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**SPORT COMMUNITIES AND ORGANIZATIONS AS SOURCES OF ANTI-DOPING
EDUCATION AND PLACES OF INTEREST DEVELOPMENT OF STUDENTS
OF UNIVERSITY SCHOOL OF PHYSICAL EDUCATION IN POZNAŃ**

Key words: students, sport, doping, interests, leisure time.

ABSTRACT

The aim of the work was to establish the extent to which University School of Physical Education students participate in sport and recreational activities, get to know their leisure time interests and gain access to institutions enabling them to increase their knowledge about doping in sport. A questionnaire was distributed to 811 students. More than half of them practised sport regularly on a recreational basis, and one-third on a professional basis. The majority of the professional athletes were students of physical education. The subjects had much spare time and stated they were keen on sport, recreation and tourism. Apart from belonging to a sport club (14%), they did not have access to any other institutions enabling them to develop their interests or increase their knowledge about doping in sport. The sources of this knowledge are related to the environment (the media, acquaintances). It was observed that the role which both the educational and sport communities play in broadening knowledge about doping is insufficient. The preventive role of anti-doping education should contribute to the development of sport free from doping and restoration of its original meaning.

INTRODUCTION

The preparation process of highly-qualified athletes has become more and more complex in contemporary sport [27]. Sport – as an integral part of humanity – is subject to all determinants of modern civilization. In search of breaking records, which is believed to justify the means used to achieve it, dehumanization, commercialization, brutalization and extreme politicization of sport, pharmacological and biological doping and neglect of morality are all becoming common phenomena [18, 21, 22, 25].

Undoubtedly, professional sport has a great impact on athletes' state of health as well as development of their overall abilities, will and character. It has to be stressed that sport should not be treated or practised merely as a way of spending leisure time, but as an educational element of one's own life. This is because sport, among all its functions, triggers individual development (stimulation), prepares for life (adaptation) and removes the unfavourable conditions related to the environment (correction). Thus, sport becomes a crucial element of one's education. When the balance of the functions and aims of sport is not

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maintained, sport ceases to fulfill its favourable educational roles [23]. Regrettably, education through sport is very difficult to achieve nowadays. A possible solution to the aforementioned problems might be promotion of recreation, which is understood as 'sport for all' and returning to the very origins of sport, emphasizing the Olympic values based on the ideas of *fair play* and peace [31].

The aim of the work was to establish the extent to which examined students participated in sport and recreational activities, got to know their declared leisure time interests as well as gained access to institutions and sport clubs which enabled them to broaden their knowledge about doping in sport.

METHODS

A questionnaire was prepared and supplemented with some of the questions taken from the WHO Global Physical Activity Questionnaire (GPAQ) and the International Project Compass [5, 29]. The questionnaire was completed anonymously by the students during their classes.

The total number of subjects was 811 (46% males), aged 19-28. The number of students belonging to particular age groups was determined by the length and character of their studies – as many as 80% of the respondents were between 20 and 23 years of age. For the purposes of further analysis, the respondents were divided according to the following criteria (variables): gender, year of study and major. The gathered data included: students of the first (n=226), second (n=164), third (n=208) and fourth year (n=213), who were further divided into those studying physical education (PE), physiotherapy (P) and tourism and recreation (T&R).

The empirical data was processed with STATISTICA 6.0 and Excel 7.0. The applied methods used for calculation were based on descriptive statistics (non-semi-metrical Kruskal-Wallis and U Mann-Whitney tests). To mark the significance of differences between the variables, the following symbols have been used: $p \leq 0.01^{**}$; $p < 0.05^*$ – statistically significant; $p \geq 0.05^{NS}$ – statistically non-significant.

RESULTS

More than half of the respondents practised sport regularly on a recreational basis (58%). Active athletes made up 36% of the subjects, and 6% took up sport activities occasionally (Fig. 1).

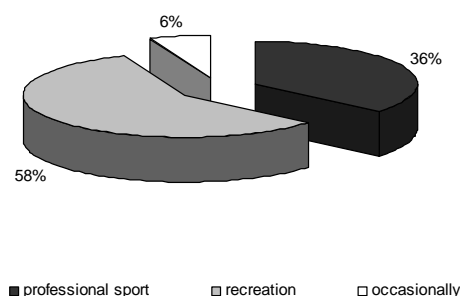


Figure 1. Participation in sport and recreational activities (n=811)

The major variable was statistically significant for determining the degree to which the examined took part in sport and recreational activities ($H=108.16$; $p \leq 0.01^{**}$). Thus, it can be seen that a high percentage of the PE students practise professional sport (53%), and this trend is not present in the remaining major variables ($p \leq 0.01^{**}$). The great majority of the T&R (Tourism and Recreation Studies) students took up sport on a recreational basis (77%), a tendency which is clearly visible when compared to the students of PE ($p \leq 0.01^{**}$), (Fig. 2). The differences in practising sport on an occasional basis between the groups were statistically non-significant ($p \geq 0.05^{NS}$) and reached only marginal values. Generally, the degree to which the students of T&R and PE practice sport and recreational activities is similar, as no statistically significant differences were found between the two groups ($Z=1.85$; $p \geq 0.05^{NS}$), (Fig. 2).

The above observation is substantiated by the analysis of the number of students actively practising sport on a professional basis, both now and in the past. The majority of subjects practising professional sport at present are the students of PE, which confirms the statistical significance in the examined groups ($H=131.02$; $p \leq 0.01^{**}$), (Tab. 1). The small percentage of students who do not practise professional sport in the same group (PE) differentiates the compared groups again

($p \leq 0.01^{**}$), since, as it was noted earlier, the differences between the students-athletes of T&R and PE are statistically irrelevant ($Z=1.26$; $p \geq 0.05^{NS}$). The number of people who did professional sport in the past does not seem to depend on their major or gender – the differences are statistically insignificant ($p \geq 0.05^{NS}$). The number of men practising professional sport is twice as high as the number of women ($t = -6.41$; $p \leq 0.01^{**}$), (Tab. 1).

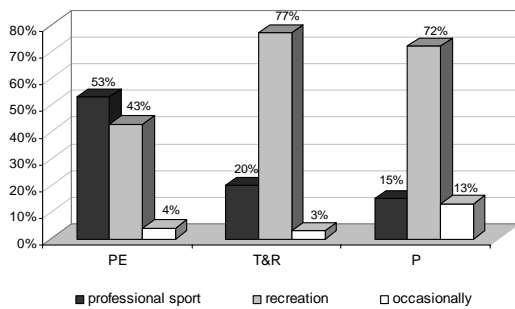


Figure 2. Participation in sport and recreational activities and the major variable (n=811)

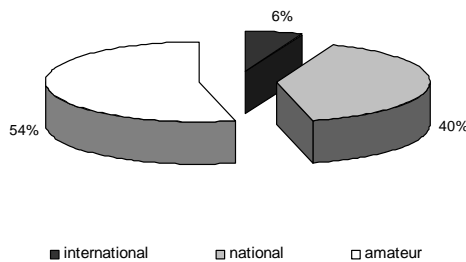


Figure 3. Declared sport level (n=811)

Most of the students practise sport for pleasure and amateurishly (54%) or professionally on the national level (40%). The remaining 6% do sport on international level (Fig. 3).

It has been observed that the respondents have much spare time – almost 60% of them has three hours a day and more to spend on leisure time activities, regardless of the group or major variable (Fig. 4).

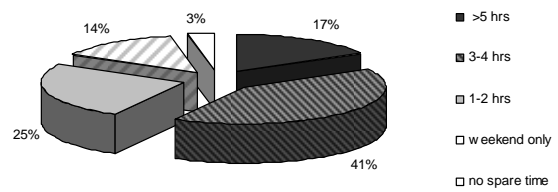


Figure 4. The amount of spare time (n=811)

The difference in the amount of spare time of students of PE, T&R and P is not statistically significant and is not determined by their major ($H=2.38$; $p \geq 0.05^{NS}$), but by their gender ($Z=-3.88$; $p \leq 0.01^{**}$). Men appear to have more spare time than women ($t=-4.41$; $p \leq 0.01^{**}$), (Tab. 2).

Examining leisure time activities in relationship with the character of university studies allowed us to confirm the assumption that the most common were sport interests (73%) and recreational sport and tourism (30%). Cultural interests (film, theatre, music, dancing) were declared by a significant number of the respondents (56%), followed by artistic interests (23%) and biology as well as humanistic studies (10%). The remaining types of interests failed to pass the threshold of 10% (Tab. 3).

Table 1. Professional sport status and the major/gender variable (in %)

Sport status	Total n=811	PE n=418	T&R n=203	P n=190	Gender		Difference
					F n=438	M n=373	
Still practicing	31	46	13	16	21	42	21 ^{**}
Used to practise	41	41	40	43	43	39	5
Never practised	28	13	47	41	36	19	17 ^{**}
Test H: $H=131.02^{**}$					Test U: $Z=-6.41^{**}$		

$p \leq 0.01^{**}$, $p < 0.05^*$, $p \geq 0.05^{NS}$

Table 2. The amount of spare time and the major/gender variable (in %)

Daily spare time	Total n=811	PE n=418	T&R n=203	P n=190	F n=438	M n=373	Difference
5 hrs and more	17	16	18	19	12	23	11**
3-4 hrs	41	42	42	38	41	41	0
1-2 hrs	25	22	29	29	29	20	9**
Weekends only	14	16	9	13	15	12	3
No spare time	3	5	2	1	3	4	1
				Test H: H=2.38 ^{NS}	Test U: Z=-3.88**		

p≤0.01**, p<0.05*, p≥0.05^{NS}

Table 3. Interests in general and in relationship to the gender variable (in %)

Interests [#]	Total n=811	F n=438	M n=373	Difference
Sport	73	69	78	9**
Tourism and recreation	30	35	24	11**
Culture	56	56	57	1
Art	23	34	15	19**
Foreign languages	5	6	3	3
Biology and humanistic studies	10	11	9	2
Science	0	0	1	1
ICT and the Internet	5	2	6	4**
Medicine	4	4	3	1
Sociology	1	2	0	2
Other (life style, fashion, cars)	6	5	8	3
No answer	8	8	9	1
				Test U: Z=-4.66**
No interests	7	7	6	1
				Test t: t=-0.29 ^{NS}

p≤0.01**, p<0.05*, p≥0.05^{NS}

the percentage values do not add up because of the multiple choice possibility

The gender variable clearly determines the differences in interests (Z=-4.66; p≤0.01**). Whereas the structure of the most popular male and female interests is similar, there are some discrepancies between the compared values: sport interests (t=-2.67; p≤0.01** in favour of men), tourism and recreation (t=3.41; p≤0.01** in favour of women). However, the examined female students appear to be more interested in art (t=6.05; p≤0.01**), whereas the men are keen on ICT (t=-2.84; p≤0.01**). There was no relationship between the lack of any interests and the gender variable (t=-0.29; p≥0.05^{NS}), (Tab. 3).

Despite declaring particular interests, the participants do not always pursue them. This is determined by such factors as accessibility, knowledge, financial status, environment and available facilities. The above is especially true in the case of sport and recreational interests. As many as 70% of the respondents indicate lack of access to institutions and clubs enabling them to develop their interests and knowledge about doping in sport (Tab. 4). A further analysis showed that this percentage was lower in the groups of PE and T&R students, but higher among the students of physiotherapy (P) (84%), which may be related to the low participation of this group in sport and

recreational activities (Fig. 2). According to the subjects, sport clubs are the easiest to gain access to (13%), followed by recreational centres (5%), university sport sections (4%) and non-associate clubs and organizations (4%). The accessibility of the remaining institutions does not pass the threshold of 1% (Tab. 4). The students of T&R declared that they had equal access to the aforementioned institutions. The gender variable was found to have an impact on the accessibility to the sources of knowledge on doping in sport ($p \leq 0.01^{**}$).

interests and gain knowledge about illegal drugs was a sport club. The number of the respondents belonging to the remaining institutions does not exceed 2%. Apart from the PE students, among whom membership in sports clubs is highly significant ($H=13.03$; $p \leq 0.01^{**}$), such variables as gender and major do not influence the above trends ($p \geq 0.05^{NS}$).

The participation of sport institutions in promoting knowledge about doping in sport is lower than expected (only 8%). Generally, the declared sources of the knowledge are

Table 4. Accessibility to institutions enabling development of students' interests and increasing knowledge about doping (%)

Accessibility #	Total n=811	PE n=418	T&R n=203	P n=190	F n=438	M n=373	Difference
Sport clubs	13	18	7	8	11	15	4
Sport Associations, TKKF*	1	1	1	0	1	1	0
Recreation centres	5	3	11	2	4	6	2
University sport sections	4	4	5	4	4	5	1
Local sport clubs, MOK, MDK*	1	2	2	1	3	1	2
School sport clubs MKS, SKS, UKS*	0	1	1	1	1	1	0
Non-associate clubs and organizations	4	3	7	3	5	3	2
Sport Centres MOS, POSiR, MOSiR*	1	1	3	1	1	2	1
Doctor's surgeries, GPs	0	1	1	1	0	1	1
No answer	77	74	73	86	80	73	7
		Test H: $H=23.40^{**}$			Test U: $Z=1.11^{NS}$		
No access	70	66	67	84	74	66	8
		Test H: $H=21.32^{**}$			Test t: $t=2.65^{**}$		

$p \leq 0.01^{**}$, $p < 0.05^*$, $p \geq 0.05^{NS}$

the percentage values do not add up because of the multiple choice possibility

TKKF – Physical Culture Promotion Society; MOK, MDK – City Culture Centre; MKS, SKS – School Sport Club; UKS – University Sport Club; MOS – City Sport Centre; POSiR – Poznań Sport and Recreation Centre; MOSiR – City Sport and Recreation Centre

Belonging to particular institutions and clubs is a reflection of students' interests and their actual need to be physically active, which in turns satisfies many other needs (including gaining knowledge about harmfulness of drugs in sport). The majority of the participants (79%) state that they do not belong to such clubs or institutions (Tab. 5). This is an alarming observation, especially in the light of further analysis considering the major variable (T&R 88%). Fourteen per cent of the examined said the only place where they could cultivate their sport

environmental (64% – the media, acquaintances) and educational (21%) (Fig. 5).

The dynamics of the changes of knowledge sources about doping in sport throughout the studying period is shown in Figure 6. The environmental knowledge sources (the media, acquaintances) are less significant in comparison with educational institutions (school or university). What is worrying is the further decrease of the marginal significance of sport clubs as the sources of knowledge about doping.

Table 5. Belonging to clubs and institutions enabling development of sport interests and knowledge about doping (%)

Membership #	Total n=811	PE n=418	T&R n=203	P n=190	F n=438	M n=373	Difference
Sport clubs	14	22	6	10	13	17	4
Sport Associations, TKKF*	2	3	1	3	2	3	1
Recreation centres	1	1	2	0	1	2	1
Culture centres (public libraries)	0	0	0	0	0	0	0
Local sport clubs MOK, MDK*	1	0	1	2	1	0	1
School sport clubs MKS, SKS, UKS*	1	0	1	1	1	0	1
National Team	1	1	1	0	1	0	1
Referees' Associations	1	1	1	0	1	1	0
Scientific circles	0	0	0	1	0	0	0
No answer	82	75	90	87	83	80	3
		Test H: H=13.03**			Test U: Z=0.61 ^{NS}		
No access	79	71	88	87	81	77	4
		Test H: H=32.35**			Test t: t=1.61 ^{NS}		

p≤0.01**; p<0.05*, p≥0.05^{NS}

the percentage values do not add up because of the multiple choice possibility

TKKF – Physical Culture Promotion Society; MOK, MDK – City Culture Centre; MKS, SKS – School Sport Club; UKS – University Sport Club

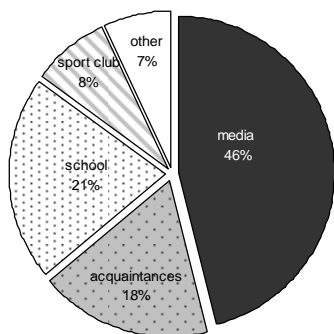


Figure 5. Declared sources of knowledge about doping in sport

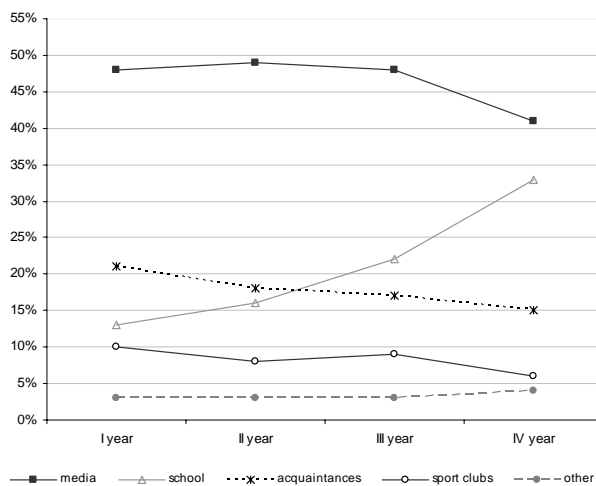


Figure 6. The significance of sources of knowledge about doping throughout the period of study

DISCUSSION

The data presented above shows that more than half of the respondents practise sport on a recreational basis regularly and one-third on a professional basis. The great majority of those practising professional sport are the students of PE. Six percent of the examined students are involved

in sport on an international level. The participants have much spare time – more than one half of them have three hours or more to spend on leisure time activities. Because of the character of the studies undertaken, the most common interests are those related to sport, recreation and tourism. Only 14% state that sport clubs are the only places where they

can cultivate their interests; the remaining students say they have limited access to such places or they have no access at all. This corresponds with the studies of Zarotis et al. [30], according to whom the increase in the amount of spare time among young people (mainly athletes) is connected with the necessity to meet their individual demands and upgrade free time sport activities.

As it was found in a number of similar studies [1, 11, 24], the sources of knowledge about doping are related to the environment (media, acquaintances), together with regrettably little influence of educational and sport institutions. The importance of the 'environmental' sources of the knowledge has gradually decreased throughout the period of study in favour of schools and universities. This trend is indeed desirable – even though research and anti-doping tests play a major role in fighting doping and deterrence from taking illegal drugs, it is anti-doping education which can guarantee long-term positive effects. Thanks to its preventive roles, education can contribute to the development of a 'culture' of sport free from doping, restoring its original meaning, according to the principle that sport is created by people for people, fun, for character, for health, for fair play, for excellence, for society, for peace [28]. Students and athletes alike, also believe that the aim of anti-doping programs (apart from the need to increase the range of dope-tests, toughening punishments including lifetime disqualifications, imposing restrictions on coaches, dealers and sport clubs) should embrace the number and range of educational campaigns in the media, at schools, universities and among coaches, as well as promote 'clean' sport and a healthy lifestyle [4, 8, 17, 19]. The fact that as many as 79% of the examined students state that they do not have access to institutions enabling them to develop their knowledge about doping is disconcerting. According to the survey conducted by the British Olympic Association [4] during the Olympics in Sydney, every one in four of the examined athletes declared that they had little accessibility to the information about the permitted and forbidden substances as well as procedures applied during drug tests.

It happens too often while tackling the issue of doping, that opinions of athletes are not taken into consideration, which makes any preventive actions ineffective [3]. It turns out that meeting the requirements of the environment (family, team

mates, coaches, spectators, sport federations, sponsors and the media) and being under pressure is very difficult, may cause many potential conflicts and moral dilemmas, and often results in abusing the forbidden substances in sport [6]. Researchers claim that an effective anti-doping policy, despite being as complex as contemporary sport, should focus on athletes and their health, excluding the aforementioned environments [8, 26]. It is also athletes themselves who address the problem – just to mention the renowned sportsman (four-time Olympic champion) and activist fighting with doping in sport – Johan Olav Koss. He turns to his fellow sportspeople in the preface to the book “Dying to win” published by the European Council with the following words: *“Athletes! We have the power to effect change: to clean up our own sport and complete each race, each competition, with excellence, dignity and fair play. In every competition, athletes are expected to win, but the cost of that victory can be too high. Athletes should not be dying to win”* [10].

It cannot be taken for granted though, that knowledge about doping and being aware of negative consequences of taking illegal drugs will influence a definite decision to stop using them by an athlete. However, the last word should belong to athletes themselves – those of them who oppose to cheating in sport will do it intentionally and their attitude will be based on a solid system of values which should be relied on every day, also when being physically active. These universal and self-evident, as it might seem, social norms ought to be expressed by effective preventive anti-doping campaigns.

Research methods should be unified and government institutions should be supported to come up with an effective strategy aiming at promoting health education and eliminating indifferent or positive attitudes to doping among adolescents – especially as regards professional sport [16]. Researchers dealing with fighting doping are convinced that anti-doping education cannot be temporary, but rather long-term and consistent. They claim that a well-prepared and executed educational programme may be more effective than the most severe of sanctions and punishments [15, 20].

Doping has been a major problem in sport for many years: a problem of sociology, medicine and law [7, 12, 13, 14]. This negative phenomenon, as serious as narcotics or HIV, can only be

fought off by increasing awareness and conducting successful campaigns on a large scale in all communities.

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