



Attitudes Towards Doping among Sport Sciences Students

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Abstract

Doping is a concern not only in sport but also in society, given that it is a pressing issue that must be dealt with in the education of future physical activity and sport professionals. The objective of this study was to ascertain the attitudes towards doping of students in the Bachelor's in Physical Activity and Sport Sciences at the University of Valencia. A questionnaire designed specifically for this study whose content was based on similar questionnaires was administered to 347 students of both sexes. The main results include that 94.25% of students are against the possible legalisation of doping, while 5.75% are in favour. When asked in what cases would they take performance-enhancing drugs as athletes, the three main reasons were: 1) to earn large amounts of money; b) to increase their athletic performance and win an Olympic gold medal; and c) to be one of the most successful athletes in history and become world-famous. Each of them was chosen by around one fifth of the sample. Differences were also found in the sex variable. In the majority of situations posited, twice as many men would take performance-enhancing drugs as women. Therefore, and although most of the students are against the legalisation of doping, some of them would take performance-enhancing drugs if they were high-performance athletes.

Keywords: doping, attitudes, health, students, university

Introduction

Doping is a punishable behaviour in sport. For this reason, it is assumed that sport professionals will always take a stand against it. However, occasionally not only do coaches not help to prevent doping (Laure et al., 2001), they may even indirectly promote positive attitudes towards it (Hodge et al., 2013). These attitudes can also be found among other groups as well, such as monitors and sports physicians (Tanner et al., 1995). In the field of education, faculty have to deal with the prevention of doping in adolescence, a population with extremely disturbing figures in the specific case of recreational doping with anabolic steroids (Rachon et al., 2006). Similarly, Strelan and Boeckmann (2006) found that education in moral values and health is a more effective deterrent in the struggle against doping than penalties in competitions. Therefore, practitioners of physical-sport activities should always be educated in a context in which health and ethics are the prime values, which is why it is essential to study educational agents and the role they play in the conception and prevention of doping. In this sense, attitudes towards doping and the training of physical activity professionals are important.

Attitudes towards doping have also been examined by research, with different focal points. Two of them are the attitude towards the potential legalisation of doping in sport and the reasons that would lead an athlete to take performance-enhancing drugs. Studies on attitudes towards a potential legalisation of doping have focused on ascertaining the opinions of different groups, such as the general population (Stamm et al., 2008), athletes (Stamm et al., 2008; Wanjek et al., 2007), coaches (Engelberg & Moston, 2015; Fung, 2006; Mandic et al., 2013) and university students (Awaisu et al., 2015; Saito et al., 2013; Vangrunderbeek & Tolleneer, 2010). The results concur, albeit in different proportions, in showing that the majority disagree with the legalisation of doping in sport. In terms of the reasons that would lead an athlete to take performance-enhancing drugs, the most important one is winning competitions and improving athletic performance (Connor et al., 2013; Mroczkowska, 2011; Scarpino et al., 1990; Striegel et al., 2002). Other studies state that doping behaviour can also influence the perception that the other athletes have of performance-enhancing drugs (Dunn et al., 2012; Morente-Sánchez & Zabala, 2013); a greater ego-, rather than task-orientation towards competing (Sas-Nowosielski & Swiatkowska, 2008), the failure to criticise not following the rules (Whitaker et al., 2012) and being in favour of legalising doping (Kindlundh et al., 1998; Petróczy, 2007).

Thus, two basic research questions can be defined and which have served as referents in this study: What opinion does a particular group within the sphere of sport have towards the potential legalisation of doping? And in what cases would they themselves take performance-enhancing drugs? Given these questions, the purpose of this study was to ascertain the attitudes of future professionals currently in training towards doping, and more specifically students pursuing the Bachelor's in Physical Activity and Sport Sciences (PASS). Therefore, the goal is to ascertain the opinions of this group on a hypothetical legalisation of doping in high-performance sport and the reasons that would lead these students to take performance-enhancing drugs, as well as the associated variables.

Methodology

The study performed is descriptive and quantitative. A questionnaire on attitudes towards doping was administered to a sample of PASS students at the University of Valencia (UV).

Sample

The data were collected in the 2014-15 academic year, when a total of 723 students, 595 males and 128 females, were enrolled in the PASS programme taught in the Faculty of Physical Activity and Sport Sciences at the UV. The final sample of this study was comprised of 347 students, 295 males and 52 females, which corresponds to a maximum margin of error of 3.8%. The mean age of the sample was 21.64 ($SD \pm 4.81$).

Instrument and data-collection procedure

To collect the data, a self-administered, structured written questionnaire developed for this purpose was administered. Content validity was used to establish the internal validity of the questionnaire. This type of validity does not use a statistical criterion, but one based on justifying the content of the questionnaire to ensure that it is adapted to the reality that it seeks to study. Agreement was reached on three aspects: a) the internal logic of the questionnaire through its organisation into the different dimensions studied; b) the conceptual representativeness of these dimensions, taking studies on opinions and attitudes towards doping as the referent in order to produce it (Connor et al., 2013; Mroczkowska, 2011; Whitaker et al., 2012); and c) the subsequent revision of the questionnaire by an expert panel with the participation

of university professors not involved in the project, who approved the final version of the questionnaire.

The data were collected by administering the questionnaire on different days in April 2015 in the theoretical classes held in the Faculty of Physical Activity and Sport at the UV, with the prior authorisation of the centre's administration and the faculty teaching the classes in which it was administered. One of the researchers was present during the data-collection process and when the questionnaires were handed out, completed and returned. Instructions on how to complete the questionnaire properly were given before it was handed out. The students were informed that the data they provided would be used for academic purposes. Filling out the questionnaire was totally voluntary. The participants took some 10 minutes to complete it. Other essential ethical factors related to data collection were also taken into account to guarantee the total anonymity and privacy of the data of the respondents.

Data analysis

Two levels of analysis were conducted in this study. The first one consisted of calculating the statistical indexes, with the goal of describing the variables obtained through distributions of frequencies, percentages, means and standard deviations. The second level focused on analysing the relations among the different variables studied and between them and the sociodemographic variables. The chi-squared statistic was used with the Monte Carlo method to find the degree of significance among the categorical variables. In cases in which study variables and general variables were combined with more than two categories, the contingency coefficient was calculated to analyse and interpret independence or dependence among the variables. Contingency tables were used to describe the relation among categorical variables.

Results

The results are grouped into two subsections: opinion on the hypothetical legalisation of doping in high-performance sport and reasons that would lead the respondents to take performance-enhancing drugs.

Opinion on the hypothetical legalisation of doping in high-performance sport

Of the total of 347 students who responded to the questionnaire, 327 (94.24%) were against the legalisation of doping in high-performance sport, while 20 (5.76%) were in favour. None of the 52 females surveyed was in favour of legalising doping. Although only men responded affirmatively to the possibility of legalising it, there was no significant association between the sex variable and the opinion on legalising doping in high-performance sport.

Reasons that would lead them to take performance-enhancing drugs

The students were presented with five cases in which they might take performance-enhancing drugs depending on their objectives. Table 1 shows the frequencies and percentages of their responses.

With regard to the relationship between the reasons that would lead them to take performance-enhancing drugs and the sex of the respondent, significant differences were only found in the option of earning large amounts of money, in which males had a higher representation in this category than females ($\chi^2_1 = 10.688$; $p < .05$). Eighty men (27.12%) stated that they would take performance-enhancing drugs to achieve this goal, while only 3 females would (5.76%). In the remaining reasons, the tendency remains the same: 64 males (21.069%) and 9 females (17.30%) would take performance-enhancing drugs to improve performance and win a gold medal; 60 males (20.33%) and 5 females (9.61%) would do so to become one of the most successful athletes in history and become world-famous; 15 males (5.08%) and 1 female (1.92%) would do so to be admired by their social milieu (friends, peers, family, partner); and 34 males (11.52%) and 2 females (3.84%) would do so to become much more physically attractive. Therefore, the option of increasing athletic performance and winning an Olympic gold is worth noting in that it shows no difference between the sexes, as they both responded in similar percentages.

Table 1

Frequencies and percentages of the reasons for taking performance-enhancing drugs

Reason	Yes	No
To enhance my athletic performance and win an Olympic gold	72 (20.75%)	275 (79.25%)
To become one of the most successful athletes in history and be world-famous	64 (18.44%)	283 (81.56%)
To be admired by my social milieu (friends, peers, family, partner) on account of my success	14 (4.03%)	333 (95.97%)
To earn large amounts of money	82 (23.63%)	265 (76.37%)
To be much more physically attractive	35 (10.08%)	312 (89.92%)

Table 2*Relationship between reasons for taking performance-enhancing drugs and opinion on legalising doping in high-performance sports*

Reasons	Legalisation of doping in high-performance sports			<i>p</i>
	In favour	Against	Total	
To enhance my athletic performance and win an Olympic gold	13 (65.00%)	59 (18.04%)	72	<.001*
To become one of the most successful athletes in history and be world-famous	11 (55.00%)	53 (16.21%)	64	<.001*
To be admired by my social milieu (friends, peers, family, partner) on account of my success	2 (10.00%)	12 (3.67%)	14	.16
To earn large amounts of money	13 (65.00%)	69 (21.10%)	82	<.001*
To be much more physically attractive	7 (35.00%)	28 (8.56%)	35	<.001*

* Category in which there is a significant difference.

There are also significant associations between some of the different reasons suggested for taking performance-enhancing drugs and the variable related to the possibility of legalising doping (Table 2). A higher proportion of students is in favour of doping to enhance athletic performance and win an Olympic gold ($\chi^2_1 = 25.037$; $p < .05$), to be one of the most successful athletes in history ($\chi^2_1 = 18.668$; $p < .005$), to earn large amounts of money ($\chi^2_1 = 20.023$; $p < .05$) and to be much more physically attractive ($\chi^2_1 = 14.457$; $p < .05$), compared to those who are against this attitude. Sixty-five percent of the respondents who stated that they were in favour of legalising doping also said that they would take performance-enhancing drugs to enhance their athletic performance and to win a gold medal, while among the respondents who stated that they were against legalising doping, only 18.04% would take performance-enhancing drugs to achieve better athletic performance and to win an Olympic gold. The only reason in which there is no relationship of this kind is when the reason for taking these drugs is to be admired for their success by their social milieu (friends, peers, family, partner).

Discussion

In this section, the results are analysed to answer the basic questions posed in this study: What do PASS students think about the potential legalisation of doping? And in what cases would they themselves take performance-enhancing drugs?

What do PASS students think about the potential legalisation of doping?

Almost all the PASS students, 94.24%, opposed the potential legalisation of doping, and only 5.76% were in favour of this possibility. These percentages contrast with those found in the study by Vangrunderbeek and Tolleneer (2010) with students taking Bachelor's degrees related to physical activity and human movement at the University of Ghent (Belgium). That study found

that from 1998 to 2006, students' tolerance of the use of performance-enhancing drugs had risen. While in 1998, 10% of the respondents were "tolerant" of doping, this figure had risen to 20% in 2006. Similarly, the number of participants who were totally against doping fell from 73% in 1998 to 43% in 2006. The results of this study are more in line with those found in research with university students taking Pharmacy degrees. The study by de Saito et al. (2013) found that 90% of the respondents were against violations of doping laws, while in the study by Awaisu et al. (2015), also conducted with university students taking Pharmacy degrees, 89% stated that they were against the use of doping substances in sport. In relation to these results, the PASS students at the UV surveyed in this study seem to be more against the legalisation of doping than the students in the same courses in other faculties, but they show a similar rate of rejection of doping as university students taking Pharmacy degrees at other universities.

On the other hand, the study by Stamm et al. (2008) analysed the attitude of both the Swiss population and elite athletes towards the legalisation of doping. Eighty-six percent of the general Swiss population surveyed took a stand entirely in favour of banning doping, as did 96% of the elite Swiss athletes surveyed. In both cases, the explanation is that they considered doping to be contrary to the principle of fair play. In another study by Wanjek et al. (2007) with working athletes, a significant association was found between their attitudes towards doping and taking performance-enhancing drugs. Those who considered doping negative for health and sports ethics presented lower rates of doping behaviours. Apparently, the PASS students at the UV surveyed are as opposed to the legalisation of doping as the elite athletes in the aforementioned articles.

With regard to the studies conducted on coaches' attitude towards doping, in the study conducted by Engelberg and Moston (2015), the majority were against the presence of doping in sport and supported harsh penalties for coaches responsible for helping their athletes to take performance-enhancing drugs. Similarly, Fung

(2006) found that 19% of the coaches surveyed stated that athletes can use performance-enhancing drugs if it does not harm their health. The study by Mandic et al. (2013) found that 71% of the coaches surveyed stated that they would not suggest that their athletes take performance-enhancing drugs, and 10% of the coaches said that they would suggest that their athletes did so as long as they were sure that it would not affect their health. Therefore, the PASS students surveyed at the UV rejected doping more than the coaches in these studies.

In what cases would they take performance-enhancing drugs?

There are striking figures on the participants' willingness to take performance-enhancing drugs. At least 1 out of 5 respondents would take these drugs to win an Olympic gold or earn large amounts of money, and 1 in 6 would take these drugs to become world-famous. These three variables are related, since they summarise what success means today at the highest levels of elite sports. It is worth noting that the potentially harmful health-related effects of this hypothetical behaviour by the respondents was not explicitly addressed in the questionnaire, as it was in Connor et al. (2013) and did Mroczkowska (2011). Nor was the alteration in athletic equality stemming from athletes' taking performance-enhancing drugs explicitly stated, as it was in Connor et al. (2013), who described different scenarios with illegal or legal (ergogenic) drugs. However, the PASS students are aware of doping, and they have at least an approximate notion of the effects it could have on health, and that its presence alters athletic competitions. Therefore, we assume that there is a considerable percentage of respondents who would take performance-enhancing drugs despite knowing that they are harmful and that they go against the rules of sports. This could be a major cause for concern if we bear in mind that these students will be working as teachers, coaches, physical trainers and other professionals within the field of physical activity in the future. How is a teacher going to teach their student about fair play and sports ethics if they themselves would take performance-enhancing drugs if they could? Analysing the results of similar studies, in Scarpino et al. (1990) the main reasons given by the athletes polled for taking performance-enhancing drugs were to win a competition (63%), improve their training performance (9%), reduce pain (6%), at the request of their coaches (6%) and other unspecified reasons (16%). The study by Striegel et al. (2002) finds that the most frequent reasons cited by the athletes to justify doping is improvement of athletic performance (86%), economic profit (74%), improvement of self-confidence (30%) and social recognition (24%).

Dunn et al. (2012), in turn, cited thinking that other competitors are taking performance-enhancing drugs as an important reason to justify taking them. Therefore, the respondents who thought that many of their competitors were taking performance-enhancing drugs were more likely to have taken such drugs recently (28%) than those who believed that fewer competitors were taking them (11%). This concept is the "false consensus effect", which suggests that athletes with a history of taking performance-enhancing drugs overestimate the presence of these drugs among their competitors (Morente-Sánchez & Zabala, 2013). In this regard, the PASS students seem to justify doping through reasons related to athletic performance and non-sport factors, such as money and fame, similar to some of the aforementioned studies. Nonetheless, these results differ from the others in that the first reason for justifying doping is not improving athletic performance, but rather financial gain.

The data show that females would take performance-enhancing drugs less than males. We do not know whether this is because they are afraid of harming their health, sports ethics or other reasons. The percentage of males who would take performance-enhancing drugs is higher than the percentage of females in all the reasons suggested in our study, and a significant number of these males justified taking these drugs to earn large amounts of money. The sole reason in which the percentages between male and female respondents are similar is to enhance athletic performance and win a gold medal. In this case, the proportion changes notably, as females respond almost identically as males. In the study conducted by Sas-Nowosielski and Swiatkowska (2008), males were more ego-oriented when competing, which was found to be a significant factor in having a higher likelihood of taking performance-enhancing drugs. Conversely, females' motivation was more task-oriented, a factor which has been associated with a stronger rejection of doping, although no differences were found in the attitude towards doping in relation to motivation among females. The male PASS students at the UV showed a greater willingness to take performance-enhancing drugs than their female classmates, as in the aforementioned study.

In the majority of cases, there is consistency in the relationship between taking performance-enhancing drugs and being in favour of legalising doping. The exceptions are the reasons for which fewer respondents would take these drugs, namely, to be admired by their social milieu (friends, peers, family, partner) on account of their success, and to become much more physically attractive. In the remaining situations posed, most of the respondents who would be in favour of allowing doping would do it, similar to the result obtained by Whitaker

et al. (2012), in which athletes who did not disapprove of breaking the rules were more likely to take performance-enhancing drugs. The study by Petróczi (2007) found a significant relationship between being in favour of legalising doping and favourable attitudes towards it. In the study by Kindlundh et al. (1998), males presented a significant relationship between taking performance-enhancing drugs and being in favour of doing so. Therefore, there seems to be a relationship between being in favour of legalising doping and taking performance-enhancing drugs in the PASS students at the UV, results which are very similar to those found in the aforementioned studies.

Conclusions

The following conclusions can be drawn from this study:

a) Most of the PASS students at the UV are against legalising doping (94.24%). More specifically, females are more opposed, as none of the 52 female respondents was in favour of legalising it.

b) Although most of the students would not take performance-enhancing drugs (three quarters of them in all the situations presented), the main reasons that would lead them to do so are: to earn large amounts of money (cited by 23.63%), to enhance their athletic performance and win an Olympic gold (20.75%) and to become one of the most successful athletes in history and be world-famous (18.44%).

c) Taking performance-enhancing drugs to earn large amounts of money is influenced by two different variables:

- Males would take more performance-enhancing drugs than females when the goal is to earn large amounts of money (27.12% of males versus 5.76% of females).

- The students who are in favour of legalising doping would take more performance-enhancing drugs to earn large amounts of money (65%) than those who are against legalising it (21.2%).

d) The students who are in favour of legalising doping would take more performance-enhancing drugs to enhance their athletic performance and win Olympic gold (65%) than those who are against legalising it (18.04%).

e) Taking performance-enhancing drugs to become one of the most successful athletes in history and to be world-famous is associated with being in favour of or against doping, so that students who are in favour of legalising doping would take more performance-enhancing drugs to become one of the most successful athletes in history and to be world-famous (55%) than those who are against legalising doping (16.21%).

The main limitation of this study is that it analysed data from a single school. One future prospect would be to expand the study to other schools in order to compare and check whether there are significant differences with the results of this study. It would also be interesting to conduct similar studies with students from other university degree programmes such as Physiotherapy, Teaching Physical Education, post-graduate programmes related to physical activity and sport sciences, and students in vocational training programmes related to physical-sport activities, which would also shed further light on attitudes towards doping in future physical activity and sport professionals.

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