

XX

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2017 in Physical Education, sport and recreation

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Faculty of Sport and Physical Education



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THE DIFFERENCES IN POSTURAL STATUS BETWEEN FOOTBALL PLAYERS AND NON-ATHLETES.....	232
Bojan Jorgić, Vladimir Živković, Saša Milenković and Dobrica Živković	
THE INFLUENCE OF MOTOR SKILLS ON THE RESULTS OF THE HIGH JUMP STRADDLE TECHNIQUE ON A SAMPLE OF ELEMENTARY SCHOOL CHILDREN	237
Daniel Stanković, Biljana Milanović, Aleksandar Raković, Emilija Petković and Ratko Pavlović	
ANTHROPOMETRIC AND PHYSICAL TESTS TO 15 YEARS AGE IN TIRANA CITY.....	242
Mema Florian, Qeleshi Ernest, Martiri Altin and Kapedani Lindita	
PHYSICAL EDUCATION AND SPORT IN THE PEDAGOGICAL FACULTY OF THE “ST. CIRIL AND ST. METHOIIUS” UNIVERSITY OF VELIKO TURNOVO, BULGARIA	243
Lyudmil Petrov, Daniela Jordanova and Veselina Petrova	
PHYSIOLOGICAL LOAD IN 14 YEAR OLD CHILDREN IN PHYSICAL EDUCATION	246
Edison Ikonomi	
SYSTEM OF CAMING EXERCISES FOR PRE-SCHOOL CHILDREN AND PRE-PRIMARY SCHOOL PUPILS IN PRIMARY EDUCATION (THEORETICAL ASPECTS)	247
Daniela Yordanova and Vesselina Petrova	
SPORTS MEDICINE AND PHYSIOLOGY	251
PHYSICAL EDUCATION EFFECTS ON THE MOTOR ABILITIES OF ADOLESCENTS WITH MILD INTELLECTUAL DISABILITIES	253
Marija Stojanović and Marko Aleksandrović	
PHYSIOLOGICAL, BIOCHEMICAL AND PSYCHOLOGICAL CHARACTERISTICS OF CHESS PLAYERS	258
Dušan Veličković, and Dragan Radovanović	
POWER CHANGES IN FEMALE STUDENTS OF ACADEMY OF CRIMINALISTIC AND POLICE STUDIES ¹	262
Raša Dimitrijević, Nenad Koropanovski and Radivoje Janković	
RAT MODELS IN EXERCISE PHYSIOLOGY RESEARCH: OVERVIEW AND FUTURE DIRECTIONS.....	267
Dragan Radovanović and Vladimir Lj. Jakovljević	
SPORT AS A PROTECTIVE OR RISK FACTOR IN ALCOHOL AND TOBACCO PRODUCTS CONSUMPTION	270
Hrvoje Karninčić, Gordan Drašinac and Ana Penjak	
THE DIFFERENCES IN THE RELATIVE STRENGTH OF THE HANDGRIP BETWEEN GENDERS	274
Vladimir Ristić, Violeta Novaković, Saša Bujanj and Ratko Stanković	
USE OF NUTRITIONAL SUPPLEMENTS AMONG ALBANIAN PEOPLE EXERCISING IN GYMS AND IMPACT FACTORS.....	278
Spartak Bozo , Robert Citozi and Gerti Metani	
THE ANALYSIS OF ANATOMICAL CHARACTERISTICS OF THE COMMON PERONEAL (FIBULAR) NERVE AND THEIR CONNECTION WITH SPORTS-RELATED KNEE IJURIES.....	279
Slađana Ugrenović, Ivan Jovanović, Vesna Stojanović, Braca Kundalić, Miljana Pavlović, Jovana Čukuranović Kokoris and Milena Trandafilović	

SPORT AS A PROTECTIVE OR RISK FACTOR IN ALCOHOL AND TOBACCO PRODUCTS CONSUMPTION

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SUMMARY

The aim of the study was to establish differences in alcohol consumption among the athletes and the non-athletes, as well as to explore the situation in Croatia within the global context. A questionnaire on alcohol consumption habits (Alcohol Use Disorders Identification Test - AUDIT) was given to a sample of 80 subjects (50 athletes and 30 non-athletes). The questionnaire was reliable for both groups (Cronbach's alpha 0.73 for the athletes group; Cronbach's alpha 0.70 for the non-athletes group). Anamnestic data and the data on tobacco products consumption habits were also collected. The results showed that the athletes consume alcohol more than the non-athletes (almost significant statistical difference, $p=0.08$). Such trends have been registered before in the world, in particular among the athletes. Thus, the athletes represent a target group on which programmes for decreasing alcohol consumption are carried out. Similar programmes should be carried out in Croatia, as well, in order to monitor the issue. On the contrary, sport stands as a protective factor from the smoking consumption. The athletes consume significantly less tobacco products than the non-athletes ($p=0.02$). To conclude, the study reveals alcohol consumption problem among the athletes and, as such, should be dealt with in an appropriate and immediate way following the examples of other countries that have been dealing with the same problem successfully.

Keywords: substance, health, non-athletes

INTRODUCTION

There are many perceptions on the issue of sport as a protective factor regarding alcohol consumption. While some studies see sport as a protective factor regarding alcohol consumption (Straus and Bacon, 1953), others see no correlation between the two (Kopp et. al., 2015a). Even more, latest studies report on perceiving alcohol as a risk factor (Hildebrand et. al., 2001; Lisha and Sussman, 2010; Turrisi et. al., 2006). Generally speaking, the higher one advances in sport achievement, the more often he consumes alcohol (Leichliter et. al., 1998).

Since various sample group classifications (athlete/non-athlete, recreation/heavier physical activity, team/individual sport) are present in the aforementioned studies, it is very difficult to compare them (Lipowski et. al. 2016). Nevertheless the diversity in group classification can influence the result. Namely, subsamples, in general, are: athletes/non-athletes (Martens, Dams-O'Connor, &

Beck, 2006); recreational sport, i.e. high intensity physical activity (Cych, Kosendiak, Kalwa, & Kosendiak, 2013); team or individual sports (Martens, Watson, Poynald, & Beck. 2005); age groups (Diehl, Thiel, Zipfel, Mayer, & Schneider, 2014); gender groups (Lipowski, Lipowska, Jochimek, & Krokosz, 2016); high and low intensity sport (Baumert, Henderson, & Thompson, 1998); various ethnic groups (Green, Uryasz, Petr, & Bray, 2001; Martens et. al., 2006); athlete's sociological status, commonly whether an athlete or a team leader.

Furthermore, there are neither studies that report on a sample evolved in sport out of fun or 'love' for the game, nor studies that report on a sample forced to do sport. In other words, pupils have PE classes at schools, police officers do sport in order to maintain their physical readiness, and fighterfighters need to be in shape so as to answer their duty etc. In addition, all the aforementioned groups have to fulfill certain physical criterion

together with permanent motor and ability testing (Adams et. al., 2014; Fielitz, Coelho, Horne, & Brechue, 2016; Knapik & East, 2014).

For centuries, people have been making alcohol drinks in many different ways from many different substances (grapes, rice, honey, etc.). Today, unfortunately, alcohol consumption has become an urgent matter of concern not only among adults but among the youth population as well. Consequently, alcohol addiction has become an alarming issue within medical and public health spheres. Many factors influence it – genetics, psychological, cultural and other – and the frequency of its consumption varies (more common among the female than among the male). Since the roots of alcohol consumption are neurophysiologic, they can cause damage to the whole human organ system. Problememes caused by the alcohol consumption appear prior to clinical results. Most often alcohol addicts die due to cardio-nervous diseases. Additionally, alcohol consumption can be found within the workplace domain where it causes many alcohol-related negative health problems: from decreases in productivity and various injuries. Developing strategies and educational programmes would help prevent and reduce alcohol consumption problememes.

The aim of the study is to establish differences in alcohol consumption among athletes and non-athletes, as well as to explore whether the 'trend' in drinking is present only in Croatia or in global context as well.

METHODS

Subjects

The sample consisted of 80 subjects (all male). For the purpose of the study, we divided the sample into two subcategories: the athletes (n=50) and the non-athletes (n=30). In addition, the sample consisted of senior athletes competitors (age ≥ 18) from different individual and team sports, as well as of the non-athletes of the same age. In order to choose the non-athletes, we used the random sample method, while in choosing the athletes we were guided by three criteria. The first criterion was that they compete; the second criterion was that they have, at least, five years experience in training; the third criterion was that they train at least five times a week. The questionnaire was subject to their own will. Time length was 10 minutes.

Procedure

The variable sample consisted of two variables: alcohol consumption score (measure by the AUDIT test) and smoking (tobacco products consumption). In order to confirm their athlete status, the subject had to answer several anamnestic questions: age, sport, years of training experience and number of weekly trainings.

We tested the tobacco products consumption among the subjects with one question. The subjects had to circle one particle from 1 to 6 (from 'I have never smoked' to 'I smoke over 20 cigarettes daily') regarding smoking frequency. Alcohol Use Disorders Identification Test (AUDIT) was used in establishing subjects' habits regarding alcohol drinks consumption. The questionnaire is based on the results obtained by the World Health Organization (WHO) used in early detection of heavy alcohol consumption subjects (Saunders & Aasland, 1983). The questionnaire has fulfilled the reliability criterion in many prior studies on the issue (Bell & Britton, 2015; Lundin, Hallgren, Balliu, & Forsell, 2015; Yee, Adlan, Rashid, Habil, & Kamali, 2015). The questionnaire consisted of 10 particles and the obtained result of each particle varies from 0 to 40 (0 being the minimum score the subject can obtain; 40 being the maximum score the subject can obtain). We also used several categories regarding subjects' results. With one group we tested consumption score, i.e. the addiction score (Sekulić, Ostojić, Ostojić, Hajdarević, & Ostojić, 2012); two categories that refer to heavy consumption score ≥ 11 and light consumption score < 11 (Claussen & Aasland, 1993); five categories (total abstinence- score 0, low level of drinking, score 1-7, risky drinking, score 8-15, heavy drinking, score 16-19, and alcohol addiction, score 20-40) (Luchters et. al., 2011). The first option regarding consumption score, i.e. the addiction score was used.

Statistical analysis

All the data were analyzed using Statistics v. 7.0. (Statsoft, USA). The Inter-Item Correlation and the Cronbach's alpha coefficient were calculated. All variables were analyzed using descriptive statistics (mean, standard deviation, minimum and maximum score). The KS Test was used to determine normality distribution, while the ANOVA and the non-parametric Mann-Whitney U test were used to determine differences among groups.

RESULTS

Table 1 shows parametric reliability of the questionnaire (Cronbach's alpha and average Inter-Item correlation)

	Cronbach's alpha	Average Inter-Item correlation
All groups	0,73	0,24
Athletes	0,73	0,23
Non - athletes	0,70	0,25

As shown in Table 1, ADUIT questionnaire fulfills the reliability criterion on the tested sample although low Cronbach's alpha, in all groups, is above 0.70 that results to be acceptable value (DeVellis, 2016).

Table 2 shows descriptive statistics parameters: mean, standard deviation, minimum and maximum score for all the variables

	Athletes(n=50)		Non-athletes(n=30)		ANOVA		MWU-test	
	AS ± SD	MIN / MAX	AS ± SD	MIN / MAX	F	p	U	P
Age	22.4 ± 4.5*	16.0 / 38.0	25.5 ± 3.7	18.0 / 30.0	9,7	0.02		
Years of training experience	11.3 ± 4.9	5.0 / 26.0	±	/				
Weekly trainings	7.1 ± 2.7	5.0 / 12.0	±	/				
Smoking	1.5 ± 0.9**	1.0 / 4.0	5.0 ± 1.6	1.0 / 5.0			327.0	<0.001
AUDIT	17.5 ± 4.9	9.0 / 26.0	15.6 ± 3.9	11.0 / 26.0	3.2	0.08		

Table 2 shows that the non-athletes are statistically significant older from the athlete group (p=consume more alcohol drinks than the non-athletes but the difference between them is not statistically significant) but is very close to it (p=0.08)); the non-athletes consume statistically significantly more tobacco products than the athletes (p<0.001).

DISCUSSION

If we take into consideration years of training experience and the number of weekly trainings, we notice that the athletes have had 11 years of training experience, in average. Based on the obtained results, we confirm their athlete status. Additionally, all the athletes are younger (age 2.4±4.5) than the non-athletes (25.5±3.7). Saying this, it has been established that age and sex are two variables that influence alcohol consumption (Boyle et. al., 2016; Karam et. al., 2007; Jackson et. al., 2012). Since the study sample consisted of only male subjects, sex did not influence the results.

Additionally, the study reported on the adolescence group as one being the most troubled regarding the alcohol consumption. In other words,

interest in alcohol consumption increases around the age 18 onwards and decreases around the age of 25. The non-athletes fall into the alcohol consumption risk group. Despite the age difference between the groups, both groups are part of age-risk group.

Since the athletes drink statistically more than the non-athletes (p<0.08), it puts the sample group within global alcohol consumption trends (Kopp et. at., 2015b, Kroll et. al., 2016). There are two hypotheses that may explain the aforementioned. The first hypothesis relates to rewarding system (dopamine and endogenous opioids). Namely, it has been stated that sports achievements increase the hormone of happiness and that, accordingly, the athletes are used to a certain level of the hormone. In case the level of the hormone drops due to insufficient sports achievement, athletes turn to other available sources that may substitute the hormone; for instance, turn to alcohol consumption. The second hypothesis relates to stress issue (stress-related drinking). As stated, sport tends to be a very stressful activity, whether physical or mental (Geva et. al., 2017). Fatigue trainings, self-denial, pressure, coach's, parent's and public's expectations increase the level of stress among the athletes. Accordingly, athletes consume alcohol in order to deal with

accumulated stress easier. Earlier hypothesis channeled sport into protective factors regarding alcohol consumption. The results of this study prove the opposite. Not only is sport not a protective factor, but it is rather a risk factor. Some countries have developed strategies (for instance, organized round tables, discussions among athletes and athlete staff etc.) to prevent and reduce alcohol consumption among athletes. We believe it is necessary to raise athletes' awareness regarding all alcohol-related problems that may influence their athletic achievement.

The study results have confirmed that non-athletes smoke more than the athletes. In this case, sport stands as a protective factor regarding the tobacco production consumption. Although history tells us there have been athletes who consumed tobacco products, awareness on negative influence of smoking on athlete's fitness proves the opposite. Smoking influences athlete's respiratory capacity. Thus, we may assume that the athletes relate easier to the bad influence smoking has on their performance rather than to the bad influence alcohol has on their performance. Therefore, we believe further research on the topic should be done within the Croatian context, as well as to establish strategies to reduce alcohol-related problems among the athletes.

CONCLUSION

To conclude, the study has indicated that there is statistically significant difference among the athletes and the non-athletes alcohol consumption. Accordingly, the non-athletes tend to smoke more than the athletes. Therefore, we may conclude that alcohol consumption 'trends' in Croatia do follow the same global 'trends' and, as such, require strategy development to prevent and reduce alcohol-related problems among athletes.

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