

SOCIO-DEMOGRAPHIC VARIABLES, PERFECTIONISM, ANXIETY AND SOMATIZATION AS PREDICTORS OF SCHOOL SUCCESS AMONG CADET AND JUNIOR VOLLEYBALL PLAYERS

SOCIODEMOGRAFSKE VARIJABLE, PERFEKCIONIZAM, ANKSIOZNOST I SOMATIZACIJA KAO PREDIKTORI ŠKOLSKOG USPEHA ODBOJKAŠA KADETA I JUNIORA

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Abstract: The aim of this research was to examine to which extent the predictor socio-demographic variables (gender; child's age, parents' education), personal traits (adaptive perfectionism and maladaptive perfectionism) and psychological adjustment (exam anxiety and somatization) contribute to school success among cadet and junior volleyball players of both genders. The sample included (N=122) participants of both genders, age 18 to 20, from Valjevo. The Multidimensional Perfectionism Scale, Exam Anxiety Scale and Youth Self-Report were used. Cronbach's alpha coefficient showed high internal consistency of the applied measuring instruments, which means that they can be recommended for studying sports population in Serbia. Data were processed using descriptive statistics, Pearson's correlation coefficient and hierarchical regression analysis. The results of the Pearson's correlation coefficient reveal low statistical significance of the interaction between the majority of the measuring variables. The findings of the regression model, with 29% variance, indicate to statistically relevant and independent contribution of gender and maladaptive perfectionism in explaining school success, which leads to the suggestion that future studies include some other variables such as family as potential predictor. The results of this research are in accordance with earlier studies on relations between adaptive and maladaptive perfectionism, somatization, and school success (as criterion) among athletes during adolescence.

Key words: volleyball, cadets, juniors, regression model.

Sažetak: Cilj ovog istraživanja bio je da se ispita u kom stepenu prediktorske sociodemografske varijable (pol i uzrast deteta, obrazovanje roditelja), individualne karakteristike (adaptivni i neadaptivni perfekcionizam) i psihološka adaptacija (ispitna anksioznost i somatizacija) doprinose objašnjenju školskog uspeha kod odbojkaša kadeta i juniora. Uzorak ispitanika obuhvatio je (N = 122) ispitanika, uzrasta 18 do 20 godina iz Valjeva. Primenjena je Multidimenzionalna skala perfekcionizma, Skala ispitne anksioznosti i Skala somatizacije – YSR. Krombahovi alfa koeficijenti ukazali su na veliku internu konzistenciju primenjenih instrumenata, te se mogu preporučiti i za ispitivanje srpske sportske populacije. Podaci su obrađeni deskriptivnom statističkom metodom, Pirsonovom korelacijom i hijerarhijskom regresionom analizom. Rezultati Pirsonovih koeficijenta korelacije upućuju na niske statistički značajne interakcije između većine merenih varijabli. Nalazi regresionog modela, uz 29% varijanse, signaliziraju na statistički značajan i samostalan doprinos adaptivnog i neadaptivnog perfekcionizma u objašnjenju školskog uspeha ispitanika, te je preporuka da se u budućim istraživanjima ispituju neke druge varijable, npr. porodica kao potencijalni prediktor. Rezultati sprovedenog istraživanja u skladu su sa ranijim studijama relacija adaptivnog i neadaptivnog perfekcionizma, somatizacije i školskog uspeha (kao kriterijuma) kod sportista u adolescenciji.

Ključne reči: odbojka, kadeti, juniori, regresioni model.

INTRODUCTION

A great number of individual and social factors affect athletes' school success. Socio-demographic characteris-

Uvod

Na školski uspeh sportista u obrazovnom procesu, utiče veliki broj individualnih i socijalnih faktora. U psihološkim istraživanjima školskog uspeha značajno me-

tics, individual, and social factors hold significant place in psychological researches on school success. Studies regarding athletic achievements of preadolescents and adolescents usually take into account individual predictor variables: intelligence, personality dimensions, and social variables: parents' education (Dagnew, 2017). Researches (Houck et al., 2019) revealed that personal traits such as athlete's gender and age have a significant function in school success, noting that female athletes have better school success than male athletes.

Perfectionism implies multidimensional construct which is characterized by high individual standards, being overconcerned about personal mistakes, self-doubt regarding performance, exaggerated discipline and organization (Curran & Hill, 2019). The authors believe that these variables contribute the development of neurotic (maladaptive perfectionism), while personal standards represent the basis for the development of the normal (adaptive perfectionism). With adaptive perfectionism, achieving success using personal skills and capabilities leads to the increase and confirmation of self-respect, while maladaptive perfectionism, characterized by constant questioning of personal effort, dissatisfaction and self-doubt, is the result of negative self-assessment and the need for external validation. Such athletes are extremely self-critical which makes them susceptible to differential psychological problems (Stoeber et al., 2021). This way of achieving perfectionism enables the prediction of athletes' behavior during training and competing. [HYPERLINK "https://www.sciencedirect.com/science/article/abs/pii/S1469029201000188"](https://www.sciencedirect.com/science/article/abs/pii/S1469029201000188)Haase, Prapavessis & Owens (2021) claim that, during early adolescence, athletes develop perfectionism under the influence of personal and external latent dimensions, while the differences in the levels of manifesting certain factors have the influence on isolating certain characteristics of perfectionism. The study (Mallinson-Howard et al., 2018) proves that maladaptive perfectionism interacts with unsatisfactory school success, while the dimensions of adaptive perfectionism are linked to better school success. Young athletes, who quite openly display perfectionism, more often experience the feelings of anxiety, panic and despondency regarding school responsibilities (Freire et al., 2020). Preadolescent and adolescent athletes are characterized by the increased changes of the points of functioning (somatic, intellectual and socio-emotional aspects). That is why there is an increased danger of developing emotional and behavioral difficulties which can also be in correlation with school success (Cowden, Crust, Jackman & Duckett, 2019). Some ath-

sto pripada sociodemografskim karakteristikama ličnim i socijalnim faktorima sportista. U studijama o sportskim postignućima predadolescenata i adolescenata obično se kod individualnih prediktivnih varijabli ispituje, inteligencija i dimenzije ličnosti, a od socijalnih varijabli obrazovanje roditelja (Dagnew, 2017). Istraživanja (Houck et al, 2019) pokazuju da lične karakteristike, npr. pol i uzrast sportista, imaju značajnu funkciju u školskom uspehu ispitanika, pri čemu sportistkinje realizuju bolji školski uspeh u poređenju sa sportistima.

Perfekcionizam podrazumeva multidimenzionalan konstrukt koji karakterišu visoko individualni standardi, preterana zabrinutosti zbog ličnih grešaka, sumnja u sopstveno izvođenje i prenaplašena disciplina i organizacija (Curran & Hill, 2019). Ovi autori smatraju da pomenute varijable doprinose razvoju neurotskog (neadaptivnog perfekcionizma), dok lični standardi predstavljaju osnovu za razvoj poželjnog (adaptivnog perfekcionizma). Kod adaptivnog perfekcionizma pri ostvarivanju uspeha sopstvenim sposobnostima i veštinama dolazi do povećanja i potvrđivanja samopoštovanja, dok se neadaptivni perfekcionizam ispoljava u konstantnom preispitivanju ličnog naprežanja, nezadovoljstvu i sumnji u sopstvene sposobnosti, što izvire i iz negativnog samoocenjivanja i potrebe za eksternim odobravanjem. Takve sportiste odlikuje naglašena samokritičnost, što ih čini povredljivim za različite mentalne poteškoće (Stoeber i sar., 2021). Ovakvo ostvarivanje perfekcionizma omogućava predikciju ponašanja sportista u trenažnom i takmičarskom kontekstu. Otud, Haase, Prapavessis & Owens (2021) tvrde da se perfekcionizam kod sportista u ranoj adolescenciji razvija pod uticajem individualnih i spoljašnjih latentnih dimenzija, dok razlike u nivou manifestovanja pojedinih faktora uslovljavaju izolovanje pojedinih karakteristika perfekcionizma. Studija (Mallinson-Howard et al., 2018) dokazuje da je neadaptivni perfekcionizam u interakciji sa lošijim školskim uspehom, dok se dimenzije adaptivnog perfekcionizma povezuju sa boljim školskim uspehom. Mladi sportisti, koji upadljivo manifestuju perfekcionizam, češće su anksiozni zbog školskih obaveza i imaju osećaj panike i snuženosti (Freire et al., 2020). Sportiste predadolescente i adolescente karakterišu pojačane promene u diferenciranim gledištima funkcionisanja (somatskom, intelektualnom i socioemocionalnom aspektu). Zato postoji povećana opasnost za pojavu emocionalnih i ponašajnih teškoća, koje mogu biti u korelaciji i sa školskim uspehom (Cowden i sar., 2019). U sportskoj sredini kod nekih sportista ispoljava se i anksioznost, te se prilikom postizanja pobede

letes experience anxiety in sports environment and after winning they can have automatic negative thoughts focused on the fear of failure. Athletes who express increased anxiety instead of focusing on the task often use maladaptive strategy of focusing on feelings. On the other hand, athletes who focus on the task believe that they can stay on top of the situation and that they have the capabilities necessary for dealing with possible problems (Hill, Mallinson-Howard & Jowett, 2018), and therefore can more successfully deal with the stress. Based on this, negative correlation between anxiety and school success of athletes is expected (Jensen et al., 2018). Athletes who visibly worry about potential mistakes believe that their fathers and mothers are too critical and that is why they experience higher level of anxiety.

In school, some students experience exam anxiety, which means that during the exam they can experience automatic negative thinking oriented towards the fear of getting low marks, disappointing parents, and fear of failure in general. Students who experience elevated exam anxiety apply maladaptive strategy and focus on feelings instead of focusing on the task. On the other hand, students who focus on the task believe that they can stay on top of the situation because they have the capabilities necessary for dealing with possible problems (Burić, Sorić i Penezić, 2011), and are therefore more efficient in dealing with stress during the exam. Based on this, negative correlation between anxiety and school success is manifested (Steinmayr, McElvany & Wirthwein, 2016). Athletes who are visibly concerned about potential mistakes experience higher levels of anxiety.

Somatization is a common method of dealing with stress during puberty and early adolescence, and it entails the way of manifesting mental difficulties where tension and anxiety are expressed during stressful situations in the form of somatic symptoms (Khallad & Jabr, 2016). Considering that stress triggers physical symptoms and manifestation of mental difficulties, it is also the consequence of unsatisfactory school success (Rahat & İlhan, T. (2016). Students spend significant part of their day in school, and apart from academic, that includes social stress generated by demanding parents and peer conflict (MacDonald, Rizzone & Vengal, 2020). School stressors often create somatic difficulties, and because of the frequent absence from school those students often do not have good school success (Stone et al., 2016).

The aim of this research was to determine the predictive values of socio-demographic characteristics (parents' education), personal traits (adaptive perfectionism and maladaptive perfectionism) and psychological adjustment

moju manifestovati negativne automatske misli orijentisane na strah od neuspeha. Sportisti koji pokazuju povišenu anksioznost umesto orijentacije na zadatak u mnogo prilika koriste neadaptivnu strategiju orijentacije na osećanja. Naprotiv, sportisti koji se orijentišu na zadatak veruju kako mogu nadzirati situaciju i imaju neophodne sposobnosti za suočavanje s mogućim problemima (Hill, Mallinson-Howard & Jowett, 2018), pa se uspješnije suočavaju sa stresom. Otud se može očekivati negativna korelacija anksioznosti i školskog uspeha sportista (Jensen i sar., 2018). Sportisti koji su vidno zabrinuti zbog potencijalnih grešaka veruju da su njihovi očevi i majke previše kritični zbog čega i percipiraju viši nivo anksioznosti.

U školskoj sredini kod nekih učenika se ispoljava i ispitna anksioznost, zbog koje se pri polaganju ispita mogu javiti negativne automatske misli orijentisane na strah od slabe ocene, razočarenja roditelja, ili načelno strah od neuspeha. Učenici koji imaju povećanu ispitnu anksioznost umesto orijentacije na zadatak češće primenjuju neadaptivnu strategiju fokusiranja na osećanja. Naprotiv, učenici koji se usmjeravaju na zadatak veruju da mogu nadzirati ispitnu situaciju jer imaju potrebne sposobnosti za rešavanje mogućih problema (Burić, Sorić i Penezić, 2011), pa efikasnije se bore sa stresom u ispitnoj situaciji. To je i razlog zašto se manifestuje negativna korelacija ispitne anksioznosti i školskog uspeha (Steinmayr, McElvany & Wirthwein, 2016). Sportisti koji su vidno zabrinuti zbog potencijalnih grešaka percipiraju viši nivo ispitne anksioznosti.

Somatizacija je uobičajen metod suočavanja sa stresom u pubertetu i ranoj adolescenciji, te podrazumeva način manifestovanja mentalnih poteškoća, gde se tenzija i anksioznost ispoljavaju u stresnim situacijama u obliku somatskih simptoma (Khallad & Jabr, 2016). S obzirom na to da je stres okidač pojave fizičkih simptoma i zaokret manifestovanja fizičkih poteškoća, on je i posledica slabog školskog postignuća (Rahat & İlhan, T. (2016). Učenici provode značajan deo dana u školi koja im, osim akademskih, uslovljava i socijalne stresore generisane preteranim nalogima očeva i majki i sukobima sa vršnjacima (MacDonald, Rizzone & Vengal, 2020). Školski stresori mnogo puta proizvode somatske teškoće, a zbog čestih izostanaka sa nastave oni najčešće imaju slabije školsko postignuća (Stone et al., 2016).

Cilj ovog istraživanja je utvrđivanje prediktivne vrednosti sociodemografskih karakteristika (obrazovanje oca i majke), ličnih dimenzija (adaptivni i neadaptivni perfekcionizam), psihološkog prilagođavanja (somati-

(somatization) in explaining school success among cadet and junior volleyball players of both genders. Based on the results of previous studies, it can be expected that parents' higher education and athletes' adaptive perfectionism lead to better school success, while maladaptive perfectionism and somatization lead to unsatisfactory school success among volleyball players.

METHOD OF WORK

Sample

The research included 122 participants of both genders, age 14 to 16 from seven volleyball clubs of Kolubara-Macva interregional league of Serbia: "VA 014" (Valjevo), "Valjevo" (Valjevo). The average age of cadets was 17,20 years of age (SD = 7,35), and the average age of juniors was 19,26 years of age (SD = 6,15). All the participants had at least two years of systematic and organized training, at least three times a week.

Instruments

The Multidimensional Perfectionism Scale (Zubčić & Vulić-Prtorić, 2008) includes 35 items which measure perfectionism using six dimensions: personal standards, concern about mistakes, parental expectations, parental criticism, self-doubt about performance, being organized. Responses range from 1 (does not correspond) to 5 (corresponds fully). Results are calculated by adding the items from certain subscales, where subscales represent latent dimensions of adaptive and maladaptive perfectionism (Erceg & Slišković, 2014). Adaptive perfectionism is positive aspirations formed from the dimensions of personal standards ("If I do not set the highest standards, I will likely end up as a lower-class person") and being organized ("I am a neat person"), while maladaptive perfectionism includes concern about mistakes, parental expectations, parental criticism, self-doubt about performance ("In my family, only perfect performance is good enough", "I never thought I could live up to my parents' expectations"). The task was for participants to determine to which extent they agree with each statement on a five point scale. Cronbach's alpha reliability coefficient ranges from .60 to .79, and the reliability of the factors adaptive and maladaptive perfectionism ranges from .82 to .83.

Exam Anxiety Scale (Vulić-Prtorić & Sorić, 2002). It includes 15 items and studies students' anxiety during exam. The scale examines the feeling of hopelessness and discomfort during exam, fear of failure

zacija) u tumačenju školskog uspeha kod odbojkaša u kadetskom i juniorskom uzrastu. U skladu sa rezultatima dosadašnjih istraživanja može se očekivati da će više obrazovanje roditelja i adaptivni perfekcionizam sportista prognozirati bolji školski uspeh, dok će neadaptivni perfekcionizam i somatizacija prognozirati slabiji školski uspeh u odbojkaškoj populaciji.

METOD RADA

Uzorak

U ispitivanju je učestvovalo 122 ispitanika uzrasta od 16 do 20 godina iz dva odbojkaška kluba Međuregionalne kolubarsko-mačvanske lige Srbije: „VA 014“ (Valjevo) i „Valjevo“ (Valjevo). Prosečna starost kadeta iznosila je 17,20 godina (SD = 7,35), a juniora 19,26 (SD = 6,15). Svi ispitanici imali su najmanje dve godine sistematskog i organizovanog odbojkaškog treninga, u trajanju od najmanje tri puta sedmično.

Instrumenti

Multidimenzionalna skala perfekcionizma (Zubčić i Vulić-Prtorić, 2008) obuhvata 35 ajtema koji mere perfekcionizam kroz šest dimenzija: Lični standardi, Zabrinutost zbog grešaka, Roditeljska očekivanja, Roditeljska prigovaranja, Sumnja u sopstveno izvođenje, Organizovanost. Odgovori se daju na skali od 1 (*ne odnosi se na mene*) do 5 (*u potpunosti se odnosi na mene*). Rezultati se formiraju sabiranjem ajtema pojedinih subskala, od kojih subskala pripada latentnim dimenzijama višeg reda, adaptivnom i neadaptivnom perfekcionizmu (Erceg i Slišković, 2014). Adaptivni perfekcionizam, pozitivne težnje napravljene su od dimenzija lični standardi („Ako ne postavim maksimalne standarde, verovatno ću završiti kao osoba manjeg reda.“) i organizovanost („Ja sam uredna osoba.“), dok neadaptivni perfekcionizam podrazumeva zabrinutost zbog grešaka, roditeljska očekivanja, roditeljska prigovaranja i sumnju u sopstveno izvođenje („U mojoj porodici samo savršeno izvođenje je dovoljno dobro“, Nikad nisam mislio/la da bih nogao/la zadovoljiti očekivanja svojih roditelja.“). Zadatak ispitanika je da proceni koliko se slaže s pojedinom tvrdnjom na skali od 5 stupeni. Koeficijenti pouzdanosti tipa Cronbach Alpha iznose od 0,60 do 0,79, a pouzdanosti nadređenih faktora adaptivnog i neadaptivnog perfekcionizma od 0,82 do 0,83.

Skala ispitne anksioznosti (Vulić-Prtorić i Sorić, 2002). Obuhvata 15 ajtema i ispituje anksioznost učenika u ispitnoj situaciji. Skala se odnosi na osećanje bespomoćnosti i neprijatnosti u ispitnoj situaciji, strah od neuspeha tokom rešavanja zadatka koji je često posledica re-

during task solving which is often the consequential reaction of the autonomic nervous system (“When a teacher asks me something and I have to stand in front of the blackboard, I fear that I might say something wrong.”). The participants give answers on a three point scale, by answering to every item by either circling “T” as affirmative or “N” as negative, and in case they cannot decide between the offered answers they can circle “?”. Choosing “T” is worth 2 points, “N” is worth 0 points and “?” is worth 1 point. Theoretically, total score can range from 0 to 30, where higher score implies higher exam anxiety.

The obtained internal consistency coefficient ($\alpha = .90$) of the entire scale used in this research indicates to satisfactory reliability of the scale.

Youth Self-Report – somatization (YSR Youth Self-Report; Achenbach & Rescorla, 2001). The participants are tasked with evaluating their behavior and experience on the 10 item scale which refers to the existence of physical conditions such as vertigo, fatigue and physical difficulties that have no clear medical reason, headache, nausea, dermatological problems etc. (“I feel tired without specific reason”, “I suffer from vertigos”). The questionnaire consists of three levels (0 – not true, 1 – sometimes or partly true, and 2 – completely, often true) where participants assess the degree to which these items refer to them in the past six months. The score is the total of all the statement points, and higher score means increased presence of somatic symptoms. The questionnaire has a satisfactory Cronbach’s alpha consistency coefficient of $\alpha .81$.

Students’ school success is determined by the grade point average for the previous grade. It ranges from 3 to 5, with mean value of 4,42 (SD = .69). Thirteen students achieved satisfactory performance (13.11%), 45 had very good performance (36.88%), and 59 students achieved excellent performance (50.5%).

RESULTS

Table 1 shows the descriptive data of the measuring variables. The arithmetic means of the variables indicate that the personal traits (adaptive perfectionism) lean toward higher values, while the values of psychological adjustment (somatization) are closer to lower values. The values of standardized skewness and standardized kurtosis, where the value of skewness does not surpass the standard value of 2 and the value of kurtosis does not surpass the standard value of 7, suggest that there is no statistically significant deviation from the normal distribution of variables, which is the main condition for

akcije vegetativnog nervnog sistema („Kad me nastavnik prozove i kad moram doći pred školsku tablu, plašim se da bih mogao reći nešto pogrešno.“). Ispitanici odgovaraju na trostepenoj skali Likertovog tipa, pri čemu ispitanik kod odgovara na svaki ajtem može prihvatiti zaokruživanjem slova „T“, ne prihvatiti zaokruživanjem slova „N“, a ako se ne može odlučiti ni za jedan od ponuđenih odgovora, ispitanik može zaokružiti znak pitanja „?“ . Pristajanje uz ajtem, tj. odgovaranje zaokruživanjem slova „T“ dobija 2 boda, „N“ 0 bodova, dok zaokruživanjem upitnika „?“ dobija 1 bod. Ukupan skor čini zbir svih odgovora, pri čemu teorijski raspon rezultata varira od 0 do 30, gde viši skor ukazuje na izraženiju ispitnu anksioznost.

Dobijeni koeeficijent interne konzistencije ($\alpha = .90$) na celoj skali u ovom istraživanju upućuje na zadovoljavajuću pouzdanost skale.

Skala telesnih poteškoća – somatizacije (YSR Youth Self-Report; Achenbach & Rescorla, 2001). Ispitanici imaju zadatak da procenjuju svoje ponašanje i doživljavanje na skali od 10 ajtema koji se odnose na prisutnost fizičkih stanja, kao što je vrtoglavica, umora i telesne poteškoće bez jasnih medicinskih razloga, glavobolja, mučnina, dermatološki problemi i sl. (Osećam se premoreno, bez jasnog razloga.“ “Imam vrtoglavice.”). Upitnik je formiran na skali od tri stepena (0 – nije tačno, 1 – ponekad ili delimično tačno i 2 – potpuno/često tačno) pri čemu ispitanici procenjuju u kojoj se meri ajtem odnosi na njih u periodu od šest meseci. Ukupan rezultat se formira kao zbir rezultata pripadajućih tvrdnji, a dobijeni veći skor ukazuje na veću prisutnost somatizacijskih simptoma. Dobijen je zadovoljavajući koeficijent pouzdanosti Cronbach α od .81.

Školski uspeh učenika određen je ocenom opšteg školskog uspeha na kraju prethodnog razreda. Raspon školskog uspeha kreće se od 3 do 5, sa srednjom vrednošću od 4,42 (SD = 0,69). Ukupno 13 učenika navodi dobar školski uspeh (13.11%), vrlo dobar navodi 45 učenika (36,88%), a 59 učenika navodi odličan školski uspeh (50,5%).

REZULTATI ISTRAŽIVANJA

u Tabeli 1 prikazani su deskriptivni podaci merenih varijabli. Dobijene aritmetičke sredine varijabli ukazuju na to da su vrednosti lične karakteristike ispitanika (adaptivni perfekcionizam) pomerene prema višim vrednostima, dok su vrednosti nivoa psihološke adaptacije (somatizacija) ka nižim vrednostima. Vrednosti standardizovanog skjunisa (zakrivljenosti) i standardizovanog kurtozisa (zaravnjenosti), tj. tamo gde vrednosti skjunisa ne prelaze standardizovanu vrednost od 2, a vrednosti kurtozisa ne prelaze standardizovanu vrednost od 7 sugerišu da nema statistički značajnih odstupanja distribucije od normalne raspodele

applying the parametric analysis (Finney & DiStefano, 2006).

Table 1. Descriptive indicators for measuring variables

	Min	Max	AM	SD	Sk	Ku
<i>Variables / Varijabla</i>						
<i>Personal traits / Individualne karakteristike</i>						
<i>Adaptive perfectionism / Adaptivni perfekcionizam</i>	1.48	4.96	3.59	.70	-1.88	4.66
<i>Maladaptive perfectionism / Neadaptivni perfekcionizam</i>	1.26	4.47	2.38	.62	-.63	-.24
<i>Psychological adjustment / Psihološko prilagođavanje</i>						
<i>Exam anxiety / Ispitna anksioznost</i>	0	29.00	17.04	7.01	.92	2.15
<i>Somatization / Somatizacija</i>	0	15.00	3.68	1.84	-1.59	3.17

Annotation: *Min* – minimum value; *Max* – maximum value; *AM* = arithmetic mean; *SD* = standard deviation; *Sk* = standardized skewness (asymmetry coefficient – left skewed or right skewed distribution); *Ku* = standardized kurtosis (leptokurtic distribution or platykurtic distribution). The value of standard error with *Sk* is .07, and with *Ku* is .19.

Pearson's coefficients were calculated with the aim of examining correlation of all variables (Table 2).

Table 2. Bivariate correlation for measuring variables

<i>Measuring instruments / Mereni instrumenti</i>	1	2	3	4	5	6	7	8
1. <i>Father's education / Obrazovanje oca</i>		-	.37**	.18*	.05	-.15*	.01	.01
2. <i>Mother's education / Obrazovanje majke</i>			-	.19*	.17*	.06	.05	.05
3. <i>School success / Školski uspeh</i>				-	.23**	-.30**	-.26	.07
4. <i>Adaptive perfectionism / Adaptivni perfekcionizam</i>					-	.18*	.05	.02
5. <i>Maladaptive perfectionism / Neadaptivni perfekcionizam</i>						-	.32**	.42**
6. <i>Exam anxiety / Ispitna anksioznost</i>							-	.39**
7. <i>Somatization / Somatizacija</i>								-

** $p < 0.01$, * $p < 0.05$.

Taking a look at the cells of this table, there is clearly a small, statistically significant correlation between socio-demographic variables and the examined variables. The calculated Pearson's coefficients signal towards participants' better school success. Besides, older adolescents exhibit lower level of adaptive perfectionism, while parents' higher education is shown to be in correlation with participants' better school success. In addition, children whose mothers are more educated have inclination towards adaptive perfectionism. Finally, participants who have better school success have a great tendency towards adaptive perfectionism, and minimal

na korišćenim varijablama, što je osnovni uslov za primenu parametrijskih analiza (Finney & DiStefano, 2006).

Tabela 1. Deskriptivni pokazatelji merenih varijabli

	Min	Max	AM	SD	Sk	Ku
<i>Variables / Varijabla</i>						
<i>Personal traits / Individualne karakteristike</i>						
<i>Adaptive perfectionism / Adaptivni perfekcionizam</i>	1.48	4.96	3.59	.70	-1.88	4.66
<i>Maladaptive perfectionism / Neadaptivni perfekcionizam</i>	1.26	4.47	2.38	.62	-.63	-.24
<i>Psychological adjustment / Psihološko prilagođavanje</i>						
<i>Exam anxiety / Ispitna anksioznost</i>	0	29.00	17.04	7.01	.92	2.15
<i>Somatization / Somatizacija</i>	0	15.00	3.68	1.84	-1.59	3.17

Napomena: *Min* – minimalna vrednost; *Max* – maksimalna vrednost; *AS* = aritmetička sredina; *SD* = standardna devijacija; *Sk* = standardizovani skjunis (koeficijent asimetrije – zakrivljenosti ili iskošenosti distribucije); *Ku* = standardizovani kurtosis (koeficijent spljoštenosti ili izduženosti distribucije). Vrednost standardne greške kod pokazatelja *Sk* je .07, a kod *Ku* je .19.

U cilju ispitivanja korelacija svih ispitivanih varijabli izračunati su Pirsonovi koeficijenti (Tabeli 2).

Tabela 2. Bivarijantne korelacije merenih varijabli

<i>Measuring instruments / Mereni instrumenti</i>	1	2	3	4	5	6	7	8
1. <i>Father's education / Obrazovanje oca</i>		-	.37**	.18*	.05	-.15*	.01	.01
2. <i>Mother's education / Obrazovanje majke</i>			-	.19*	.17*	.06	.05	.05
3. <i>School success / Školski uspeh</i>				-	.23**	-.30**	-.26	.07
4. <i>Adaptive perfectionism / Adaptivni perfekcionizam</i>					-	.18*	.05	.02
5. <i>Maladaptive perfectionism / Neadaptivni perfekcionizam</i>						-	.32**	.42**
6. <i>Exam anxiety / Ispitna anksioznost</i>							-	.39**
7. <i>Somatization / Somatizacija</i>								-

** $p < 0.01$, * $p < 0.05$.

Uvidom u matrice ćelija Tabele uočava se niska statistički značajna povezanost sociodemografskih varijabli i ispitivanih varijabli. Osim toga, stariji adolescenti navode niži stepen adaptivnog perfekcionizma, dok je više obrazovanje roditelja u korelaciji s višim školskim uspehom ispitanika. Istovremeno, deca obrazovanih majki teže ka adaptivnom perfekcionizmu. Na kraju, ispitanici koji imaju bolji školski uspeh pokazuju veću tendenciju ka adaptivnom, a minimalnu ka neadaptivnom obliku perfekcionizma, kao i minimalne simptome anksioznosti i telesne poteškoće – somatizacije.

tendency towards maladaptive perfectionism, and they have minimal symptoms of physical difficulties – somatization.

Hierarchical regression analysis was conducted with the aim of determining the contribution of certain predictor variables in explaining adolescents' school success (Table 3). The regression equation included socio-demographic variables (parents' education), participants' personal traits (adaptive perfectionism and maladaptive perfectionism) and psychological adjustment (somatization).

Table 3. Prediction of school success based on adaptive and maladaptive perfectionism, and somatization

School success / Školski uspeh			
1. step: socio-demographic / korak: Sociodemografske karakteristike	1. step / korak	2. step / korak	3. step / korak
	β	β	β
Father's education / Obrazovanje oca	.20**	.16*	.14*
Mother's education / Obrazovanje majke	.08	.11	.06
2. step: Personal traits / korak: Individualne karakteristike			
Adaptive perfectionism / Adaptivni perfekcionizam	.31*	.17*	
Maladaptive perfectionism / Neadaptivni perfekcionizam	-.30**	-.25**	
3. step: Psychological adjustment / korak: Psihološko prilagođavanje			
Exam anxiety / Ispitna anksioznost			.27**
Somatization / Somatizacija			.10
R^2	.15*	.23**	.29*
R_{kor}^2	.13*	.20**	.21**
ΔR^2		.08	.05

Legend: β – standard partial regression coefficient; R^2 – coefficient of multiple determination, total percentage of all predictors of the variance criterion model; R_{kor}^2 – corrected total contribution to the explained variance; ΔR^2 – the change of value of the coefficient of multiple determination (contribution of the individual group of predictors to the explained variance by introducing the new block of predictor variables); ** $p < 0.01$, * $p < 0.05$.

In the first step of the regression model, all predictor variables, except mother's education, showed statistical significance with 15% of the explained variance of school success, while second step that included the predictor perfectionism increased the percentage of the explained variance by 8%. Statistical significance of the adaptive perfectionism is $\beta = .21$, and maladaptive perfectionism is $\beta = -.30$. The obtained predictor parameters most likely suggest that adolescents who have more expressed adaptive perfectionism have better school success, while the adolescents who express maladaptive perfectionism do not have good school success. The obtained standardized beta coefficient

U cilju utvrđivanja doprinosa pojedinih prediktorskih varijabli u tumačenju školskog uspeha adolescenata, sprovedena je hijerarhijska regresiona analiza (Tabela 3). U regresionu jednačinu uključene su sociodemografske varijable (obrazovanje roditelja), individualne karakteristike ispitanika (adaptivni i neadaptivni perfekcionizam) i psihološko prilagođavanje (somatizacija).

Tabela 3. Predikcija školskog uspeha na osnovu adaptivnog i neadaptivnog perfekcionizma, i somatizacije

Legenda: β – standardni parcijalni regresioni koeficijent; R^2 – koeficijent multiple determinacije ukupan procenat svih prediktora objašnjenog varijansi kriterijuma modela; R_{kor}^2 – korigovani ukupni doprinos objašnjenog varijansi; ΔR^2 – promena vrednosti koeficijenta multiple determinacije (doprinos pojedine grupe prediktora objašnjenog varijansi uvođenjem novog bloka prediktorskih varijabli); ** $p < 0.01$, * $p < 0.05$.

U prvom koraku regresionog modela sve prediktorske varijable, izuzev obrazovanja majke, pokazale su statističku značajnost uz 15% objašnjene varijanse školskog uspeha, dok se u drugom koraku uključivanjem skupa prediktora perfekcionizma procenat objašnjenog varijabiliteta povećao za 8%. Statistička značajnost adaptivnog perfekcionizma iznosi ($\beta = .31$), a neadaptivnog perfekcionizma ($\beta = -.30$) školskog uspeha. Dobijeni prediktivni parametri verovatno ukazuju na to da adolescenti izrazitijeg adaptivnog perfekcionizma i neadaptivnog perfekcionizma manifestuju bolji školski uspeh. Dobijeni standardni beta koeficijent u multiploj regresiji signifikantno

in multiple regression significantly and with 8% increase contributes in explaining the variance of criterion variable. Exam anxiety, functioning as psychological adjustment, is statistically significant negative predictor of school success ($\beta = .27$). In the third and final step, the indicator of somatization on the Youth Self-Report did not show statistical significance. The examined groups of predictor variables explained in total 29% of criterion variability.

DISCUSSION

This research had the aim to examine which socio-demographic characteristic and problems in adaptation can be predictors of school success during adolescence. The interactions obtained in this research confirm the initial hypothesis and show that there are relevant relations between socio-demographic characteristic and personal traits, and school success among cadet and junior volleyball players. However, applying the hierarchical regression analysis on certain socio-demographic and personal variables, it is found that only some of them give relevant contribution, specifically that maladaptive perfectionism contribute school success of volleyball players.

Analyzing the effect of gender in this research, it is established that female volleyball players have better school success than male volleyball players. These findings match the research (Erbe, 2020) where better school success of female athletes is explained by the difference in motivation, social support, commitment, persistence, etc. Female athletes are usually more persistent, they ask for help (Ryan et., 2009), they have more self-control (Carvalho, 2016) and are more active during training (Vecchione, Alessandri & Marsicano, 2014). Apart from school success and dimensions, perfectionism is a significant predictor of school success during puberty and adolescence, where adaptive perfectionism is a relevant positive predictor, and maladaptive perfectionism is a relevant negative predictor of school success among volleyball players. In addition, the authors Nounopoulos, Ashby & Gilman (2006) state that adaptive perfectionism is a positive predictive parameter, while maladaptive perfectionism is a negative predictive parameter of school success. Adaptive perfectionism correlates to positive academic indicators such as excellent school success, satisfaction with achieved success, quality academics habits (Reyes-Hernández et al., 2021), while maladaptive perfectionism is linked to bad school success, exam anxiety and bad mood (Rice, Richardson & Ray, 2016).

Positive relationship in the correlation matrix of fathers, mothers and adolescents education, and somatization is an unexpected finding. Therefore, volleyball players can regard these behaviors as pressure, especially when parents' plans differ from theirs.

i dodatno za 8% doprinose objašnjenju varijanse kriterijumske varijable. Ispitna anksioznost u funkciji psihološke adaptacije je statistički značajan negativan prediktor školskog uspeha ($\beta = .27$). U trećem, poslednjem, koraku indikator somatizacije na Skali telesnih poteškoća nije pokazao statističku značajnost. Ispitivanim skupovima prediktorskih varijabli ukupno je objašnjeno 29% varijabiliteta kriterijuma.

DISKUSIJA

u ovom istraživanju nastojalo se ispitati koji su to sociodemografski i problemi u adaptaciji prediktivni u prognozi školske uspešnosti u adolescenciji. Dobijene interakcije u ovom istraživanju potvrđuju hipotezu istraživanja i signaliziraju na relevantne relacije ispitivanih sociodemografskih varijabli i individualnih karakteristika, i školskog uspeha odbojkaša kadeta i juniora. Ali, primenom hijerarhijske regresione analize, na pojedine sociodemografske i lične varijable, ukazuje se na relevantne doprinose samo nekih od njih, odnosno nalazi u ovom istraživanju pokazuju da školskom uspehu doprinosi neadaptivni perfekcionizam odbojkaša.

Osim školskog uspeha, i dimenzija, perfekcionizam je značajan prediktor sporskog uspeha u pubertetu i adolescenciji, pri čemu je adaptivni perfekcionizam relevantan pozitivan, a neadaptivni perfekcionizam signifikantan negativni prediktor školskog uspeha odbojkaša. Takođe i autori Nounopoulos, Ashby & Gilman (2006) smatraju da je adaptivni perfekcionizam pozitivan prediktivni parametar, a neadaptivni negativan prediktivni parametar školskog uspeha. Upravo, adaptivni perfekcionizam korelira s pozitivnim akademskim indikatorima kao što je odličan školski uspeh, zadovoljstvo realizovanim uspehom, kvalitetnim akademskim navikama (Reyes-Hernández i sar., 2021), dok je neadaptivni perfekcionizam u interakciji sa slabijim školskim uspehom, ispitnom anksioznošću i lošim raspoloženjem (Rice, Richardson & Ray, 2016).

Pozitivan odnos u korelacionoj matrici obrazovanja očeva i majki i adolescenata, i somatizacije je neočekivan nalaz. Otud, odbojkaši pomenuta ponašanja mogu percipirati kao pritisak, naročito ako se planovi roditelja razlikuju od njihovih planova. Na kraju, na temelju dobijenih nalaza u ovoj studiji zapaža se da pozitivna individualna dimenzija (sklonost neadaptivnom perfekcionizmu) doprinosi školskom uspehu predadolescenata i adolescenata. Ovakve studije su neophodne za poboljšanje kvalitete rada u obrazovnom sistemu i sportu jer mogu ponuditi praktične smernice za kreiranje obrazovnih i sportskih programa orijentisanih na poboljšanje

Finally, based on the obtained findings, it can be seen that the negative personal dimension (inclination for maladaptive perfectionism) contributes school success of preadolescents and adolescents. These kinds of studies are necessary for improving the quality of work in education and sport because they can offer practical guidelines for creating educational and sports programs oriented towards improving academic and athletic achievements of young athletes. Future studies should focus more on the role that parents' academic involvement has in child's psychosocial adjustment.

Methodological shortcomings of this research have to do with the small pertinent sample of preadolescents and adolescents which is relatively homogenous when it comes to school success, since half of the participants had excellent school success. Taking school success as arithmetic mean of the grades is largely limited due to the metric characteristics (reliability, validity and fairness). At the same time, the range of score variance on such variable leans towards higher values, which likely conditioned the lower intensity correlations with other measuring variables. Seeing how school success affects a great number of factors, future studies should examine some other individual (such as temperament and emotional regulation), social characteristics (interaction with teachers and coaches) and determinants of school and athletic success on a larger more heterogeneous sample of male and female athletes.

CONCLUSION

keeping in mind the importance of school success in our society, this study examined how predictor parameters of parents' education, adaptive perfectionism, maladaptive perfectionism, exam anxiety and somatization affect the variability of school success of 122 male and female volleyball players (cadets and juniors). The findings of the hierarchical regression analysis, with 29% variance, indicate to statistically relevant and independent contribution of gender and maladaptive perfectionism of preadolescents and adolescents in predicting school success of volleyball players. At the same time, the low predictive capacity of the measuring variable somatization did not show statistical significance, which leads to caution while forming the general conclusion.

Despite the methodological shortcomings mentioned above, this study represents the first research in Serbia done on young athletes which offers the insight into the linear correlation education, adaptive and maladaptive perfectionism, exam anxiety and somatization.

Announcemet

We announce that the authors have equally contributed to this paper.

Conflict of interests

There is no conflict of interests among the authors themselves.

školskog i sportskog postignuća mladih sportista. U narednim istraživanjima treba više pažnje usmeriti ulozi aspekata akademske uključenosti roditelja u psihosocijalnu adaptaciju njihove dece.

Metodološki nedostaci sprovedenog istraživanja odnose se na prigodan i mali uzorak predadolescenata i adolescenata koji je relativno homogen u školskom uspehu pošto više od jedne polovine ispitanika u ovom uzorku ima odličan uspeh u školi. Određivanje školskog uspeha kao aritmetičke sredine zaključne ocene u velikoj meri limitirano je metrijskim karakteristikama (pouzdanost, validnost i osetljivost). Istovremeno je raspon variranja skorova na ovako operacionaliziranoj varijabli pomeren ka višim vrednostima, što je verovatno uslovalo korelacije s nižim intenzitetom sa ostalim merenim varijablama. Budući da na školski uspeh učenika utiče veliki broj faktora, u narednim je istraživanjima treba ispitati i neke druge individualne (npr. temperament i emocionalnu regulaciju), socijalne (interakcije sa nastavnicima i trenerima) i determinante školskog i sportskog uspeha na većem i heterogenijem uzorku sportista oba pola.

ZAKLJUČCI

imajući u vidu značaj školskog postignuća u našem društvu, u ovoj studiji ispitano je kako prediktorski parametri obrazovanja oca i obrazovanja majke, adaptivni perfekcionizam i neadaptivni perfekcionizam, i ispitna anksioznost i somatizacija utiču na varijabilitet školskog uspeha kod 122 odbojkaša (u kadetskom i juniorskom uzrastu). Finalni nalazi hijerarhijske regresione analize uz 29% varijabiliteta ukazuju na relevantan i samostalan doprinos adaptivnog i neadaptivnog perfekcionizma predadolescenata i adolescenata u predikciji školskog uspeha u odbojkaškoj populaciji. Istovremeno, niska prediktivna snaga merene varijable somatizacije nije pokazala statističku značajnost, što ukazuje na opreznost prilikom generalizovanja zaključaka.

Uprkos navedenim metodološkim nedostacima, ova studija predstavlja prvo istraživanje u Srbiji koje nudi uvid u linearnu povezanost deteta, obrazovanja njihovih roditelja, kao i adaptivnog i neadaptivnog perfekcionizma, ispitne anksioznosti i somatizacije kod mladih sportista.

Izjava

Izjavljujemo da su autori podjednako doprineli radu.

Konflikt interesa

Između autora ne postoji interesni konflikt.

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