

Original research article

**ATTITUDES OF STUDENTS OF PHYSICAL EDUCATION
AND SPORTS ABOUT DOPING IN SPORT**

UDC 796.011.5

Ratko Pavlović¹, Kemal Idrizović²

¹Faculty of Physical Education and Sport, University of East Sarajevo,
Bosnia and Herzegovina

²Faculty of Sport and Physical Education, University of Nikšić, Montenegro

Abstract. *The main objective of the research is to test the level of knowledge and identify students' attitudes about the use of illicit substances (drugs) in sports. The study included a total of 100 students, of which 50 students were from the Faculty of Physical Education and Sports in Eastern Sarajevo and 50 students from the Faculty of Sports and Physical Education from Nikšić. Third and fourth year students participated, 76 men and 24 women. As a way of gathering the necessary information an anonymous questionnaire was used, with 13 clearly defined questions (11 closed type questions and 2 open-ended type questions) which were related to the specific knowledge and attitudes about the use of doping substances in sports. It is important to note that 80% of the participants involved in any sport (sport games, athletics, martial arts, skiing, tennis), different ranks of competition. The obtained results are relevant for the global indicator of awareness, knowledge and attitudes of students about the increasing problem of today's modern sport that is called doping.*

Key words: *attitudes, prevention, doping, students.*

INTRODUCTION

Pioneers of modern doping in sport were swimmers. They swam at the 1865 contest across the Amsterdam channel and they excelled in all the disciplines. After the incredible success of the competition in the sporting circles of the time more and more rumors were spread about the use of some types of stimuli that helped, "the contestants to move through the water as if they had fins on their feet". The first information about the doped

Received March 6, 2013 / Accepted May 23, 2013

Corresponding author: Ratko Pavlović, Ph.D.

St. Vuka Karadžića 30, 71126 Lukavica, East Sarajevo

Phone: +387 (65) 934-131 • E-mail: pavlovicratko@yahoo.com

athletes we have in the modern Olympics held in St. Louis when the American winner of the marathon Hicks while under medical care received several subcutaneous injections of strychnine sulfate (Pupiš & Polgar, 2006; Pavlović, 2006). During the decades that came stimulants ranked high in the world of sports. The use of anabolic steroids in modern sport is recent. The first users of anabolics were mainly body builders, weight lifters, football players, cyclists, and athletes, in general those athletes that were subjected to extreme efforts. After some time, the stimulants slowly became part of the "queen of sports".

The first recorded death due to the use of illicit substances was recorded in 1896 when English cyclist Linton died during the Paris-Bordeaux race, after consuming ephedrine (Pupiš & Korčok, 2004). In 1960, at the XVII Olympics in Rome, Danish cyclist Kurt Jansen Enemas died, who according to experts was receiving strong doses of amphetamine derivatives and nicotinic acid from his coach. After this event, the IOC Medical Commission prepared a technical analysis of the material which was accepted at the Olympic Games in Tokyo in 1964 and also accepted the first definition of doping. These are the Olympics that are especially important because of the adoption of the first list of banned substances and at the Olympic Games in Mexico City in 1968 the list was officially approved and the testing of athletes started in the Summer as well as the Winter Olympics (Mačvanin, Soldat, & Mačvanin, 2011; Živanović, 2000). The International Olympic Committee in 1975 prohibited the use of all forms of stimulants. At the same time, regardless of the stated commitment to preserving the spirit of sport, most of the sports federations continued with the development of chemical and biological agents and methods that enable endurance and feasibility.

The latest seizure of medals from cyclist and Tour de France winner Lance Armstrong is certainly a surprising fact and warns all those who engage in doping substances that they can be detected and thus lose much more than their medals, prestige and honor in the world of sports. Or the example of Marion Jones and Tim Montgomery who, after the discovery of THG doping, are no more masters of athletics (Michalák, & Kyselovičová, 2001; Hnizdil, 2000).

Doping is gaining momentum in professional and top sporting events, in European Championships, World Cup and Olympic Games. The last Olympics in London were also marked by doping scandals of some athletes, when before the start of the games 12 athletes were disqualified (martial arts, athletics, cycling, gymnastics, water sports) and two medals were seized after the games. Gold was taken from the Belarusian ball thrower Nadzeya Ostapchuk who was tested positive for Methenolone and the bronze medal from Uzbeks wrestler Soslan Tigievu (Grohmann, 2012a). This happened although before the Olympic Games in London announced that half of the competitors will be tested for drugs with 150 scientists, which would take samples until the end of the Paralympic Games. It was also stated that any athlete who wins a medal will undergo testing and the Olympic anti-doping lab will test up to 400 samples per day for more than 240 banned substances, where in the course of the competition participants will be available for testing without any notice (BBC, 2012). A shocking fact of the official of the World Anti-Doping Agency (WADA), John Fahey, who published that on July 24 107 athletes were sanctioned for doping in the last six months up to June 19 (Grohmann, 2012a; UKAD, 2012). British sprinter Dwain Chambers and cyclist David Millar and pistol shooter Carl Myerscough competed in London, after the British Arbitration Court overturned the lifetime ban of the British Olympic Association. Other competitors at the Summer Games that were included in previous doping cases included American athletes Justin Gatlin and

La Shawn Merritt and Jamaican sprinter Yohan Blake, although Blake's substance of choice was not on the list of banned by WADA (Grohmann, 2012b, c).

The knowledge and attitudes of university students about the problem of doping in sport has been the subject of research of other authors. Some authors (Melia, Pipe, & Greenberg, 1996) conducted a survey of five Canadian regions, which included 107 schools with 16,119 students, randomly selected in order to determine the prevalence of the use of anabolic-androgenic steroids, their attitudes and knowledge about doping. The results showed that most of them used banned substances in the year prior to the survey. A total of 29.4% of the participants said they injected some substance, and 29.2% shared the needle during injection of anabolic-androgenic steroids. A significant number of participants said they used other substances (caffeine, 27%, extra protein, 27%, alcohol 8.6%; pain medicine, 9%; stimulants, 3.1%; "doping methods", 2.3%, beta-blockers, 1%) attempting to improve their sport performance. These results were unexpected and alarming for teachers, health and sports workers.

Kindlundh, Isacson, Berglund, & Nyberg (1998) conducted a survey among high school adolescents in Uppsala in order to determine the extent of taking banned drugs in sports. The anonymous questionnaire included 2742 students. The results showed that 2.7% of men and 0.4% of girls used the drug at some time in their lives. As the main reason for doping they cited the improvement of their physical appearance and the improvement of their athletic performances.

There were some alarming results obtained in a study carried out by Polish authors (Rachoń, Pokrywka, & Suhecka-Rachoń, 2006). They conducted a survey via a known internet portal during one month in order to determine the prevention of drug use among young people in sport. The sample consisted of 3687 (48.2% of men) and (women 51.8%), aged 19-20. The questions were related to their physical activity, exercise and behavior, level of education and the use of anabolic androgenic steroids (AAS). The results showed that a prevalence of AAS use among men 6,2% and 2,9% in women. Male AAS users, compared to non-users, were more concerned about their physical appearance, were less educated and often engaged in a sporting activity. Among female AAS users, there are no significant differences regarding lifestyle or sports participation. However, when compared to non-users, female AAS users were less educated, where it was concluded that the use of AAS in Poland is a reality and it can become a serious health problem among adolescents and young adults. A group of American authors (Mc Cabe et al., 2007), in extensive studies have presented the results of a national survey that showed the use of anabolic steroids, their frequency of usage and trends among U.S. college students. Data were collected through earlier surveys with more than 40,000 students from 119 faculties in the periods 1993, 1997, 1999, 2001. The results showed that in the 1993-2001 period a surge occurred in the use of prohibited substances.

Wanjek, Rosendahl, Strauss, & Gabriel (2007) published the results of their research conducted in 2004 in Thuringia (Germany) based on a survey of 16 elementary, 4 high, three sports and 4 vocational schools with the aim of determining the current situation and possible intervention when it comes to the use of illegal substances. From a total number of 2287 students, as many as 15.1% had used a banned drug in the previous year. Of these, 0.7% consumed anabolic androgenic steroids (AAS), 0.4% of growth hormones, stimulants, 2.4%, 13.2% cannabis, 0.1% diuretics, 2.2% cocaine/heroin and 0.3% erythropoetin. Moreover, 490 non athletes confirmed that they use doping 5% more than

recreational athletes ($N = 1254$) and almost three times more than athletes ($N = 497$). All three groups of non-athletes, recreational athletes and sportsmen had poor results on the test of knowledge about doping in general, with an average below 60% in every case. The findings indicate the need to improve specific knowledge of doping among students and their attitude toward doping has to be changed.

Similar studies were carried out in the last few years by Ukrainian authors who even published a national study in partnership with WADA (Bondarev, Ajitskiy, Galchinsky, Labskir, & Druz, 2008; Bondarev, Galchinsky, Labskir, Druz, & Ajitskiy, 2009; Bondarev & Sirenko, 2010). In our country there has not been any research on this subject in the population of pupils and students. For these reasons, and often based on questions that come to mind regarding doping, almost daily, in the sphere of sport and in the wider public, the idea for this research emerged. The basic problem, which is defined in this study are the attitudes and knowledge about the possible prevention of doping substances in sport in order to assess students' knowledge and attitudes about the use of illicit substances (drugs) in sports.

THE METHOD

The study included a total of 100 students, 50 of which were students from the Faculty of Physical Education and Sports in Eastern Sarajevo, and 50 students from the Faculty of Sports and Physical Education from Nikšić. The students that were included were third and fourth year students, aged 21-22. Of the total sample ($N=100$), 76 of the participants were males, while 24 were females. As a way of gathering the necessary information, an anonymous questionnaire was used with 13 clearly defined questions which were related to the specific knowledge and attitudes about the use of doping substances in sports (eleven were closed type questions and two questions were open type). The survey was conducted with students in the academic year 2012/2013, and all of the students voluntarily participated in the survey. It is important to note that 80% of the participants participated in a sport (sport games, athletics, martial arts, skiing), and different ranks of competition.

RESULTS WITH DISCUSSION

The results of our research are presented in table 1 and figures 1 and 2 (prevalence of doping in sports). Based on global insight into Table 1 it can be concluded that the students were uniform in only one question (question 5) which referred to the opinion that if any of the current top athletes took doping. All students (nearly 100%) responded affirmatively with YES, while in other issues opinions were divided. Although the study included a small sample, the obtained results are great and extremely important. Based on the survey results a real picture of the attitudes and knowledge of the student population on the (mis)use of doping in sport was determined.

Table 1. The questionnaire responses.

QUESTIONS	Yes	No
	%	%
1 Have you ever come in contact with doping substances?	32	68
2 Do you know the list of banned substances and drugs?	43	57
3 Have you ever taken the banned substance?	13	87
4 Would you ever taken a drug to achieve personal results?	36	64
5 Do you think that some of the current top athletes are taking drug?	99	1
6 Have you met someone for whom you knew to be taking dope?	65	35
7 Do you think it is right to have someone positive to doping near you?	47	53
8 Do you think that doping controls can detect 100% of the athletes who took dope?	52	48
9 Do you think there is a way to deceive the doping control tests?	69	31
10 Are there some of the world anti-doping program to support the athletes in the country?	44	56
11 Do you know what WADA is?	56	44
12 Which sport do you think is the most marked by doping scandals?	Chart 1	
13 Which sport do you think is the least marked by doping scandals?	Chart 2	

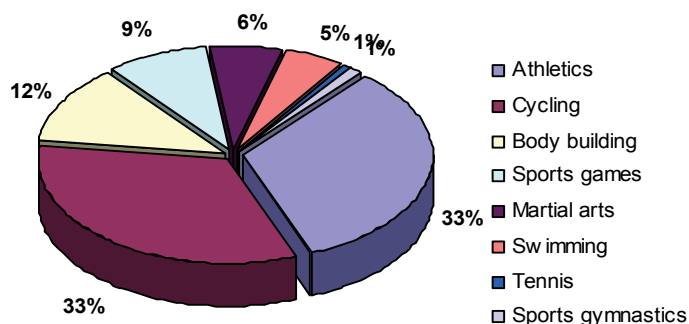


Fig. 1. Sports most marked by doping scandals.

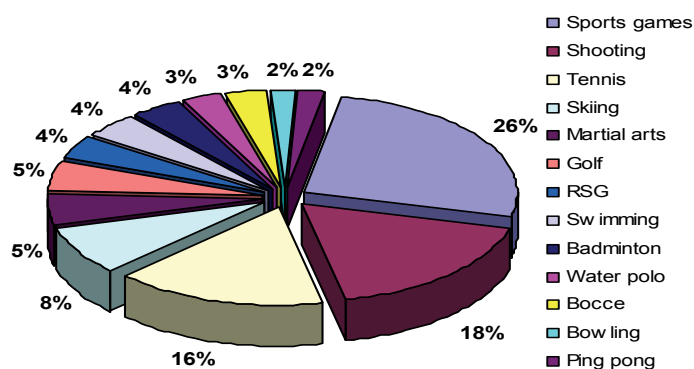


Fig. 2. Sports least marked by doping scandals.

The last half century in sports is often called "the time of doping". Besides the sporting spirit, which is nowadays neglected, participants increasingly subject themselves to the use of banned performance-enhancing drugs, fraud and deceit in order to get to that end goal with consciously knowing they risk their own lives and future. Doping in sport has existed since sport became a social phenomenon, the desire to win and for competition is as old as humanity itself, only the drivers of these desires have changed (Đukanović, 2011; Mladenović, 1980). The problem may be in the personality of the athlete who is dissatisfied with his performance or advancement, a very strong desire to achieve the best results, which is followed by huge profits, popularity and reputation, the belief that others use the same or similar substances and lack of knowledge about the unwanted effects of the use of doping. Very often, the environment and the expectations of coaches, the audience and family and friends and even society itself lead to considerable pressure on the athlete, which is manifested by using banned substances. Awareness of the limits of the body and the limits of endurance through which one cannot pass, lead the athlete to cross the limits even at the cost of their own health (Mašić, 2006; Pavlović, 2006).

Most studies show that 3-12% of male adolescents admitted to using AAS at some point during their lives. Among female adolescents, studies find that it is likely that 1-2% use steroids. Current strategies for dealing with the increase of doping by adolescents primarily involves education and prevention, prohibition and anti-doping testing (Yesalis, Michael, & Bahrke, 2000). The results of this study have provided some information on the attitudes and knowledge of students of physical education and sport on the problem of doping in sport, and it is important for the reason of the population included in the survey, because they are the future educators in physical education, and sport, whose imperative it is to work with young populations and their education on the issue.

The research conducted by Slovak authors (Pupiš & Polgar, 2006) was aimed to determine the views and opinions of the population of students on the use of doping in sport. The questionnaire has been used and the results were similar to our study. The participants had the same attitude on the use of doping as some of the current top athletes who gave a 100% affirmative answer.

In our study, of the total number of participants, 32% had been in direct contact with a prohibited substance, and 68% had never been in contact with any of forbidden doping substances (Table 1), unlike Slovak students, of which only 6% came in contact with doping. The presented data show that a significant majority of students still have the correct opinion, and a negative attitude toward doping, thus showing that doping is unwanted and should not be practiced. One should also take into account the fact that 57% of them do not know the list of banned substances and drugs, which probably represents a problem because the education about doping is insufficient, insufficiently represented so we should enter into bilateral agreements with the main anti-doping agency, which would preventively educate students about the unwanted effects of using doping agents (Laure, Binsinger & Lecerf, 2003). This is not surprising because we have data showing that the information of the general practitioners who perform testing of athletes is not sufficient. That is according to a survey by French authors (Laure, Binsinger & Lecerf, 2003). They compiled a sample of 402 French general practitioners, randomly, by telephone with a prepared script, had a conversation about their attitudes and knowledge about doping, and their contact with doped athletes. The results showed that the response was 50.5% (153 men and 49 women, mean age 45.6 ± 5.6 years). Of the participants, 73% confirmed that they had a list of banned products, and only 34.5% said they were aware of the recent

French law on the fight against doping dating from March 1999. Some 11% directly met the requirement for a prescription drug funds during the preceding 12 months (mostly anabolic steroids, stimulants and corticosteroids were requested), and 10% had warned an athlete who was afraid of the health risks (mainly anabolic steroids). More than half (52%) doctors issued a prescription for a doping agent. According to 87.5% of the participants, doping is a public health problem, and 80% said that doping is a form of addiction. Most (89%) reported that general practitioners have a role in the prevention of doping, but 77% were not eager to participate in prevention.

A very high percentage (87%) of our participants had never used banned substances, only 13% had taken a banned substance, so we can say that this data is encouraging and the percentage is negligible. Given that these are the students of FFVS the data was expected, taking into account the nature of their education and knowledge acquired during their studies especially from the group of medical subjects, some basic sports (athletics, swimming) where doping agents are mentioned as great harm for the human body. But the problem are the 13% of those who have already consumed an illegal substance, probably (not) aware of the possible consequences. If we compare the results with earlier ones, we can conclude that our results are different (Bondarev et al., 2008; Bondarev et al., 2009; Wanjek et al., 2007) but it does not mean that the survey included larger sample in order that those results would be the same in our case.

Similarly, students were thinking about the possible use of banned substances to achieve personal results. More than half, 64% had a negative view on the matter and 36% supported the use of prohibited substances for personal results. Among these 36% are probably also those 13% who consumed the substance, so that this percentage and the opinion is expected, but it is very important that the majority of participants have a negative opinion on this matter and does not support taking any banned substances. There is a frightening fact obtained by American researchers who studied the negative effects of doping on athletes body. They obtained the results where 195 of 198 (98.5%) of athletes are ready to use doping and 50% would be willing to die (within 5 years) after a big victory (Pupiš, & Korčok, 2004).

It is interesting to note the fact and the attitude of all the participants (nearly 100%) who believe that some of the current top athletes were taking some sort of banned substances. This confirms our assumption that there is a negative perception about top and professional sports in this young population, where most of them are engaged in some sport. Such information greatly reduces the level of motivation of young people and has a significant impact on their future careers. The same results were obtained by some other authors (Bondarev, & Sirenko, 2010; Pupiš, & Polgar, 2006).

As many as 65% had met someone who was taking drugs, which means that they are in some way familiar with the effects of these substances mostly through their friends or acquaintances, and 35% have never met a person whom they knew to be using banned substances. They expressed a similar view as to whether it was right to have someone positive for doping in their vicinity. Of the total number of students 47% are against such a person being found in their vicinity and 53% approve, which shows a certain degree of tolerance to doping in sport. One maybe interesting result has been obtained about the reliability of testing on doping and possible frauds. In response to this question, 48% of the participants believe that doping controls cannot always detect the athlete using doping, and 52% believe that this is possible. More than half of the participants, 69% believe that there are certain ways to deceive the doping control tests. Similar results in their study

were also obtained by some other authors (Pupiš, & Polgar, 2006). This percentage suggests that there is still a dilemma among students about the reliability of anti-doping controls and their implementation.

When asked if there was some state anti-doping program to assist athletes, more than half of the sample (56%) are aware that in their country there is some of world anti-doping program to support athletes, in terms of continuing education, seminars, conferences, etc., and up to 44% of them are not familiar with these agencies at the state level.

In terms of sport, which is most marked by doping scandals, the responses were different. (Figure 1). Of the sports the first ones singled out were cycling and athletics (33%), then body building (12%), sports games (9%), martial arts (6%), swimming (5%), and finally tennis and gymnastics (1%). In a survey of Slovak authors (Pupiš, & Polgar, 2006) athletics took first place (88%), then strength sports (30%) and sports games (24%). Generally, we see that it usually revolves around individual sports, where we assume that cycling and athletics are generally identified with the constant media attention and with the athletes in this group, who are most often part of doping control. On the other hand, there is the power of sports associations which generally perceive them as sports in which doping is used too often. One needs to add to this the latest seizure of medals from cyclist Armstrong and the Olympic gold from Belarusian ball thrower at the Olympic Games in London (Wilson, 2012).

As the sports least infected by doping 24% of the responses were related to sports games, then archery 17%, 16% tennis, skiing (8%), golf and martial arts (5%), RSG, badminton, swimming (4%), water polo, dancing, bocce (3%), table tennis and bowling (2%) (Figure 2). In a survey of Slovak authors (Pupiš, & Polgar, 2006) sports games, with 66% were also indicated as a sport that is least infected by drugs.

Archery and sports games have been identified as the least infected by drugs, even if our issue is not specific to sports, sports groups. This result can be justified by the fact that the whole team is included, not one individual who can bear the consequences. Related to this is the media coverage of the offenders that is not as common as in the individual sports. Also, the cost of doping control in sport clubs is several times larger than that for the individual athlete.

We generally think that doping bypassed us in a wide circle, or just our sport, but the data of the agency for anti-doping control deny this. According to the Agency for Doping Control data which in the past two years (since 2010) has done 599 tests, which were not passed by only 5 athletes 4 of whom were from Bosnia and Herzegovina (B&H): Elmedin Kikanović (basketball-12-month ban, the use of Metilheksanemin), Samed Osmanović (kick-boxing ban three months, the use of an anabolic steroid Boldenone androgenous), Nedim Fišić (weightlifting - two-year ban, the use of steroids methandienon), Edin Muslić (karate-pending, use of Carboxy-THC) and competitor from Serbia Caba Nadj (weight lifting - pending). According to the heads of agencies in B&H, in the beginning of testing there was resistance from certain people involved in the world of sport and from the B&H public, and it even came to verbal and physical conflict, so that the tests were not done, and after that there were no major problems. One good example is the Football Association of Bosnia and Herzegovina, whose leaders sought help from the agency, when regulations have been defined that were later adopted by UEFA and FIFA (Press RS, 2012).

It is now clear that physicians play an important role in the recovery of athletes (Prokop, 1997) and it is very frightening rhetoric by some scientists that the biggest fight in

sport today is being conducted by chemists and pharmacists on their way to the victory of doping (Podstupka, M. (2003). It is for that reason very important to fight against doping, by all possible means and to advocate for education since the beginning of organized sports.

Without question doping must leave sports, but the question is whether this is just a utopia, or whether the goal is still achievable?

CONCLUSION

The obtained results are a global indicator of global awareness, knowledge and attitudes of the students of the Faculty of Physical Education and Sports of the problem of today's modern sport. According to our research, out of the total number of participants, 68% had never been in contact with doping substances, 57% were not familiar with the list of prohibited substances and drugs, 87% had never taken a prohibited substance and 64% would not take any banned substance for a better personal result. In the opinion of the all participants, some of today's best athletes still take doping agent, and 65% of those surveyed met someone who was using doping substances. Up to 53% of the students consider that people positive to doping are not desirable in their vicinity. As for the anti-doping controls, 52% of the participants have the attitude that control can detect the athlete who used doping and 69% of the students consider that in some way it is possible to cheat drug tests. As expected, doping marked cycling and athletics the most, which contributed to these sports being in the focus of the public media. Named are also weight lifting and body building, swimming, martial arts, as least infected are sports games, archery, tennis, skiing, golf, etc. The situation in sport is alarming and the extent of the (lack of) knowledge that we have is still being evaluated. This is particularly alarming because the World Anti-Doping Agency (WADA) does not distinguish between intentional and unintentional doping. This fact is all the more serious because the recreational use of drugs in sport is not sanctioned, and athletes have no fear using them, which can lead to its spread among the other athletes.

On the basis of these results, and especially those 13% who have already taken banned substance and 36% who would take the banned substance for personal scores we should take this data as a warning. We believe that more information and awareness is needed among youth sports, sports schools and sports clubs on the harmful effect of doping on the health of athletes. For the purpose of the assessment of the objectivity of intentional and unintentional doping, it would be appropriate if the drugs available on our market were marked, which would clearly show that the drug does or does not contain banned substances. In terms of the law, it is definitely a long process, but the pharmaceutical companies should not be a problem, because they know what their products contain. It is also necessary to communicate with the young athletes in order for them to be able to understand all the negativity and the risks associated with doping.

Generally it can be concluded that the results of students in terms of statistics on the use of doping, knowledge and awareness about the negative effects of doping are insufficient. It is this population of students that is the future of sports and therefore the need for additional education on this issue is needed. This research can serve as a framework for the same or similar types of research and all in order to understand and prevent the use of prohibited substances in sport among young people.

REFERENCES

- Bondarev, D.V., Ajitskiy, K.Y., Galchinsky, V. A., Labskir, V.M., & Druz V.A.(2008). Attitude towards doping of Sports students and students of Polytechnic Sciences. *Journal of Pedagogic, Psychologic and Medico-Biologic Problems of Physical Training and Sport*, (5), 18-24.
- Bondarev, D.V., Galchinsky, V.A., Labskir, V.M., Druz, V.A., & Ajitskiy, K.Y. (2009). Doping prevalence and knowledge among high school students. Proceedings of the International scientific conference "Actual problems of developing Sport for All", held in Ternopil, pp. 293-295.
- Bondarev, D.V., & Sirenko, R.R. (2010). Допинг в студенческой среде: знания, установки и поведение (Doping amongst students: Knowledge, Attitude, Behaviour). Proceedings of the 1-st Regional Scientific Practical Conference "Physical Education and Sport Improvement among Sevastopol Youth", held in Sevastopol, pp. 10-25. In Russian
- Dukanović, N. (2011). Uticaj dopinga na pojavu neželjenih kardiovaskularnih događaja (Doping influence on the occurrence of adverse cardiovascular events). *Sport Mont*, 8 (25-27), 59-64. In Serbian
- Grohmann, K. (2012b). Testers nab more than 100 athletes - WADA. Reuters. Available at: <http://www.reuters.com/london-olympics-2012/articles/2012/07/24/testers-nab-more-100-athletes-prior-london-wada>
- Grohmann, K (2012c). Doping back in spotlight with new cases, past offenders. Reuters. Available at: <http://uk.reuters.com/assets/print?aid=UKBRE8730FJ20120804>
- Kindlundh, A.M., Isacson, D.G., Berglund, L., & Nyberg, F. (1998). Doping among high school students in Uppsala, Sweden: A presentation of the attitudes, distribution, side effects, and extent of use. *Scandinavian Journal of Public Health*, 26 (1), 71-74
- Laure, P., Binsinger, C., & Lecerf, T. (2003). General practitioners and doping in sport: attitudes and experience. *British Journal of Sports Medicine*, 37, 335-338.
- McCabe, E.S., Brower, K. J., Brady, T., West, B.T., Toben, F., Nelson, T.T., & Wechsler, H. (2007). Trends in non-medical use of anabolic steroids by U.S. college students: Results from four national surveys. *Drug Alcohol Depend*, 90 (2-3), 243–251.
- Mladenović, M. (1980). *Doping-superiornost ili smrt (Doping-superiority or death)*. Vuk Karadžić. In Serbian
- Melia, P., Pipe, A., & Greenberg, L. (1996). The use of anabolic-androgenic steroids by Canadian students. *Clinical Journal of Sport Medicine*, 6 (1), 9-14.
- Michalák, K., & Kyselovičová, O. (2001). Užívání anabolik počas kondičného tréningu rekreačne športujúcich mužov (Taking anabolic steroids during conditioning training recreational athletes). *TVŠ*, 11 (2), 17- 21. In Slovak
- Mašić, Z. (2006). Teorija sporta (Theory of sport). Belgrade: Faculty of Management in Sport. In Serbian
- Mačvanin, N., Soldat, P., & Mačvanin, Đ. (2011). Šta je doping? (What is a doping?). *Sport Mont*, 8 (25-27), 426-432. In Serbian
- Prokop, L. (1997). Môže jednanie lekára ohroziť športovca? (Dealing doctor may endanger the athlete?). *Austrian Journal of Sportmedicine*, 27, 78-82 . In Slovak
- Podstupka, M. (2003). Namiesto mydla hrajú v opere steroidy (Instead of playing in the soap opera steroids). *Ecopress*, pp. 60-63. Bratislava. In Slovak
- Pupiš, M., & Polgar, V. (2006). Znalosti športujúcej mládeže o dopingu a možnosti dopingovej prevencie (Knowledge sportmen youth of doping and possible doping prevention). In: Proceedings of the International Scientific Seminar of Doctoral Candidates: A humanistic form of sport and physical education, Bratislava: UK FTVŠ Bratislava, pp. 46. In Slovak
- Pupiš, M., & Korčok, P. (2004). Vytrvalostný šport a doping (Endurance sport and doping). *Slovenská chôdza*, 8 (4), 36-41. In Slovak
- Pavlović, R. (2006). *Atletika-antropološka obilježja (Athletics-Anthropological characteristics)*. East Sarajevo: Faculty of Physical Culture. In Serbian
- Rachoń, D., Pokrywka, L., & Suchecka-Rachoń, K. (2006). Prevalence and risk factors of anabolic-androgenic steroids (AAS) abuse among adolescents and young adults in Poland. <http://link.springer.com/journal/38International Journal of Public Health>, 51, (6), 392-398.
- Hnizdil, J. (2000). *Doping aneb zákulisí vrcholového sportu (Doping or backstage top sport)*. Praha, Grada Publishing, pp. 23. In Slovak
- Živanović, N. (2000). *Prilog epistemologiji fizičke kulture (Contribution epistemology of physical education)*. Panoptikum Niš. In Serbian
- Wanjek, J.B., Rosendahl, B., Strauss, H., & Gabriel, H. (2007). Doping, drugs and drug abuse among adolescents in the state of Thuringia (Germany): Prevalence, knowledge and attitudes. *International Journal of Sports Medicine*, 28 (4), 346-353.

- Wilson, S. (2012). „Belarus shot putter stripped of Olympic gold". Associated Press. Available at: <http://www.canada.com/sports/all/Belarusian+shot+putter+Nadzeya+Ostapchuk+stripped+Olympic+gold+medal/7082246/story.html>
- Yesalis, C.E., Michael, S., & Bahrke, M.S. (2000). Doping among adolescent athletes. *Best Practice & Research Clinical Endocrinology & Metabolism*, 14, (1), 25-35.
- BBC (2012). London 2012: All medallists to be drugs tested at Olympics. BBC News Online. Available at: <http://www.bbc.co.uk/sport/0/olympics/18849517>
- Grohman, K. (2012 a). Doping-IOC strips Uzbek wrestler of Olympic bronze. Reuters. Available at: <http://www.reuters.com/article/2012/11/07/us-doping-olympics-wrestler-idUSBRE8A617120121107>
- UKAD (2012). Testing during Games-time.. Available at: <http://www.ukad.org.uk/London2012/athletes/testing-during-Games-time>
- Press RS (2012). Two years since the first anti-doping control in Bosnia and Herzegovina (29 December 2012), pp. 38.

STAVOVI STUDENATA FIZIČKOG VASPITANJA I SPORTA O DOPINGU U SPORTU

Ratko Pavlović, Kemal Idrizović

U istraživanju je učestvovalo 100 studenata Fakulteta fizičkog vaspitanja i sporta iz Istočnog Sarajeva (50 ispitanika) i Fakulteta za sport i fizičko vaspitanje iz Nikšića (50 ispitanika). Obuhvaćeni su studenti III i IV godine studija, 76 muškaraca i 24 djevojke. Osnovni cilj istraživanja je da se provjeri nivo znanja i utvrde stavovi studenata o upotrebi zabranjenih supstanci (droga) u sportu. Kao način prikupljanja neophodnih informacija korišćen je anonimni anketni upitnik sa 13 jasno definisanih pitanja (11 pitanja zatvorenog i 2 pitanja otvorenog tipa) koja su se odnosila određena znanja i stavove o upotrebi dopinga sredstava u sportu. Dobijeni su relevantni rezultati koji su globalni pokazatelj informisanosti, znanja i stavova studenata o sve većem problemu današnjeg modernog sporta koga nazivamo doping.

Ključne reči: stavovi, prevencija, doping, studenti.