

## OVERTRAINING IN STUDENT-ATHLETES: DO COACHES AND PARENTS “PUSH TOO HARD?”

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**Abstract.** *The occurrence of the overtraining syndrome emerges as one of the most important issues in sport. The objective of this study is to determine the prevalence of overtraining in sport university students and to examine the connection between the occurrence of this phenomenon and the behavior of coaches and parents. The study includes 107 students who have been competing in sport disciplines for more than two years. The results indicate that 19.6% of them have experienced overtraining syndrome and that the syndrome is more likely to occur in men and athletes who train individual sports. Overtraining occurs in one third of the athletes by the age of seventeen. Overtrained athletes perceive coaches and parents as individuals who push too hard. Suggestions for changing the behavior of coaches and parents of young athletes with the aim of preventing the occurrence of overtraining have been discussed.*

**Key words:** *overtraining syndrome, student-athletes, coaches, parents*

### 1. INTRODUCTION

Athletes engaging in competitions are under constant stress, either physical or psychological. It is constantly demanded that they exceed their own boundaries and have top performances (Noblet & Gifford, 2002). One can overcome these boundaries only by elevating the training load (both physical and psychological). During the process of overcoming these boundaries, an expected phenomenon in sport, that of overreaching occurs. The effect of this phenomenon is a decreased performance capacity under the influence of a few intensified trainings (Bojić, Mitić, & Radovanović, 2019). The decrease in performance capacity after intensified trainings is normal if the performance returns to the previous level (or higher level) within two weeks. If that does not happen within two weeks, regardless of adequate rest and absence of medical conditions, then it is considered as the consequence of

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the syndrome of overtraining (Budgett, 1998). Overtraining is certainly one of the most examined phenomena in sport, one with an exceptional practical importance (Kellmann, 2010; Greenspan, Fitzsimmons & Biddle, 1991). The most common cause for the occurrence of overtraining is inadequate recovery from physical and psychological burden, that is, overtraining is stress induced (Budgett, 1990). There are different stress factors that influence the occurrence of overtraining, such as psychological, social and physiological (Kenttä & Hassmén, 1998). The most important overtraining syndrome symptom is decreased performance capacity in an athlete, which is also one of the greatest problems in overcoming the syndrome, since many coaches react to the decrease of performance by elevating the training load, which in return only worsens the situation. Apart from the performance decrease, there are also numerous physiological symptoms which indicate the occurrence of overtraining, such as higher resting heart rate, changes in normal blood pressure, delayed return to normal heart rate, elevated basal metabolic rate and body temperature etc. (Johnson & Thiese, 1992). The psychological ones include sleep disturbances, loss of self-confidence, drowsiness and apathy, depression, fatigue, anxiety, confusion, rage attacks, irritability (Johnson & Thiese, 1992). One should make clear difference between the overtraining syndrome and burnout, since overtraining represents the inability to cope with the training stress, and burnout represents exhaustive psychophysiological response to ineffective efforts to meet training and competitive demands (Silva, 1990).

Studies of the overtraining syndrome prevalence give various results. On the sample of adult athletes, the percentage of overtrained athletes reaches 21 percent (Hooper, MacKinnon, & Hanrahan, 1997), 48 or even more than 60 percent (Morgan, O'Connor, Sparling, & Pate, 1987), depending on the competition level. Unfortunately, the prevalence of overtraining among young athletes is not negligible, and studies reveal that overtraining has been noted in more than one third of young athletes (Raglin, Sawamura, Alexiou, Hassmén, & Kenttä, 2000; Kenttä, Hassmén, & Raglin, 2001; Matos, Winsley, & Williams, 2011), while the presence of burnout is considerably less (Gustafsson, Kenttä, Hassmén, & Lundqvist, 2007). It can be stated that overtraining is more common in athletes practicing individual sports (48%), than in those practicing team sports (30%), and that 29 % of young athletes are dissatisfied with their relationship with their coach (Kenttä, Hassmén, & Raglin, 2001). The amount of time an athlete has spent training is, logically, positively related to the occurrence of overtraining (Matos, Winsley & Williams, 2011). Certain studies (Taylor, Rogers, & Driver, 1997) suggest that by applying psychological preparation techniques the prevalence of overtraining may be decreased, especially applying the cognitive-behavioral techniques (Perna, Antoni, Kumar, Cruess, & Schneiderman, 1998).

As clearly indicated by these studies, overtraining becomes an extremely significant issue in the context of sport. Due to the lack of studies of the issue of overtraining in athletes in our national literature, we have conducted a study with the aim of examining the prevalence of overtraining syndrome in the students of the Faculty of Sport and Physical Education in Nis, who are also competitive athletes, but also to examine the relation between the occurrence of this phenomenon and the behavior of coaches and parents.

## 2. METHOD

The study included a sample of 219 students of academic studies at the Faculty of Sport and Physical Education in Niš. 107 students (80 males and 27 women) met the study criteria and have been practicing sport and competing for longer than two years.

All the examinees filled in a questionnaire including questions about gender, the amount of time they have been practicing a competitive sport, the type of sport (team or individual), if they ever experienced overtraining syndrome, and if yes, when it occurred first. Apart from this, the examinees were given a 5-point Likert type scale to express to which degree their coach pressured them, or their parents, to which extent their coach tried to talk to them about something not related with sport results (reverse scoring) and to which extent they used psychological preparation techniques. The obtained data were analyzed using descriptive statistic parameters and T-test.

### 3. RESULTS AND DISCUSSION

As indicated previously, 107 students met the criteria of the study, which included practicing competitive sports. 44 of them (41%) practice individual sports, whereas 63 (58.9%) practice team sports. 48 of them (44.9 %) have been competing between two and five years, and 59 of them (55.1%) more than five years (Table 1).

**Table 1** The percentages of athletes according to different characteristics

		Frequency	Percent	Valid Percent
Gender	Male	80	74.8	74.8
	Female	27	25.2	25.2
	Total	107	100.0	100.0
Sport	Individual	44	41.1	41.1
	Team	63	58.9	58.9
	Total	107	100.0	100.0
Years of Training	2 to 5 years	48	44.9	44.9
	5 + years	59	55.1	55.1
	Total	107	100.0	100.0
Overtrained	Yes	21	19.6	19.6
	No	86	80.4	80.4
	Total	107	100.0	100.0
When overtraining syndrome first occurred?	Never	86	80.4	80.4
	before 17	7	6.5	6.5
	after 17	14	13.1	13.1
	Total	107	100.0	100.0

In relation to the prevalence of overtraining, the results reveal that 21 athletes (19.6%) have experienced the state of overtraining at least once, while the remaining 86 of them (80.4%) have never experienced the syndrome of overtraining (Table 1). The obtained results are almost identical to the results of the studies which report of the lowest percentage of adult overtrained athletes (Hooper, MacKinnon & Hanrahan, 1997), and at the same time they are drastically lower than the results of other studies (Morgan, O Connor, Sparling, & Pate, 1987). The prevalence of overtraining obtained on this sample is even lower than that mentioned in the study of overtraining prevalence in young athletes (Raglin, Sawamura, Alexiou, Hassmen & Kentta, 2000; Kentta, Hassmen, & Raglin, 2001; Matos, Winsley, & Williams, 2011). The low rate of overtrained athletes in this study, as compared to previous studies, may be the result of the fact that the previous studies were based on samples of elite athletes, whereas most of the students in this study

do not belong to that group. The prevalence of overtraining in female athletes (14.8%) is even lower when compared to that of male athletes (21.3%) (Table 2). Overtrained individual athletes make a higher percentage (25% vs. 15.9%) (Table 2), which is in accordance with the previous studies (Kentta, Hassmen, & Raglin, 2001).

**Table 2** Percentage of overtrained athletes by gender and type of sport

		Overtrained		Total	
		Yes	No		
Gender	Male	Count	17	63	80
		% within Pol	21.3%	78.8%	100.0%
	Female	Count	4	23	27
		% within Pol	14.8%	85.2%	100.0%
Sport	Individual	Count	11	33	44
		% within Sport	25.0%	75.0%	100.0%
	Team	Count	10	53	63
		% within Sport	15.9%	84.1%	100.0%

The data which reveal that one third of the examinees experienced the state of overtraining before the age of seventeen (Table 1) demand that serious focus is placed on coaches and parents, who have huge impact on the prevalence of overtraining in young athletes (Brenner, 2007). This is also indicated by the most significant results of studies which refer to the difference in the pressure imposed by coaches and parents between athletes who experienced overtraining and those who had not (Table 4). There is statistical significance of overtrained athletes who experience their coaches and parents as individuals who put too much pressure on them with the aim of obtaining as better results as possible (Table 3). Furthermore, it is also indicated that the coaches of these athletes showed no interest in discussing anything but sport, as opposed to non-overtrained athletes (Table 3 and 4). The difference in perceiving coaches and parents as stress factors is also noticeable between the overtrained athletes who experienced overtraining before the age of seventeen and those who experienced it at an older age (Table 5 and 6). However, there is no statistically significant difference between these subsamples in their perceiving of the coach's determination to get acquainted with his athletes. These results reveal that both coaches and parents make huge mistakes by exposing young athletes to immense pressure.

**Table 3** Differences between overtrained and non-overtrained athletes

	Overtrained	N	Mean	Std. Deviation	Std. Error Mean
Coach pressure	Yes	21	4.33	.483	.105
	No	86	3.20	1.015	.109
Coach only cares about the result	Yes	21	3.57	.811	.177
	No	86	2.14	.910	.098
Use of psychological techniques	Yes	21	2.14	1.014	.221
	No	86	2.20	1.004	.108
Parental pressure	Yes	21	3.43	.870	.190
	No	86	2.48	.917	.099

**Table 4** Statistical significance of differences between overtrained and non-overtrained athletes

	F	T	df	Sig. (2-tailed)
Coach pressure	9.539	4.976	105	.000
Coach only cares about the result	.421	6.598	105	.000
Use of psychological techniques	.454	-.224	105	.823
Parental pressure	.151	4.306	105	.000

The most thorough ‘cure’ for these factors which additionally contribute to the occurrence of overtraining in young athletes is adopting a more humanistic approach, on part of the coach, when training young athletes. According to this approach (Bačanac, Petrović, & Manojlović, 2011), coaches who train young athletes should aim at building a winning team, but also help the young develop not only physically, but also socially and psychologically. Young athletes should not develop a one-dimensional identity (they must socialize with people outside the context of sport as well), they must be included in the process of making decisions about their own lives, without creating such an atmosphere that they will be loved by their coaches and parents only if they achieve good results in sport (Winsley & Matos, 2011).

**Table 5** Differences between pre- and post-17 overtrained athletes

	First time overtrained	N	Mean	Std. Deviation	Std. Error Mean
Coach pressure	before 17	7	4.86	.378	.143
	after 17	14	4.07	.267	.071
Coach only cares about the result	before 17	7	3.57	.535	.202
	after 17	14	3.57	.938	.251
Use of psychological techniques	before 17	7	2.29	1.254	.474
	after 17	14	2.07	.917	.245
Parental pressure	before 17	7	4.14	.690	.261
	after 17	14	3.07	.730	.195

**Table 6** Statistical significance of differences between the pre- and post-17 overtrained athletes

	F	T	df	Sig. (2-tailed)
Coach pressure	.998	5.537	19	.000
Coach only cares about the result	2.378	.000	19	1.000
Use of psychological techniques	.094	.447	19	.660
Parental pressure	.035	3.225	19	.004

In relation to the difference in applying psychological techniques between overtrained and non-overtrained athletes, it is indicated that no such exists (Table 4 and 6). A low rate of applying psychological techniques is indicated in the whole study sample, even though it is claimed that they may have positive effect on decreasing overtraining (Perna, Antoni, Kumar, Cruess, & Schneidermann, 1998).

## 4. CONCLUSION

The research has revealed the prevalence of the overtraining syndrome in students-athletes. The results reveal that the situation is not alarming if the results of previous international studies are taken under consideration. It is noticed that overtraining is more common in men and athletes who practice individual sports. Overtrained athletes perceive their coaches and parents as over demanding. Applying a humanistic approach in the training process of young sport categories and a holistic approach to personality development of young athletes, may represent important preventive factors in the occurrence of early overtraining. The basic limitation of this study is revealed in the fact that it did not examine the success the examinees had in sport competitions.

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## **PRETRENIRANOST STUDENATA SPORTISTA: DA LI TRENERI I RODITELJI „PREVIŠE PRITISKAJU”?**

*Javljanje sindroma pretreniranosti je jedan od bitnijih problema u sportu. Cilj ove studije je bio da utvrdi prevalencu prisustva pretreniranosti kod studenata sportista i ispita povezanost pojave ovog fenomena sa ponašanjem trenera i roditelja. U istraživanju je učestvovalo 107 studenata koji se takmičarski bave sportom duže od dve godine. Rezultati ukazuju da je 19,6% doživelo pretreniranost I da se ona češće javlja kod muškaraca I onih sportista koji se bave individualnim sportovima. Trećina sportista doživi pretreniranost do sedamnaeste godine. Pretrenitani sportisti percipiraju trenere i roditelje kao osobe koje vrše preveliki pritisak. Predlozi sa promenu ponašanja trenera I roditelja mladih sportista u cilju prevencije pojave pretreniranosti su diskutovani.*

*Ključne reči: sindrom pretreniranosti, studenti sportisti, treneri, roditelji*