on as higher situational variance as possible. This would raise the quality of game from the tactical point of view. By this way players gain experience through a number of problematic situations that can occur during a match, and it also reduces possibility of surprises that opponent might throw at them. High frequency of game stoppages is obvious on this level of competition. As we pointed out, big number of game stoppages doesn't have to be a deficiency, but more attention should be paid on tactics of standard situations. Efficiency of completed after the whistle offensive plays doesn't depend only on tactical but also on technical quality. Therefore, raising the level

of players' technical preparation would lead to better conditions for raising the quality and rationalization of tactical variations used in a match. This is one of the conditions for raising overall quality of football on this level of competition. Obtained results lead us to think that it is necessary to direct practice process in football schools towards demands of top quality sports. This is possible by adapting practice, which would eventually produce players who can meet the standards of modern football. On each football match, number of possible situations is almost endless. Therefore, understanding the structure and logic of dealing with situations that occur in a match is very important. Understanding phases and sub-phases of a match becomes key and it is a precondition for continuous development of players and their overall quality as well as for team development.

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UDC: 796.325.012.1
(Original scientific paper)

LEG MUSCLE QUALITIES AND CHANGE OF DIRECTION SPEED OF VOLLEYBALL PLAYERS

Sunčica Poček, Milenko Vuković
Faculty of Sport and Physical Education, Novi Sad

Abstract

Volleyball is an open skill sport with explosive – dynamic muscle actions, jumping ability and speed in executing rapid, multidirectional movements. Twenty one collegiate volleyball players, (age 19.85 +/- 0.83 years; height 181.67 +/- 12.03 cm; weight 72.62 +/- 12.99 kg; training experience 6.76 +/- 2.21 years), were recruited for this study. The purpose of this study was to examine the relationship between leg muscle qualities and change of direction speed. The following tests were performed: Block jump, Spike jump, Standing broad jump, Jelka test, T – test, 93639 m test, and Dash 20 m. Pearson's coefficient of correlation from package SPSS 15.0 was used for data processing. The results showed that vertical jump abilities, straight sprinting speed and change of direction speed are distinct physical qualities. Therefore, training and testing these extremly important abilities for performance of volleyball players should be highly specific.

Keywords: volleyball, CODS, VJ

Introduction

Volleyball is an open skill sport with predominant anaerobic alactic acid power. The "kinanthropometric" profile of volleyball players includes great height, muscle power, jumping ability, velocity and coordination, all necessary in a game involving strength and elevation to block, strength and speed to spike, resistance to play the sets, as well as great technical ability. At higher skill levels, performance characteristics are mainly determined by speed and vertical jumping. The physical capacities determining an athletes' performance are explosive – dynamic muscle actions, jumping ability and speed in executing rapid, multidirectional movements (Ciccarone, Croisier, Fontani, Martelli, Albert, Zhang, Kloes, 2008).Serve, reception, set, attack and block are typical game actions that are decisive aspects of winning or losing in international competitions (Rodriguez-Ruiz, Quiroga, Miralles, Sarmiento, De Saa, & Garcia-Manso, 2011).

Many field and court sports involve some straight sprinting, but more often repeated short sprinting with changes of direction. The ability to sprint and change direction while sprinting is a determinant of sport performance in field and court sports, as evidenced by time and motion analysis, validation of testing batteries for elite and non-elite performers, and coaching analysis for sports such as rugby (Docherty, Wenger, & Neary, 1988; Meir, Newton, Curtis, Fardell, & Butler, 2001), field hockey (Keogh, Weber, & Dalton, 2003) and soccer (Reilley, Wiliams, Nevill, & Franks, 2000).

In an attempt to elucidate potential factors that influence agility performance, Young, James, & Montgomery (2002) proposed a deterministic model of agility (Figure 1). This is intended to indicate the main factors that determine agility, and can be applied to sports involving fast changes of direction such as most team and racquet sports. It highlights that the strength qualities of the leg muscles have potential to influence agility performance along with several other factors.

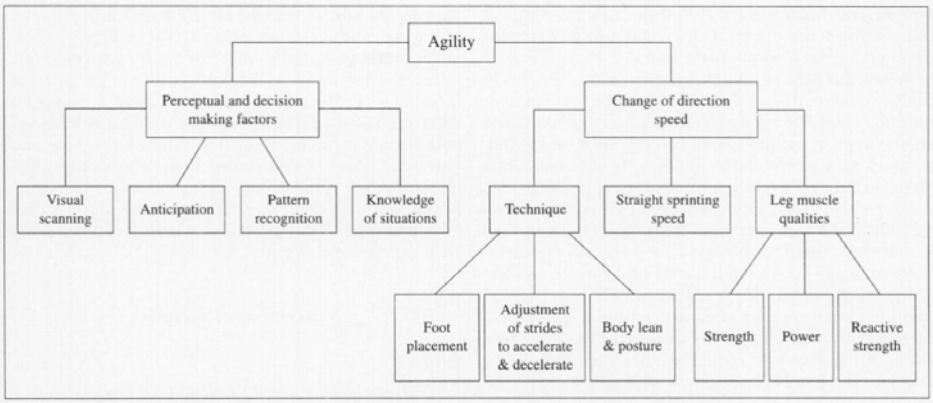

Fig. 1.—Model indicating the main factors determining agility. *Agility*: running speed with at least one change of direction performed in a competitive game. This may include being in possession of a ball or piece of equipment; *visual scanning*: ability to process visual information in competitive game; *anticipation*: prediction of an event in a game that influences the movements of a player in a game; *pattern recognition*: the ability to recognise patterns of play by an opposing team or player; *knowledge of situations*: knowledge of the probable movements of other players, based on previous experience of the game.

Sheppard and Young (2006) proposed a new definition of agility for sport as follows: "a rapid whole-body movement with change of velocity or direction in response to a stimulus". This new definition of agility recognizes both the cognitive and physical components involved in agility for sport.

Almost all existing literature that has attempted to describe relationships with some measure of agility or training to improve agility has used a timed task involving one or more changes of direction, also known as change of direction speed. Based on the similar results presented by Baker (1999), Buttifant, Graham, & Cross (1999), Draper and Lancaster (1985), and Young, Hawken, & McDonald (1996), straight sprint testing appears not to be related strongly to sprinting with changes of direction testing in subject samples of rugby, soccer and football players, respectively. Furthermore, and perhaps most importantly, straight sprint training does not improve performance in sprints with changes of direction (Young, McDowell, & Scarlett, 2001).

Based on the results of Djevalikian (1993), Webb and Lander (1983) and Young et al. (1996, 2002), but see Negrete & Brophy, 2000, concentric strength and power measures appear to be poor predictors of change of direction speed. Perhaps the difference observed between these studies is the nature of the task used to evaluate change of direction speed. Negrete and Brophy (2000) used a complex multi-directional task over short distances, whereas the others (Djevalikian, 1993; Webb & Lander, 1983; Young et al., 1996, 2002) used sprint tests that involve some straight sprinting and changes of direction while sprinting. It would appear that strength and power measures have an influence on change of direction speed (Negrete

& Brophy, 2000), but that this relationship might only be observable when comparing tasks involving changes of direction speed over short distances.

With this in mind, the purpose of this study was to investigate the relationship between change of direction speed, sprinting speed and power measures of the lower extremity of volleyball players.

Method

Subjects

Twenty one collegiate volleyball players (age 19.85 +/- 0.83 years; height 181.67 +/- 12.03 cm; weight 72.62 +/- 12.99 kg; training experience 6.76 +/- 2.21 years), were recruited for this study. The subjects were familiarized with the procedures involved in testing. All subjects received a clear explanation of the study, and written consent for testing was obtained.

Testing procedures

As per the normal testing protocol for this group, the subjects completed their typical practise warm-up prior to testing sessions. In brief, this warm-up included 10 minutes of general activity (light running with change of direction and accelarration), followed by 10 minutes of dynamic activity that increased in speed and intensity (skips, leg swings, arm swings), followed by 3-5 minutes of rest without static stretching, prior to commencing the testing session. Subjects were re-familiarized with the testing protocol.

The subjects performed three trials of each motor test, and the best trial from the attempts for each motor test, was kept for analysis.

Variables

The sample of measuring instruments consisted of seven motor variables: block jump (BJ), spike jump with three steps approach (SJ), standing broad jump (SBJ), Jelka test (JT), T test (TT), 93639m test and 20m dash (20m).

Statistical analysis

The data gained were subjected to statistical analysis in the SPSS 15.0 package. Central and dispersion statistics are shown in Table 1 for all variables, and the Pearson's correlation coefficient was used to calculate the relationship between variables (Table 2).

Results and Discussion

The descriptive statistics of the volleyball players are shown in Table 1. The table shows that the index of nutritional status for volleyball players is within the limits of normal (22.04), so these research subjects belong in the category of average nourished population. The Body mass index values seen in the literature for female volleyball players of different age, nationality and competition level vary between 20.5 kg/m^2 and 22.5 kg/m^2. The mean value in BMI found in the present study (21.41 kg/m^2) is corresponding to values reported in recent investigations (Gualdi-Russo & Zaccagni, 2001; Papadopoulou, Gallos, Paraskevas, Tsapakidou, & Fachantidou, 2002; Malousaris, Bergeles, Barzouka, Bayios, Nassis, & Koskolou, 2008), mean BMI values 22.1kg/m^2, 20.5kg/m^2, 21.9kg/m^2, respectively. Although the mesomorphy used to be the primary component of competitive female volleyball players somatotype in the last two decades, in the latest studies it appears that the ectomorphy may be taking over at the expense of mesomorphy.

Body height is considered a determinant factor for good performance in volleyball and,

together with its relation to body weight, is used as a criterion for the selection of promising volleyball players. The mean value of volleyball players' height in our study was 181.67 +/- 12.03 cm, with a range from 161 cm to 203 cm. When comparing the volleyball players of this study to other male and female volleyball teams, our subjects are inferior with regard to BH (Gualdi-Russo & Zaccagni, 2001; Papadopoulou et al., 2002; Malousaris et al., 2008; Sheppard, Cronin, Gabbett, McGuigan, Etxebarria, & Newton 2008;Carvajal, Betancourt, Leon, Deturnel, Martinez, Echevarria, Castillo, & Serviat, 2012), which can be explained due to comparable level of competition, and selection trough training history. In particular, the BH values of the present study are lower than those investigating others in the literature evaluating competitive female volleyball players. Body height and body weight of male and female volleyball players from National Team of Serbia from London 2012 are (mean value, N=20), 199.75 cm, 84.55 kg; 186.45 cm, 71.95 kg respectively, which is in accordance with demands of contemporary volleyball competition. The obvious differences seen in BH and BW between samples are expected, since the players of Serbian National Team and samples from A1 division (Gualdi-Russo & Zaccagni, 2001; Papadopoulou et al., 2002; Malousaris et al., 2008; Sheppard et al., 2008; Carvajal et al., 2012), go through a stricter selection procedure and may follow more closely professional advice regarding training and diet.

On the basis of these results, we can resume, that subjects in our study, by it's anthropometric characteristics, clearly belongs to the population of college students from Sports Sciences and close to the averaged values on their 20-years-old counterparts (Mihajlović, Petrović & Šolaja, 2011; Rakić, 2009).

Table 1. Descriptive statistics (M-Mean, SD-Standard deviation)

VARIABLES	Volleyball players (N=21)			
	M	SD	MIN	MAX
Age (decimal years)	19.85	0.83	18.94	21.89
Years of playing	6.76	2.21	3	12
Body height (cm)	181.67	12.03	161	203
Body weight (kg)	72.62	12.99	54	100
Body mass index (kg/m^2)	22.04	2.35	18.9	27.4
Block jump (cm)	271.53	19.76	237	311
Spike jump (cm)	287.68	22.74	245	318
Standing broad jump (cm)	234.17	37.14	164	313
Jelka test (0,1s)	35.60	3.79	27.69	41.45
T test (0,1s)	10.36	0.56	8.95	11.91
93639 m (0,1s)	7.79	0.40	7.11	8.52
20m dash (0,1s)	3.60	0.30	3.02	4.11

The correlation coefficients describing the relationships between the tests are shown in Table 2. Variables that represent change of direction speed ability T-test and 93639 m test are in statistically significant relationship only to each other (r=0.63; p=0.00) and to Jelka

test and Standing broad jump. Jelka test is the test of CODS ability but with different energy demands compared to T-test and 93639 m. Tests of different durations may be subject to influences of energetics rather than just assessing CODS ability. The complexity of each test can be categorized either by the number of changes of direction required or by the type of movements and forces that are primarly used throughout the test. Certain test can have as few directional changes (L run, T-test, 93639 m test) whereas others (Jelka test, Illinois test) can incorporate many more changes of direction. Each change of direction requires braking force follwed propulsive force, which in turn may increase the importance eccentric-concentric force capability of muscle and endurance as the number of turn increase. The application of force during the actual COD is more difficult to determine because it would rely heavily on individual technique. However, it is accepted that lateral forces would be involved in certain COD movements such as those in a T-test when the COD is preceded by shuffling movements (Brughelli, Cronin, Levin, & Chaouachi, 2008). In terms of the interrelationships amongst CODS tests, Draper and Lancaster (1985) have found that there was a significant correlation between the Illinois test and the up and back test (r=0.63) and the up and back and 5-0-5 test (r=0.51), but no significant relationship between the Illinois test and the 5-0-5 test (0.25). The researchers suggested that the results of most COD tests were independent from one another and they believed that this was a result of the duration and complexity of each COD test. In our study relationships amongst CODS tests were all statistically significant but it is interesting that T-test and 93639m (with shorter duration and less number of COD in respect to Jelka test), had statistically significant relationship only with SBJ (horizontal force application), while the Jelka test had statistically significant relationship with all tests applied, which can be justified by differences in direction of force application and/or energetic requirements as discussed previously.

If we observe model described in figure 1, we note that Sheppard and Young proposed that straight running speed and leg muscle qualities were important determinants of COD ability. In our study straight running speed (20 m Dash) had statistically significant relationship with all tests except the ones for CODS T-test (r=0.15) and 93639m test (r=0.29), while with the Jelka test relationship was statistically significant (r=0.68). In literature, most correlations between CODS and straight running speed would be described as moderate (r=0.3-0.5). Brughelli et al. (2008) found that the lowest correlate reported was for the 20 m sprint and 5-0-5 agility test (r=0.055) and the highest significant correlates reported in females between the T-test and sprint acceleration and velocity (r=-0.63 to -0.69). In research of Young, James, & Montgomery (2002) the mean times taken to complete the various sprint tasks indicated that as the change in direction increased from the straight sprint by 20^0 to 40^0 to 60^0, the times to cover 8 m increased. Sheppard and Young (2006) stated that generally, the more changes in direction, the less the transfer from straight running speed to COD. This does not seem the case given the data above regarding CODS tests used in this research. But this is just at first sight. Having in mind different distance covered and duration of three tests of CODS applied, different statistical correlations with straight sprinting speed are clear and expected. Namely, in task resolving of Jelka test trough the average of 35.6 sec there are many more distance covered in which straight running speed could be more included, while in T test and 93639m there are requirements for COD after shorter distances which is the case likewise in the reaserch of Sheppard and Young (2006). In terms of the shared variance between variables, it would seem that straight sprinting speed and COD speed seem to be, for the most part separate motor qualities.

The most common type of jump used to predict COD was the vertical jump (Brughelli et al., 2008). In our study we used specific jumps for volleyball Block Jump (which is basically

counter movement jump with elbows at shoulder height and hands above head with fingers spread in ready position) and Spike Jump with three steps approach with arm swing. Additionally we used Standing broad jump test for assesing leg power through jump horizontal distance. Intuitively, it would seem more appropriate to use jump tests that not only involve the application of vertical ground reaction forces, but also horizontal ground reaction forces, given that most human motion is a combination of these two types of forces. Results of our research are showing that only Standing broad jump was in statistically significant relationship with CODS tests, while the SJ and BJ were in statistically significant relationship only with Jelka test (r=-0.6). Djevalikian (1993) reported low (r=0.15) and non-significant correlations between power measures (15 s vertical jump performance) and a "boomerang run" that involved seven changes of direction. Web and Lander (1983) used a single vertical jump and a single standing broad jump in comparison with an L-run change of direction speed test. Again, low and non-significant correlations were reported for both Standing broad jump (r=-0.35) and the vertical jump (r=-0.19) in relationship with the L-run for change of direction speed. Marković (2007), using a bilateral long jump with arm swing, reported small correlations (r=-0.12 to -0.27) to their three tests of COD ability. Peterson et al., 2006, using a standing broad jump, found that horizontal jump distance was significantly correlated to the T-test for both males (r=-0.613) and females (r=0.713). Finally, Negrete and Brophy (2000) reported a correlation of r=-0.65 between a single-leg hop for distance and a diamond-shaped agility test. This horizontal jump measure was greater than their vertical jump measure (r=-0.38). Furthermore, the Peterson et al., 2006, horizontal jumps were greater than the vertical jump correlations. Given the results, it may be tentatively claimed that jumps that involve the combination of both HGRF and VGRF may better predict COD ability.

Table 2. Correlation Coefficients for Study Measures – Volleyball players (N=21)

	1	**2**	**3**	**4**	**5**	**6**	**7**
1. Block Jump	1.00						
2. Spike Jump	0.94**	1.00					
3. Standing broad jump	0.79**	0.80**	1.00				
4. Jelka test	-0.60**	-0.60**	-0.74**	1.00			
5. T-test	-0.10	-0.12	-0.44*	0.46*	1.00		
6. 93639 m test	-0.29	-0.29	-0.60**	0.63**	0.63**	1.00	
7. 20 m Dash	-0.75**	-0.66**	-0.75**	0.68**	0.15	0.29	1.00

*p<0.02; **p<0.00

Conclusion

Many different tests have been used to assess CODS performance and more are continually being developed in order for researchers to assess the specific demands of the sport for which they are used. There are a multitude of tests that have been used. A difficulty with these tests is that they may contain a varity of movement patterns, such as forward sprinting, backwards running, sideways shuffling, lateral cutting, and lateral crossover stepping. The duration and intensity, the number of directional changes and the angle of change vary considerably among the tests. We need to identify the specific movement patterns used by

successful athletes in particular sport.

In this correlational analysis, main conclusions are that CODS ability varies on the duration and intensity, the number of directional changes and the angle of change applied trough test situation. It is independent form vertical jumping ability and straight sprinting speed and related to jump distance trough horizontal force applied. Training and testing these abilities for performance of volleyball players should be highly specific.

It is an oversimplification to suggest that the leg muscle groups are solely responsible for COD movements. Change of direction speed ability needs to be viewed as a function of entire kinetic chain with adequate core stability, rather than just function of legs.

Sport practioners and researchers are intersted in determining the effect of various training programmes on the variable of interest, in this case COD. To do this, the changes in leg muscle qualities and straight running speed need to be mapped over longitudinal training interventions. Correlational analysis is of limited value in identifying the causal relationship between certain variables and change of direction ability.

Further researchers is need to be done, it is hoped that those variables that strongly influence COD ability will be elucidated and, as a result, give the reader insight and focus as to what variables should be assessed, developed and monitored.

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UDC: 796/799:159.923.2
(Original scientific paper)

DIFFERENCES IN SOME PERSONALITY TRAITS BETWEEN VOLLEYBALL AND FOOTBALL PLAYERS

Zoran Savić[1], Slađan Karaleić[1], Goran Nešić[2]

[1]Faculty of Sport and Physical Education, University of Pristina
[2]Faculty of Sport and Physical Education, University of Belgrade

Abstract

Scientific approach is used to study a man's personality, abilities and other characteristics, their interrelations, as well as the structure of numerous factors of the anthropological status necessary for success in sport. It is very important that children, during their first years in sports, are directed to practice those sports which match their psychosomatic status and in which they will achieve the best results. It is impossible in kinesiology and anthropology to measure those factors which are necessary for success in sports directly, but we deduce from Weg indicators, i.e. reactions, about them. It implies that science (kinesiology, anthropology, and others) is responsible for discovering methods which enable determination of factors which are essential for success in sport. This research should help solving some of these problems, and it should objectively determine conative status of volleyball and football players on the same level of competition as well as provide a contribution to improvement of these sports.

Keywords: conative features, personality dimensions, regulatory mechanisms, football players, volleyball players.

Introduction

Sport is an activity which generally involves people who positively valorize and prefer competitive situations and who are, for that purpose, capable and willing to endure certain physical and psychological strain.

Inadequate selection of the training contents and their wrong direction is most frequently caused by the lack of knowledge about the structure of motor, functional, cognitive, conative and other factors which limits certain sport achievements, as well as by the ignorance of qualitative characteristics of interrelations between these factors. Therefore, it frequently happens that too much work or unnecessary work is done to develop or improve one or another anthropological trait which is not always important for a certain sport activity or is even contradictory to the development of another trait or ability which is more important for that activity. This approach inevitably leads to stagnation of results and reduces overall efficiency of training.

In order to explain any motor activity, conative features, i.e. modalities of human behaviour, must be taken into account.

Conative features are specific, relatively constant and unchangeable structures of psychic characteristics of an individual, where each characteristic takes a specific place determined by the structure (*M. Zvonarević, 1975*). These are latent structures on which the response modalities relative to self depend, as well as to others and the society as a whole, and which are derived from the degree of ego intelligence in the dynamic communication of each individual with the surrounding. From the cybernetic point of view, conative features within biological system can be explained as functional and adaptive behaviour which is enabled by the integral functioning of CNS, along with the dominant manifestation of sound regulatory mechanisms (*S. Horga, 1979*).

Therefore, the emphasis in this paper is put on studying the structure of conative features in athletes who practice different sport activities and compete at the same level out of the total domain of anthropology.

Subject and Aim of the Research

The focus of this research is to determine differences between conative dimensions of volleyball and football players from Kosovo and Metohija who compete at the same level.

The **subject** of this research is the personality traits of volleyball and football players.

The **overall aim** is to determine differences between some conative features on the specified sample.

In order to achieve this overall aim, the following operational task can be set:

- to determine differences between personality traits of the group of football players and the group of volleyball players who compete at the same level.

Hypothesis

Having the focus and the subject of the research defined, as well as the overall aim and the operational task established the following hypothesis could be set:

H1 – differences between personality structure of the group of volleyball players and the group of football players who compete at the same level are expected to be significant.

Methods of Research

Test Group

The test group was defined as a sample of active volleyball and football players from Kosovo and Metohija who compete in Serbian league – south unit.

The test group was chosen by a deliberate selection method from the total population of players. This was done due to organization of competitions and work of clubs. The research was conducted on the sample of 140 subjects, 65 of which were volleyball players and 75 were football players.

Special requests for selection of the subjects were the following:

- The requested age of the subjects was 18 – 30 years chronologically;
- Subjects were required to be healthy and without any mental aberration at the testing time;
- The requested sex of the subjects was male;
- Subjects were to be involved into regular training process;
- Subjects were to be permanent members of their teams.

Sample of the Variables

Measuring instruments **for assessing conative personality dimensions** were chosen to involve dimensions of functioning model of conative regulatory mechanisms. This model assumes a hierarchical organization of the mechanisms for regulation and control of behaviour modalities and is designed to avoid the artificial dichotomy between normal and pathological conative factors.

The following measuring instruments were chosen:
- the regulator of activity (EPSILON),
- the regulator of biological functions (HI),
- the regulator of defense reactions (ALFA),
- the regulator of attack reactions (SIGMA),
- system for coordination of regulative functions (DELTA),
- system for integration of regulative functions (ETA).

Measuring Technique

Conative variable

For estimating the efficiency of the system for regulation of activity (EPSILON) the following tests were used:
- M16,EX1,EX2,CF, CH.

For estimating the efficiency of the system for regulation and control of biological functions (HI) the following tests were used:
- G11, K10, H13, E8, Z9.

For estimating the efficiency of the system for regulation and control of defense reactions (ALFA) the following tests were used:
- A1,O3,S5,F2,C.

For estimating the efficiency of the system for regulation and control of attack reactions (SIGMA) the following tests were used:
- N14,T15, SG3, CE SP3.

For estimating the efficiency of the system for coordination of regulative functions (DELTA) the following tests were used:
- L17, P18,DL2, D6, I7, SG2.

For estimating the efficiency of the system for integration of regulative functions (ETA) the following tests were used:
- DL1, DL3, SP5, CC, CQ4.

Methods for Processing Results

Significance of a research depends not only on a sample of subjetcs studied and sample of variables, that is on significance of basic information, but also on the applied processes for transformation and condensation of those information, too.

For determination of differences of particular segments of psychosomatic status in volleyball and football players of different competition level canonic discriminant analysis was

used. Canonic discriminant model is interpreted as a type of factor analysis which contains components which are best divided into groups in the range of variables. General statistical significance of discrimination of groups of subjects is determined by F-test. Discriminant variables are obtained from discriminant coefficients which depend on variance of each variable from the applied system of variables and have original results. Discriminant strength of the applied variables is determined by Wilk's lambda. Significance level of the discriminant equation is determined by Bartlett x^2 test. Result of x^2 test is tested with a number of degrees of deviation. Each discriminant variable explains a certain per cent of variability in discrimination domain of the applied variables. Data processed in the Centre for Multidisciplinary Research of the Faculty of Sport and Physical Education of Pristina University.

Results and Discussion

Differences in Some Personality Traits Between Volleyball and Football Players

Table 1 Canonic discriminant functions

Fcn	Eigen V.	Pct of Var	Cum Pct	Can Corr	Wilks L	X^2	DF	Sig
1*	.05	100.00	100.00	.22	.94	7.06	3	.06

Table 2 STRUCTURE MATRIX

	FUNC1
VOLLEYBALL PLAYERS	-.24
FOOTBALL PLAYERS	.21

Table 3 GROUP CENTROIDS

	FUNC1
ETA	.65
DELTA	.44
HI	.33
SIGMA	-.30
EPSILON	-.18
ALFA	.11

Connection between the type of sport and personality can have several different forms. The first assumption refers to the distinctive personality structure which motivates the individual to choose a sport discipline, and it is at the same time very important condition for endurance and success in that sport. The second assumption implies that such determined structure of conative features does not exist but that being engaged in certain sport activities modifies the structure of conative features in the direction which is suitable for that sport. Sport personality which motivates initial sport practice is the third possibility, but participation and selection within different sports disciplines causes modelling of ''sport personality"

into personality typical for a certain sport discipline. However, it is also possible that there are no special assemblies of conative dimensions which determine the choice of a sport activity nor the participation in it affects the formation of different patterns of personality.

A great number of researches indicate, though not always, the presence of differences in personality structure of athlets who are involved in different sports disciplines. Considering very different characteristics of certain sports disciplines, it is logical that as in many other activities, different requirements in terms of the structure of conative features are set for those that are involved. Therefore, it is partly surprising that the results of the researches of athletes' personalities have not pointed out these differences between some sports disciplines more strongly. However, as the majority of these researches was reduced to an isolated observation of certain personality features estimated in very different ways, the image of conative features of athletes in different sports disciplines was not and could not be obtained. Other methodological shortcomings were present in these researches, especially in the way the samples were defined as well as in the methods of analysis.

The results of canonic discriminant analysis between the groups chosen for our research show that there are no statistically significant differences between the observed conative dimensions because the significance of the isolated discriminant dimension is significant at the level p=.06. The reason for such results should be sought in the sampling because the subjects were athletes at the low level of competition and their training process did not bring to any significant changes of conative regulatory mechanisms or it had a similar impact on both samples of athletes.

Conclusion

The aim of this research, as previously mentioned, was to identify and determine latent structure of conative dimensions on the above specified sample.

Six measuring instruments were used to estimate conative features for this purpose.

Measuring was conducted on the sample of 140 subjects – active competitors in two sport disciplines who compete at the republic level in Serbian league in Kosovo and Metohija area – south unit, male aged 18 – 30. The whole sample was divided into two sub-samples. The first one was defined as the group of 65 volleyball players. The second sub-sample was defined as the group of 75 football players. The discriminant analysis was conducted with the aim to determine the differences between sub-sample of volleyball players and sub-sample of football players considering the same dimensions. Based on analyzed and interpreted results, the following can be concluded:

- Analyses conducted in discriminant procedure showed that there are no significant differences between two sub-samples.

Based on these results, hypothesis H1 is completely discarded.

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UDC: 338.487:659.1(497.1)
(Review paper)

SPORT-RECREATIONAL CONTESTS MARKETING AND PROMOTION IN MONTENEGRO'S TOURISM DEVELOPMENT

Bojan Rajak[1], Ranko Marjanović[1], Stefan Marijanović[2], Dragan Klarić[3]

[1]Faculty of Management in Sport, Belgrade
[2]Faculty of Organizational Sciences, Belgrade
[3]Faculty of Management, Herceg Novi

Abstract

The paper presents the current state of sports content promoted tourism in Montenegro. Particular importance was given NTOCG web site, currently the largest database of sports and recreational facilities in tourism in Montenegro. In addition on the basis of comparative analysis for 2012.and 2013.work contains statistical data on the number of sport and recreation in Montenegro's tourism for all three regions separately (Northern, Central and Southern).

Keywords: promotion, sport, recreation, tourism, NTOCG-The National Tourism Organization of Montenegro

Introduction

At the tourist market there is an increasing demand for sport-recreational contests during holidays and vacations. The destinations that have conditions for sustainable sport-recreational contests in natural environment are bather ranking then others on the tourist market. Montenegro has great natural possibility for the development of sport tourism as well as other forms of this industry and based on spatial and comparative advantages for their development . The following three regions are available for sport-recreational development:

1. The Northern region (municipalities of Plužane, Kolašin, Bijelo Polje, Berane, Šavnik, Žabljak, Pljevlja, Mojkovac, Andrijevica, Plav and Rožaje),
2. The Central region (municipalities of Podgorica, Nikšić, Danilovgrad and Cetinje),
3. The Costal region (municipalities of Herceg Novi, Kotor, Bar, Tivat, Budva and Ulcinj).

The basic development document in Montenegro for tourism is upgraded Master Plan i.e. The Strategy for the development of tourism in Montenegro (Montenegro- The Ministry of Tourism and Environment , Podgorica 2008), accomplished 2001 and, upgraded in 2008.[1]

Marketing of Montenegro as a touristic destination is under jurisdiction of the national tourist state organization entitled – National Tourist Organization of Montenegro. This organization conducts activities connected with promotion of Montenegro as a tourist destination, analysis of movement at the tourist market and organizes research of tourist market, fulfills different activities concerning gathering information, coordination between key actors

[1] Unković S. i Zečević B. (2009), „Ekonomika turizma", Ekonomski fakultet, Beograd, pp.451

of tourism offer and also it is entitled for organization of future tourist offices abroad and others.[2]

The National Tourism Organization of Montenegro as a state institution is financed from the budged of Montenegro, as it is in other countries, similar to *Maison de la France* in France, *VisitBritain* in Great Britain , *Deutche Zentrale fur Tourismus* in Germany or *Ente Nazionale Italiano per il Tourismo* in Italy , represents the key element in Montenegro considering planning and conducting marketing activities regarding planning and fulfilling promotion of this specific tourist destination. The necessity for the existence of such organization is a result of inability of the private sector to promote on foreign market independent natural recourses for market resource and other strategic activities that require significant financial means. Finally, The National Tourism Organization of Montenegro is a necessity because of coordination of private sector activities aiming to create proper tourist product for these countries. [3]

The Subject and Methods of This Paper

The subject of this research is promotion of sport-recreational contents in Montenegro tourism. The aim of this research is to represent the available information on this contents throw the official presentation of The National Tourism Organization of Montenegro.

In this work the following scientific –research methods will be used: description, explication, comparison , the method of statistic date processing, the method of content analyzing, the method of presentation throw text, figures and tables.

Result and Discussion

The National Tourism Organization of Montenegro is aiming to comprehend all offers regarding sport and recreational activities in Montenegro and for the time being this organization has the biggest data base in the country.

For the question: "Is the data base from the site of The National Tourism Organization of Montenegro representing the total number of sport and recreational events in the tourism in Montenegro?" the answer is NO. Throw web browsing it could be found many other offers in tourism in Montenegro that are not presented at the official site of this organization. The amount of such offers is less than 10%.

Based on these facts it could be concluded that the majority of sport organizations in Montenegro tourism recognized the importance of The National Tourism Organization of Montenegro data base. This was the reason for us to conduct detail overview of sport recreational offers throw web browsing of the official site of The National Tourism Organization of Montenegro. This kind of analyzes was used because foreign tourists are encountering with such offers throw internet in the same mod. The analyzes comprehend the complete territory of the country- the coastal region, the mountain region and the central region. For each of these regions the following elements were used:

- The offer of sport recreational activities in Montenegro
- The overview of the locations for sport recreational activities in Montenegro
- The address and name of the organization-manager of sport recreational activities in Montenegro

The first analyzes phase was conducted in March 2012 and the second phase was conducted one year later in March 2013. The purpose of this phases was to indicate the changes in the development of promotion of offers in sport recreational activities in Montenegro on annual level.

[2] Unković S. i Zečević B. (2009), „Ekonomika turizma", Ekonomski fakultet, Beograd, pp.445

[3] Unković S. i Zečević B. (2009), „Ekonomika turizma", Ekonomski fakultet, Beograd, pp.445

After complete analyzes the table was designed for presenting the figures considering promoted services and offers in the field of sport and recreation. Explanations of columns in the table:

- The first column represents the number of offers from browsing categories of sport and recreation on the site of The National Tourism Organization of Montenegro in March 2012 but that are not represented in March 2013
- The second column represents the figures of offers on the site of The National Tourism Organization of Montenegro in March 2012 but that are also represented in March 2013
- The third column represents the figures of offers that were not on the site of The National Tourism Organization of Montenegro in March 2012 but that are also represented in March 2013

Table 1. "Promoted offers for sport and recreation from 2012 to 2013 on the official site of The National Tourism Organization of Montenegro

Offers of sport and recreation	2012	2012 and 2013	2013
Tourist agencies	20	5	2
Sport clubs	0	55	12
Other(sky centers, ethno locations, public companies, manufacture of vessels, sealing net for vessels, ports, associations, shops)	7	22	23

At the official site as it is shown on table 1 it is obvious that most of the offers are from sport organization and tourist agencies. Represented in less quantity are others such as sky centers, ethno locations, public companies, manufacture of vessels, sealing net for vessels, ports, associations, shops etc.

There are 37 new offers presented at the table 1 that were nit existing one year earlier – column 3.

The National Tourism Organization of Montenegro is aiming by this web site to comprehend all tourist attractions, services and locations in Montenegro which also includes categories of sport and recreation. For some companies and organizations in Montenegro this web portal is an excellent opportunity for marketing own products.

In accordance with the location of legal entities it could be concluded that importance of sport recreational services in tourism is equally recognized in all of the three regions. The results of the analyzes indicates that in March 2012 the structure of entities dealing with such services is as follows:

- In the coastal region there were 41 entities which is 37,60 %
- In the mountain region there were 34 entities which is 31,20%
- In the central region there were 34 entities which is 31,20%

One year later in March 2013 based on a repeated analyzes and based on presentation of

The National Tourism Organization of Montenegro site the sources of services in this field are as follows:

- In the coastal region there were 46 entities which is 38,66 %
- In the mountain region there were 38 entities which is 31,93%
- In the central region there were 35 entities which is 29,41%

The analyzes of each single offer indicates that in a large number of cases on the site of The National Tourism Organization of Montenegro there is a lack of information considering location where the sport and recreational activities could be conducted and the data on the owners and management is far from sufficient. Also, there no particular web presentation.

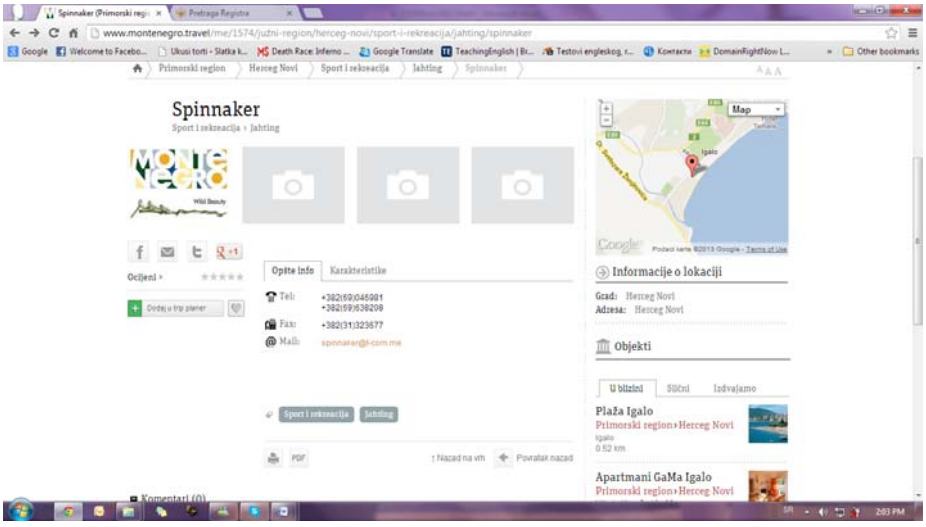
Many of the people from this business are still not aware of the Internet importance in the process of marketing and as a useful tool for promotion for their business.

In March 2012 from the total of 109 advertisements for sport and recreational on the The National Tourism Organization of Montenegro site 40 0f them did not have personal web presentation - 36, 70%. In March 2013 the number indicates percent rise so out of the total of 119 advertisements on the site of The National Tourism Organization of Montenegro 57 did not have personal presentation, expressed in percent – 47,89%.

Regarding the lack of basic information that are not presented on the site of The National Tourism Organization of Montenegro one could conclude the following:

- In March 2012 out of 109 total offers 55 presentations did not have information on the location, or 50,46%
- In March 2013 the number increased so out of the total of 119 offers even on 82 presentations there was a lack of location, or 68,91%

The following example indicates one of numerous contents on the site of The National Tourism Organization of Montenegro with more than modest presentation in March 2013:



Picture 1. " The presentation of one offers for sport and recreation on the site of The National Tourism Organization of Montenegro"; *source:* http://www.montenegro.travel/me/1574/ju%C5%BEni-region/herceg-novi/sport-i-rekreacija/jahting/spinnaker(from 16th March 2013.)

The analyzes of the above shown example indicates that there is not any more specific information than the basic ones:

1. The title of the legal entity
2. Location (the municipality without complete address)
3. The exact type of sport and recreational activities
4. Contact person, i.e. phone number and e-mail address

In is almost impossible to gain complete useful information on the site of The National Tourism Organization of Montenegro regarding services on most of the presented offers. The visitors of the site could therefore only be informed through brief statements considering phone number or e-mail address. This enables to the tourist organization to change at any moment in correlation with their needs the price and the type of activities from case to case.

As addition to above one can conclude that the "Spinnaker" company(as an example in this analyzes) does even not have a status legal entity, this company was erase from the central register of legal entities in Montenegro.

A logical question is "who stands behind such projects and how many of this offers are presented on the site of the National Tourism Organization of Montenegro? Are the canceled legal entities from the central register still charging payments for their cervices and, are they supported for the promotion on the official site of The National Tourism Organization of Montenegro."

Picture 2. " Presentation of the erased legal entity "Spinnaker" in the browser CRPSCG";
source: http://www.crps.me/index.php/me/pretraga-registra (from 16th March 2013.)

After gathering and data processing on the level of sport recreational contest there were also others activities conducted such as SWOT analyzes of the promotion in this sphere.

Table 2. "SWOT" analyzes- sport recreational contents on the official site of The National Tourism Organization of Montenegro

Useful	
FORCES **Comprehending of all sport recreational activities at one place** (enables possibility to the potentional tourist to become familiar with all sport recreational contents in the tourism in Montenegro in one place)	WEAKNES **Presentation of poor and incomplete information to the tourist regarding sport and recreation** (obviously there is no coordination between the text from the questioner filled by tourist managers and the information offered at the official which leads to the lack of information to the future consumers of the tourist cervices)
POSIBILITIES **Free advertising** (the web portal is attractive to all managers in sport and recreation in tourism because is free of charge)	THREATS **The advertising period is not limited by contract or by certain deadlines** (after the first delivery of sport recreational contents there is a need for changes and amendments and even it could lead to complete conciliation of a legal entity. In some cases this conciliation does not influence the site of The National Tourism Organization of Montenegro. In another words the information are not upgraded as they should).

Conclusion

Sport and recreational contents in the Montenegro tourism are approximately presented in the same amount in all of the three regions and for the time being they are organized and conducted by sport organization and tourist agencies.

The leading promoter of sport recreational contents in Montenegro tourism is The National Tourism Organization of Montenegro that in this moment presence the most comprehended data base followed by local tourist organizations responsible for tourism marketing at the level of tourist destinations(cities, municipalities).

After detailed insight of all presented offers we noticed that this data base is not perfect and it does not fulfill all user`s needs having in mind that is a certain improvement regarding comprehended data base presentation at one place, many sport recreational offers are shown in inappropriate mode and they do not give enough information to the future services consumers what is offered, what is the price, when, where and which expert team stands behind certain project regarding tourist services.

The National Tourism Organization of Montenegro as a quasi-state institution in charge for the marketing of Montenegro as a tourist destination should not allow through its official we presentation the appearance of incomplete contents and unproved organization that offer sport recreation activities without appropriate license. On the contrary The National Tourism

Organization of Montenegro should filtrate all contents based on previously established criteria . Suggestion for the future is that before presentation on web portal the process of gathering useful information from organization that are dealing with this mode of selective tourism. What is also needed is regular upgrading of planed activities and the mode of their use.

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Web sites

- http://www.montenegro.travel
- http://www.crps.me

UDC: 351.74/.76:613.71
(Review paper)

TECHNIQUES OF SPECIAL PHYSICAL EDUCATION IN THE FUNCTION OF PROTECTING POLICE OFFICERS

Đurica Amanović[1], Milija Ljubisavljević[2], Željko Nikač[1], Suzana Talijan[1], Nenad Koropanovski[1]

[1]The Academy of Criminalistic and Police Studies, Belgrade, Republic of Serbia
[2]Ministry of Interior, Republic of Serbia

Abstract

In this paper, the authors have analyzed the practical implementation of methods of specialized training in physical fitness (SFO) as a means of legally permitted control activities used by the police force, that is, the method of physical control for the purpose of control of physical resistance from the suspect. There has been analyzed a total of 350 situations in which the use of physical force was justified. Special attention has been devoted to the definition of force, the quantity and nature of resistance that must be overcome, as well as the degree of force a policeman requires in order to neutrolalize unlawful physical action of a suspect, to be able to manage (control) a given situation. Also in the paper, there has been stressed the need to have a clearly codified and generally accepted set of rules to govern the use of force, as guarantee of ethical and lawful enforcement of police authority.

Keywords: resistance, physical control, method, specialized physical training.

Introduction

The main duty of the police is to enforce effective law and maintain law and order. One of the necessary and unavoidable aspects of this duty is also the use of force (means of coercion), naturally, when necessary. The Police Force Law[1]regulates the use of force, which may be used only when it is absolutely necessary for the purpose of achieving a legitimate goal for security purposes,and the enforcement of rules and regulations. The principles and instructions regulating the use of force (means of coercion) are defined in the provisions of the Police Force Law, Rules on the Conditions and Method of Implementation of Means of Coercion[2], Rules on the Method of Performance of Police Duties[3],Instruction on Police Ethics and the Method of Performance of Police Duties[4]as well as other international and national standards.

In the Rules on the Conditions and Method of Implementation of Means of Coercion, there have been defined conditions for use of means of coercionand the method of use of means of coercion (use of force),and especially principles of necessity and proportionality, its duration, limitations and responsibilities after the use of force. Means of coercion are: physical

1 The Official Gazette of the R. Serbia, No. 101/2005
2 The Official Gazette of the R. Serbia, No. 133/2004
3 The Official Gazette of the R. Serbia, No.27/2007
4 The Official Gazette of the R. Serbia, No.41/2003

force, the official police stick (Brit. truncheon), means of restraining, special vehicles, specially trained dogs, mounted police, means of blocking, chemical substances and firearms(Art.1 paragraph 2). Also, it has been provided that police staff can use force in the manner that will ensure that an official assignment is carried out with as few damaging consequences for the person that force is used against,and only during the time in which there exist legally justified reasons due to which the coercion (force) is used (Art. 2). Furthermore, in the case ofeach use of coercion (force),police staff must in written form make out a report to their commanding officer, not later than 24 hours from the moment of the use of coercion (Art. 31).However, police practice shows that there is a very wide and unsystematic approach to the reporting of use of means of coercion (force) by the police staff.

In this paper there has been used a modern definition of resistance which provides a good foundation for concise and good quality reporting by the police. The control of force is used by the police staff to manage a situation and control the resistance of the suspect.When verbal communication proves to be unsuccessful, a police officer must plan for the possibility of using methods of physical control as the mildest form of coercion.The choice of kind and quantity of force should be based on of the quantity of resistance used by the suspect, as well as the circumstances of the given situation. Therefore, the purpose of the use of physical force or the methods of physical controlis to overcome resistance of the suspect. Resistance is considered to be all kinds of resistance of the suspect (passive or active) to the commands of the police, attack on policemen or avoidance measures and activities that the police announce or undertake in accordance with the provisions of the Law. It is understood that the kind and quantity of force used by the police should be based or be dependent on the kind of resistance used by the suspectas well as on other essential factors and circumstances of the given situation that may influence the choice of kind and quantity of the force used.

The tactical solution (form and scope of force) chosen by the police staff should be based on the form and scope of resistance used by the suspect, as well as on the other conditions and circumstances of the given situation (quantity of resistance, existence of firearms, seriousness and nature of the criminal action, traits of the suspect, environmentand other). The assessment of the danger caused by the degree of resistance should be based on the technical and tactical knowledge of the police officeras well as on adequate ability of endurance (procedures responsible for the endurance ability in the structuring and control of implementation of methods of control, biochemical and physiological characteristics).

Specialized physical training[5] is composed of a great number of methods[6],its distinct separate groups and combinations that are carried out in unpredictable and variable situations against different adversaries. Training in this fitness is performed through training by stages, namely, elementary, specialized and situational training (Milošević, M., I sir. 1989). Each of the stages has its specific goals and tasks. Elementary and specialized training teach basic

[5] Special Physical Education (SPE) is a scientific and teaching area that is present at all levels of police education. The largest portion of the SPE curricula is aimed at identifying and mastering techniques of several martial art systems (*judo, karate, aikido*), as well as on their application by means of *jujutsu* techniques, in different, specific working and living conditions of law enforcement officers. Special Physical Education therefore presents a complex self-defence system which consists of devised and systematically arranged techniques of defence and attack, their variants and combinations, which are practiced in order to be used in a specific situation, i.e. when performing certain police duties and taking other lawful measures related to police activities (e.g. techniques for physical control over a suspected offender, etc.).

[6] Specific motor skills (motor algorithms) or specific type of posture, movement and elaborated combat movements that are precisely defined in terms of both their execution and the related terminology (Jovanović, S., 1992).

conceptual algorithms, practiced conceptual and certain situational algorithms, while the task of situational training is the implementation of already practiced algorithms and programs, with a view to maintaining full control over the suspect. Physical control comprises a number of methods of control (SFO), such as lenient escort of persons, pressures and tight holds on vital places, the lever method, as well as "destruction of the suspect", that is, use of dynamic methodssuch as punches, throws, and other.In the educational structure of the Criminal-Police Academy, special physical training is in the group of compulsory subjects in the Department of Police Studies. Special physical training is an integral part of physical education and sports (kinesinology)[7] and with its contents and goals is directly connected with development and achievement of a higher level of health, labor, special abilities and knowledge that are of particular significance for efficient and successful achievement of professional duties of the Interior Ministry staff.

The current interest and significance of the research is due to all the more frequent attacks on police staff (activeand severe aggression), unsatisfactory criminal, and justice and misdemeanor protection of police staff. According to the statistical data of the Interior Ministry data, attacks on police staff, in the last few years, amount tosomewhat less than a half of all attacks (Ignjatović, 2006). According to the same source, the largest percentage (42%),compared with the tasks carried out by policemen in the assault on their persons, took place while they were maintaining law and order (in the period 1993-2003).

The Topic and Methodology

Our research maintains a purely contemplative position toward the problem of research, and as such represents a systemic non-experimental observation, that is, a qualitative and quantitative realistic implementation of methods (SFO)in the performance of operative police duties. Therefore, the purpose of our research is the analysis of implementation of force as a means of coercion, the most severe of the authorizations of the police force as per provisions of the Law, meaning use of physical strength (methods of physical control) as the mildest means of coercion. Using physical strength (The Police Act), means the use of various holds (terminologically and scientifically more accurately - methods) in combat skills or other methods on the body of another person (the suspect), with a view to resisting assault or overcoming resistance by inflicting least harmful consequences.

The research should provide data that will contribute to the more efficient training (education) and more successful performance of professional duties. For the purpose of this paper, there have been analyzed 350 situations, by random choice, onuse of physical strength in a number of random selected police stations in the territory of the Republic of Serbia in the period 2010/2011. Analyzed situations in which means of coercion have been used, and presented quantitative descriptive statistical data (the absolute and relative frequencies) as shown in the tableand graph.

[7] Nowadays, we still seem to be facing confusion, both in terms of terminology and the very essence, regarding the subject matter of this scientific discipline. It is sometimes included among the humanities, and sometimes regarded as part of medical science. The decision made by the National Council of Higher Education of Serbia from 2006 changed the name of the scientific area from physical culture to physical education and sport.

Results and Discussion

From the total of analyzed situations, where physical strength had been used as a means of coercion, there have been classified current degrees of resistance into four (4) differentiated groups: passive resistance; defensive resistance; active aggression; and severe aggression. Physical control comprises a number of methods of SFO, such as lenient escort of the suspect, pressure and tight holds on vital points, the method of lever, as well as methods of "destruction of the suspect", such as blows, throws, and other. Naturally, choice of method and the intensity of force depend on the quantity of resistance and the danger, which might evolve from it.

Besides that, implemented method of physical control of each individual policemandepends on the level of his previous training, experience and knowledge in specialized physical training (education), criminalistics tactics, methodic, staff, psychology, and other. By further analysis of current situations on use of physical strength for the purpose of overcoming resistance, there have been singled out the methods of SFO used in this respect.

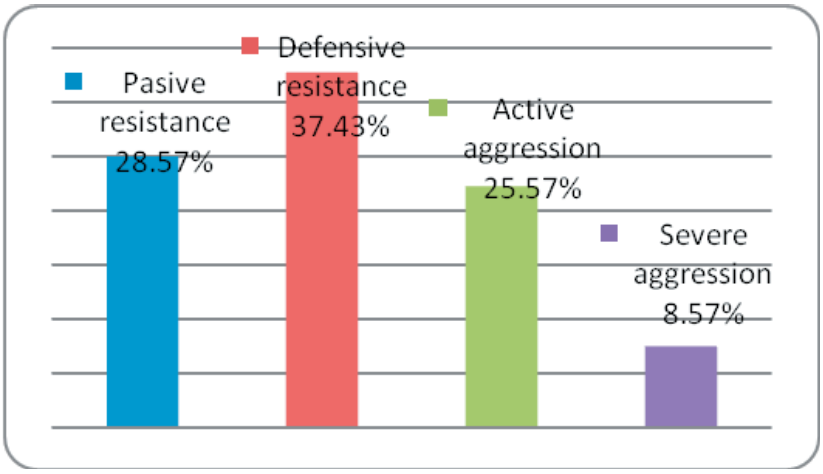
The Analysis of the Level of Resistance

Of the total number of situations in which means of coercion have been used,that is,use of physical strength as a means of coercion, there were selected 350situations that have satisfied the permitted procedure provided by Law. Current resistance in analyzed reports was manifested in some of stated levels of resistance shown in **Table 1 andGraph 1**.

Table 1. The level of resistance of the suspectstated in analyzedsituations

Level ofresistance	Absolute frequency (f)	Relative frequency (f %)
Passiveresistance	100	28.57
Defensiveresistance	131	37.43
Active aggression	89	25.43
Severe aggression	30	8.57

On the basis of the received results it can be concluded that from the total number of situations (350),defensive resistance was manifested in most of the cases - 131or37.43%. Activeaggression toward police staff was recorded in 89situations or 25,43% situations. Of that number, in 3 situations, assault on a colleague or other person had to be prevented. Of the total number of situations, 100situations or28.57% are attributed to passive resistance of the suspect. In 30situations or 8.57%,severe aggression on police staff was recorded. It is important to state that 2situations of that total number are attributed to assault with a firearm (pistol), 2 situations assault with a knife, 1 situation assault with a wooden bat, and 1 situation assault with a bottleneck.



Graph 1. Level of resistance of the suspect

The Analysis of the Implemented Methods of SFO

Some situations are resolved by successful communication, verbal address (by warning and command) as well as by binding the suspect's hands/arms, but when these methods prove to be insufficient, the police use physical force (methods of SFO), as the mildest means of coercion (easy and hard control). Analyzing the current situations in which means of coercion had been used as means of controlling the suspect, there were noted individual methods of SFO, namelythe lever method, the method of inflicting blows, throws, pressureand tight holds on vital places, as well as handcuffing. The methods are shown in **Table 2 below**.

Table 2. Methods of SFO police used to control resistance of the suspect in analyzed situations.

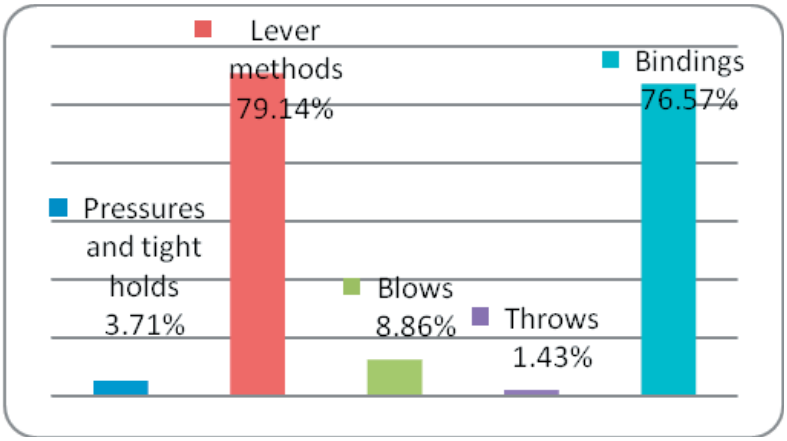
Used methods of SFO	Absolute frequency (f)	Relative frequency(f%)
Pressureandtight holds in vital places	13	3.71
Lever method	277	79.14
Blows inflicted	31	8.86
Throws made	5	1.43
Binding suspect's hands with handcuffs	268	76.57

The analyzed Report onUse of Means of Coercion (force) states 350 situations of use methods of SFO, where 277(79,14%)situations have been resolved by using the lever method[8].

[8] The lever techniques (*kansetsuwaza*) are the most commonly recognized technical elements of the *jujitsu*system of self-defence and control techniques (*katamewaza*) present their part. The levers are combat techniques performed in such a way as to ensure fast and strong extension of tissues in the area of the articulation which is the targets of the technique. The purpose of the lever is to establish

In as much as 268situations or 76.57%,the police handcuffed the suspect (**diagram 2**). It is important to state that in a majority of situations and after using the lever there has been used the method of binding the suspect; while in a lesser number of situations the lever has been used to escort the suspect (s) to the official vehicle. Similar results have been achieved in our research as well asin the research of other authors. During an official intervention, even 71% situations have been resolved with holds and levers, while in 79% situations official handcuffswere used (Anderson et al., 2001).

In **Table 3** there have been presented types of levers used in analyzed situations. On the basis of achieved results, it may be concluded that even 183 or 66,06% situations have been resolved by using lever-inward shouldertwist,in 41 situations (14,18 %) the lever of wrist twisting was used, while in 23 situations (8,30%) the excessive stretch of the elbow.



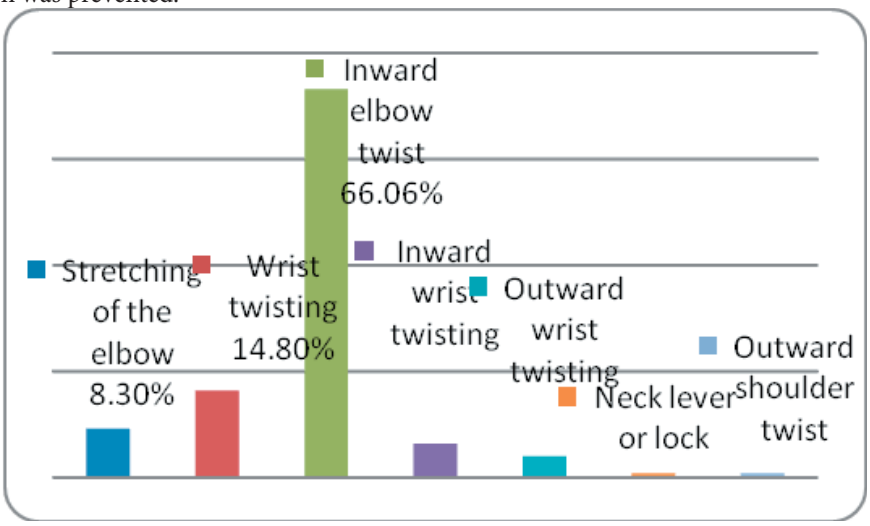
Graph 2. Used methods of control in current situations.

Table 3. Types of lever used by policemen to control resistance of the suspect in analyzed situations.

Type of lever	Absolute frequency (f)	Relative frequency (f %)
Elbow stretching	23	8.30
Wrist twisting	41	14.80
Inward elbow twist	183	66.06
Inward hand twist	16	5.78
Outward hand twist	10	3.61
Neck lever (hold)	2	0.72
Outward shoulder twist	2	0.72

control over the opponent (*osaewaza*) as the most lenient means of coercion (physical control) by inflicting pain, distortion, or luxating of the given articulation. It can be applied on all joint and used in different situation related to police work. They are most frequently applied to the following spots: elbow, shoulder, hand, spine, and knee.

The analyzed situations in which policeman has used a method of lever from the Special Physical Training program show that in the majority of analyzed situations the method of inward shoulder twist (inward elbow twist), has been used, namely in as much as 66.06% situations (**diagram 3**). The lever outward shoulder twist was used in only in two (2) situations, and the neck lock or lever in another two (2) situations. In both casesassault on another person was prevented.



Graph3. Used levers in current situations.

Conclusion

For the police to be efficient in implementing the law, policemen enjoy a number of rights and responsibilities they are authorized to use. One of the special authorizations provided by law is the use of means of coercion (**use of force**). Physical strength (**physical force**) has been provided as the mildest means of coercion. The Rules on Conditions and Method of Use of Means of Coercion, by use of physical force, is considered as the use of a variety of holds (more precisely: **methods**) of unarmed combat skills (or more precisely: **special physical training orphysical control**) orsimilar actions to the body of another person, with a view to repelling assault or over coming the resistance of another person with the infliction of least harmful consequences.

A small number of researches dealing with use of force and control of resistance have prompted such a research as ours, as a theoretical basis for a broader research of this phenomenon. In support of this, police practice manifests broad and non-systemic approach in the reporting of use of force by officers. In this paper, there has been used a modern definition of resistance, offering a good basis for optimal action in the use of physical control of the suspect as well as sound and unified reporting by the police.

In the issue of the level of resistance by the suspect, it may be concluded that, of the total number of situations, in the majority of situations there was recorded defensive (37.43%) and passive resistance (28.57%), while active aggression on policemen was recorded in 25.43%and severe aggression in 8.57% situations. In the analyzed reports on use of physical strength, for controlling other persons, policemen most often use the lever method (79.14%) and hand-

cuffing (76.57%). Of the used lever methods, even 66.06% of situations accounted for lever holds – the excessive inward shoulder twist.

At the end, we think that special attention should be devoted to the problem of permanent training of police officers in theoretical subjects (human rights, police ethics, communicationand legal foundation for the implementation of authorizations given to the police), operational police skills and special physical training that will lessen the risk of their victimization and optimize the use of force.

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UDC: 796.056:796.032(497.1)
(Review paper)

ATHLETES' POSITION WITHIN MONTENEGRIN OLYMPIC MOVEMENT

Marko Begović
German Sport University

Abstract

This paper will analyze the institutional position of athletes within the Montenegrin Olympic Movement in order to design better policy mechanisms that will amplify the strengths and dampen the weaknesses. With penetrating to the essence of the formal (informal) organizational structure is intention to improve institutional position of athletes that is likely to lead to better development of sports, to a more fulfilling career for athletes and their integration as functioning members of the society after the end of their careers.

Keywords: athletes, the Olympic movement, sports career, Montenegro

Introduction

For adjustment of the Olympic Movement in Montenegro it is necessary to welcome de Coubertin idea of an athlete as a center and an athlete as a vehicle for sharing/promoting Olympic principles:

"In order for 100 people to develop their bodies it is necessary for 50 to practice a sport, and in order for 50 to practice a sport it is necessary for 20 to specialize; but in order for 20 to specialize it is necessary for 5 to be capable of outstanding achievement."[1]

Going from the statistical position that Montenegro is country under million people population, sport activities should be control by state authorities but with decentralizing principles within National Sport Federations (constituents of Montenegrin NOC).[2] Under State control, Italian Olympic Committee (CONI) is in charge of sport activities.[3] Decentralizing principles means that it should be involved all who actively participate in specific sport (from athletes to the sponsors). United States Tennis Association (USTA) is an example where athletes, coaches, referees, sponsors actively participate within USTA various Committees, provided by USTA Constitution, Bylaws, and diversity and inclusion statement.[4]

Sport plays a very important role of Montenegrin overall identity, especially in times where economic crises tremendously increased gap between classes with negative effects on socialization of the vulnerable population. With these negative outcomes, sports organiza-

1 In MÜLLER, N. (1986) /IOC (Eds.) Olympic Education : Pierre de Coubertin. Textes choisis. Vol.I « Révélation». Zurich, Hildesheim, New York, p. 436.
2 http://data.un.org/CountryProfile.aspx?crName=Montenegro
3 Legge N. 91/81 sul Professionismo Sportivo, Art. 14.
4 http://assets.usta.com/assets/1/15/2012_Constitution_Bylaws3_022212.pdf

tions tended to follow organizational structure of other governmental organization. In his work, Chifflet defines three different types of organizational cultures of the sport governing bodies: the association culture of the elected volunteer executives, which is based on the federal values of amateurism and volunteering; the public service culture of public servants, who are placed at different levels within the federation formally, Montenegrin sport organizations tends to follow this organizational group); and the managerial culture of managers and experts, which is based on meritocracy, performance and profitability.[5]

On another hand, not many studies have addressed issues related to sport organizations from a relational perspective.[6]

MOC-NSF Relational Structure

The legal position of Montenegrin Olympic Committee is federation of all sports federations (non Olympic sports as well). Strategy and action plans depend on NOC of Montenegro General Assembly comprised by various representatives of Sports Movement (national sports federation representatives).[7] Crozier and Friedberg, having in mind organizational system that is increasingly bureaucratic, suggested that stakeholders operate with significant level of autonomy.[8] Although they are obliged to adhere to the statutory obligations, representatives are still inclined to make decisions based on their informal alliances in order to meet their private interests. Despite obstacles within society, Coakley concluded that sport is consisted of rules created by interpersonal cooperation.[9] Contextual cultural elements (taken for granted) are widely spread within Montenegrin Olympic Movement decision-making process.[10] National Sports Federations are governmental organizations consist of or union of sports clubs as their members. Majority of clubs are either in private ownership or public with fully control by private individuals (usually connected with political stakeholders).

The review of Statutes[11] (umbrella legal tool of every NSF) leads to conclusion that priority or central point of NFS in Montenegro is athletes' development. By athlete development it implies enabling best possible conditions to participate in order to develop them and achieve best possible sporting results. Basically rest of the Statute is not providing any legal or any additional bylaw which could provide practical application of the above mentioned. Clearly, informal alliances are building by needs from stakeholder common share goals in order to remain on position and to maximize their interest. For example, situation in Czech governing bodies is analyzed by Numerato:

'From the perspective of social capital, a sport governing body represents an institution as a set of network ties which have a certain configuration and which are organized in a certain way. The members of a federation share cognitive images about themselves and the relationships are maintained through a certain level of trust. Behavior of the association

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5 Chifflet, P. (1993). Associations de sportifs ou enterprises du sport. In A. Loret (Ed.), *Sport and Management*. Paris: Dunod.

6 Harvery, J., Lévesque, M., & Donnelly, P. (2007). Sport Volunteerism and Social Capital. *Sociology of Sport Journal, 24*(2), 206-223.

7 http://www.cokcg.org/onama/statut/

8 Crozier, M and Friedberg, E (1977) L'Acteur et le Système.Paris: Éditions du Seuil.

9 Coakley, J (2007) Sport in Society – Issues and Controversies. Boston: McGraw Hill.

10 About cultural elements of the context in: DiMaggio, P.J,. & Powell, W. W. (1991). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality. . In P. W.W & P.J. DiMaggio (Eds), *The New Institutionalism in Organizational Analasys*. Chicago, IL. University of Chicago Press. 26-27.

11 Most of NSFs has similar Statute (only Montenegrin version): http://www.mta.co.me/userfiles/file/Statut.pdf

members, who are more or less identified with a sport movement, is regulated by norms and obligations'.[12]

Position of Athletes

Current constitution of NSF affected by global economic crises on one hand and accepting market oriented philosophy without necessary legal instruments (Statues and Bylaws for improvement of athletes' position) on another hand creates overall neglect of athletes with only aim for stakeholders to receive state funds and to expand sphere of their influence. Most NSFs via Statutes didn't predict institutional position of athletes. Positive example is Football Association of Montenegro, where clubs, athletes, coaches, referees, medical stuff and grassroots representatives have their own unions within umbrella federation.[13] The central issue of the Olympic movement in Montenegro is vulnerable position of athletes (legally and practically). In his speech, Frank Frederiks noted following:

"There is no doubt that without athletes, there will be no Olympic Games, there will be no sport."

Without institutional support during sporting career, career after sport is uncertain and blurry and there had been a many evidence about athletes using alcohol to deal with end of their sporting career.[14] Let's pay attention on IOC Congress recommendations from October 2009:

"All athletes are at the heart of the Olympic Movement. They are supported by extensive structures which include, in particular, local clubs, National and International Federations and National Olympic Committees… Athletes should be encouraged to play an integral part in the organization and development throughout the twenty first century."[15]

On another side, regarding uncertain path of athletes, Fuchs Ebaugh (1988) noted:

"The process of disengagement from a role that is central to one's self-identity and the reestablishment of an identity in a new role that takes into account one's ex-role constitutes the process I call role exit."[16]

Olympic Movement in Montenegro doesn't recognize either formal or informal structured institutions to protect athletes in order to remain productive after sporting career. This is very important because they could serve as role models on one side and more important it could significantly reduce possibility for ex-athlete to become a social problem. As continuation regarding developments of athletes:

"Athletes from across the globe and from all sports should have access to an appropriate level of basic legal advice and guidance throughout their sporting careers. Stakeholders of the Olympic Movement should, at their cost, identify policies and procedures to achieve this objective."[17]

Olympic Movement in Montenegro is a state oriented system with private or politically eligible individual in charge and with constellation at the NOC of Montenegro makes them very influential. The Statute of Montenegrin NOC enables NFS representatives to take positions in various commissions regardless whether they possess necessary prerequisite for it.

[12] Numerato, D. (2008). Czech Sport Governing Bodies and Social Capital. *International Review for the Sociology of Sport, 43*(1), 21-34.

[13] http://fscg.co.me/images/stories/pravilnici/2012/Statut_FSCG-02.pdf

[14] Mihailovic, M. (1968). The status of former sportsmen. International Review of Sport Sociology, 3, 73-93.

[15] XIII Olympic Congress, (2009). Recommendations, Denmark.

[16] Fuchs Ebaugh, H. (1988) Becoming an Ex. The Process of Role Exit. (pp.1) Chicago, IL: The University of Chicago Press. p.1

[17] *Ibid.,* p. 4.

Athletes should be included in overall decision-making processes. About role of athletes in the Olympic Movement institutions:

"Athletes must be included within the decision-making bodies of the Olympic Movement through Athletes' Commissions and other positions that carry full voting rights." [18]

This doesn't mean, of course, that will solve all the problems. Availability to take part in may not fully resolved issues in relational triangle (community-athletes-Olympic Movement organizations) as McFee argued "One cannot, for instance, resolve alldifficulties in a particular sport by making new rules for that sport, rules which deal with every situation unequivocally".[19] Informal ties usually become praxis that in many cases become "wall" formal interests of the NSF. One of the most obvious reasons serving as a braking mechanism could be explained by Cashmore:

"Crisis of legitimacy of contemporary dispute resolution mechanisms, which are contested due to the commercialization and professionalization of sport."[20]

Fully aware that this is not an ordinary constellation within NSF it is important to note that formational historical background of NSF (the socialist period/public ownership up to mid 80s and the introduction of capitalism principles with the lack of legal institutionally protection from 90s) force on only possible constellation in order to put athletes in a position to be heard and to take part of the responsibility in the managing of NSF. Begging of the transformation should start by adapting existing Statutes and since majority of National Sport Federation are dominantly (over 90%) financed by state funds to welcome public representatives on the managing positions.[21] Having in mind that NSF are state oriented organizations it is important to encourage formation of individual association of athletes, coaches, referees, parents and pull of sponsors within NSF and to take an equal role in decision-making process. Above, constellation of relations within NSF with importance of autonomy in sports could serve as protection from any kind of mistreatment in specific sport allowing all participants to be equally represented. In the section of the IOC recommendations from 2009 Congress, "The Structure of the Olympic Movement", autonomy of sport is noted as an essential segment in order to promote diversity and individuality:

"The relevant intergovernmental organizations and governments should acknowledge the necessary and essential autonomy of the Olympic Movement including, in particular, respect for and enforcement of the rules of good governance, equality and fairness in sport and sport administration, as established by the Olympic Movement and set out in the Olympic Charter, to ensure the best and fairest possible practice of sport… All constituents of the Olympic Movement should review their rules and activities to ensure that they fully comply with the Olympic Charter and the fundamental principles and values of Olympism."

Perception of autonomy within Montenegrin Olympic Movement (mainly at NSF structures) is mostly missed used as term for being sovereign, especially when it comes to making strategic decisions for development of sport system or within specific sport on one hand and way of spending state funds (allocated for athletes development) on another hand.

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18 *Ibid.,* p. 4.

19 McFee, G (2000) Spoiling: an Indirect Reflection of Sport's Moral Imperative?' pp. 172-182in Tännsjö, T and Tamburrini, C (eds.) Values in Sport - Elitism, Nationalism, Gender Equality and the Scientific Manufacture of Winners, London: E & FN Spon.

20 Cashmore, E (2005) Making Sense of Sports. London: Routledge. In work of: Dino Numerato, D. and Persson, H.T.R., (2010). *"To Govern or to Dispute? Remarks on the Social Nature of Dispute Resolutions in C zech and Danish Sports Associations",* Entertainment and Sports Law Journal, ISSN 1748-944X, p. 3.

21 Information regarding funding of NSF and other sport organizations (clubs) could be found at: http://www.infomladi.me/index.php?IDSP=19976&jezik=lat and http://www.infomladi.me/index.php?IDSP=20257&jezik=lat.

Conclution

It was deliberately taken into consideration the institutional position of athletes with aim of disclosing organizational structure of Montenegrin Olympic Movement with emphasis on National Sport Federations as a essential segment (organizational). There are two main reason why is this approach has been chosen. Fist, there were not many studies on relational aspects within sporting organization regarding athletes position. Second one is that in a country of transition, legal basis should be considered as a vital foundation for construction of relations. Relational forms included via construction of institutions in order to protect athletes position on one hand and to enhance an opportunities for developing overall state potential through Montenegrin Olympic Movement. The aim of this paper is not to oppose to the existing structure, but to note vulnerable position of athletes and to serve as guidance (athletes to take responsibility in their own hands) for improvement of the organizational structure of the Montenegrin Olympic Movement.

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