

DOPING

Motives for Illicit Use of Doping Substances Among Athletes Calling a National Antidoping Phone-Help Service: An Exploratory Study

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This study aimed to construct a hierarchy of motives linked to doping behaviors. Between 2000 and 2005, calls to a national antidoping phone-help service by 115 cyclists, 203 bodybuilders, and 40 footballers were analyzed. The results showed that the main motives were preserving health for cyclists, increasing muscular strength for bodybuilders, and personal recreation for footballers. However, in contrast to the literature, group influence was low and health preoccupations were high for cyclists; the influence of body image was relatively low for bodybuilders; and footballers cited muscular strength enhancement as a motive. The study's limitations are noted. The prevention campaigns therefore need to be specific.

Keywords doping, antidoping phone-help service, behavior, motives, recreational drugs, performance enhancement drugs, enhanced performance, enhanced endurance

INTRODUCTION

Athletes take illicit substances for many reasons, but the weight of each motive in the decision to dope remains relatively unknown. Most of the data to rank doping motives have been gathered from epidemiological (e.g., Beck, Legleye, & Peretti-Watel, 2001; Laure, 2000; Peretti-Watel, Beck, & Legleye, 2002) and psychological and sociological studies (e.g., Lorente, Peretti-Watel, & Grelot, 2002; Waddington, Malcolm, Roderick, & Naik, 2005) with the use of questionnaires. However, questionnaires are known to systematically underestimate the reality (regarding the nature and relative proportion of motives) of addictive behaviors because of common social representations of doping (Simon, Striegel, Aust, Dietz, & Ulrich, 2006). Qualitative studies based on retrospective inter-

views or information from champions' confessions tend to emphasize extrinsic reasons for doping and thereby limit personal responsibility and protect self-esteem. Moreover, the "true story" may be modified to limit the risks of sanction (e.g., Brissonneau & Bui-Xuan, 2006; Monaghan, 2002). Whatever the protocol design, researchers are confronted with the "omertà" approach to doping in sport, which means never admitting to any substance abuse. Furthermore, the motives for using prohibited substances seem to concern a minority of athletes: generally those of a high level and those who have tested positive in doping controls. The motives offered by these athletes, such as enhancing performance, increasing financial gain, and making a sporting name for one-self, are associated with common social representations.

The literature has detailed these motives in three sports widely acknowledged to be plagued by substance misuse. For cyclists, the major motive for doping is performance enhancement. Sociological studies have documented that this sport has been most damaged by doping (Seznec, 2002), with high-profile scandals and insider revelations massively reported by the press. Cyclists are quite knowledgeable about doping substances and consume them without medical advice in order to increase performance. Both amateurs and professionals are well informed about their effects, advantages, and administration procedures (Trabal & Duret, 2003). According to the literature, the second motive for doping is the team dynamic. Cyclists are team members and must be loyal to their "family" (Lê-Germain & Leca, 2005; Trabal & Duret, 2003). Doping is the team secret: It builds cohesion among teammates and confers the feeling of membership in the cycling community. Adherence to the cycling way of life involves rituals of prohibited practice and legitimizes implicit transgression of the law. Doping is a part of this subculture.

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The motives for doping among bodybuilders are associated with disturbed body image. Striegel et al., (2006) analyzed 621 questionnaires completed by members of 113 German fitness centers and found that 13.5% were using prohibited substances; the main reason given was the desire to create an ideal body (81%). Enhanced performance and endurance were not cited as motives. The need to make a perceived body image match an ideal image is a major motive for anabolic steroid use (Monaghan, 2002; Schwerin & Corcoran, 1996; Wright, Grogan, & Hunter, 2000). These bodybuilders try to enhance perceived physical strength, physical attractiveness, and global self-esteem (McDuff & Baron, 2005; Olrich & Ewing, 1999). They believe that by using steroids they can also decrease physical anxiety (Hurst, Hale, Smith, & Collins, 2000; Schwerin, Corcoran, Fisher, Patterson, & Shanks, 1996). Obsessed by the need to obtain an ideal body, they measure each part of the body and try to rebuild it. The body as an integral whole is replaced by several specific composites (Le Breton, 1999). The advertising and entertainment images on television or in magazines reinforce the motivation to improve appearance, and each individual feels great pressure to use any means to reach this ideal. The second motive for doping is enhanced muscular volume (Wright et al., 2000). Striegel et al. (2006) reported that 71% gave this motive. The bodybuilder wants to be stronger in everyday life situations.

Football players report that doping motives combine relaxation and stimulation. Ama, Betnga, Ama Moor, and Kamga (2003) found that 1,116 amateur Cameroonian footballers reported high use of cocaine, marijuana, and several stimulants (such as regional alcohol, tobacco, regional plants) before matches to reduce anxiety. Waddington et al. (2005) asked 706 professional players to respond to questionnaires and found that the use of drugs like anabolic steroids or ephedrine to increase performance was rare. The players essentially used products such as cannabis for relaxation and cocaine for stimulation. In France, Pruvost and Jacomet (2005) underlined that football, as a team sport, reinforces the motivation to use cannabis as a means of building and cementing good relationships with teammates.

The studies to determine and rank the motives for secretive doping behaviors have met with methodological difficulties. Few sporting figures have a personal interest in breaking the omertà, not individual athletes or teammates, staff or federation members, journalists, or sponsors. Deliberately damaging the popular myth of athletic perfection is anathema to virtually all members of the world sporting community. Thus, the power of common social representations limits access to the real thoughts and behaviors concerning doping. Researchers can obtain cold cognitions, with memory biases (deliberate or not), reconstructions to protect self-esteem, and external causal attributions. But classical interviews with athletes who have tested positive cannot deliver "the whole story." These athletes are under intense social pressure and at risk of condemnation; media scrutiny has a powerful impact,

and any inquiry is retrospective, with responses subject to deformation and omission. Doping thus remains a taboo, and the biases inherent to standard retrospective studies are too great to obtain a model with quantitative ranking of doping motives in athletes. Moreover, many studies have focused their investigations on adolescents, sportspersons of a low level (local, regional), or retired elite athletes. Nevertheless, the evidence shows that the risk of doping is highest among men, young adults (20–25 years old), and high-level practitioners (Laure, 2001).

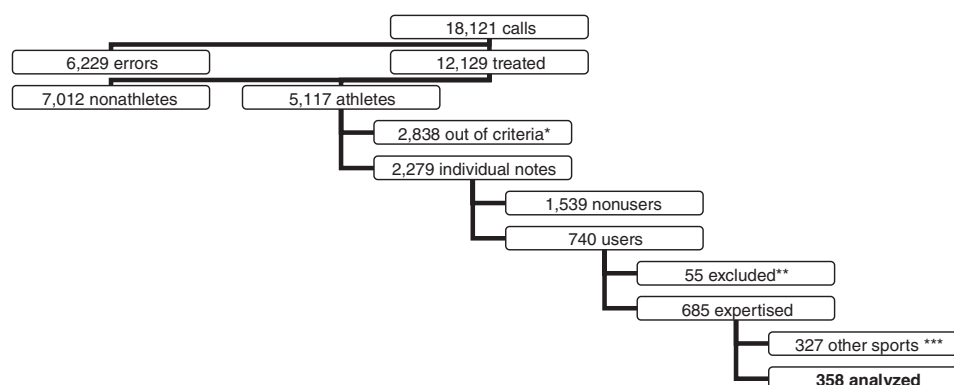
Another approach to the problem would be to interview athletes when they are actually preoccupied about doping. This hot cognition makes it difficult for them to analyze the reasons for their behavior. According to the dynamical approach in psychology (see Nowak & Vallacher, 1998), a behavior or thought emerges spontaneously from a complex system within a specific context. The behavior or thought is conceived as an emergent property that arises from the interplay of the many elements included in the system (Guastello & Guastello, 1998; Ninot, Fortes, & Delignières, 2005). If the assessment is proximal to the event, then the contents reflect a specific state of the complex system. If an athlete using a prohibited substance has questions about doping and is trying to find help to resolve the problem, then the researcher has an opportunity to determine the real motives for the substance's misuse. An interview during a crisis is more likely to go beyond social representations. Theoretically, this model requires conditions in which the athlete spontaneously allows the motives for illicit substance use to emergence and simultaneously is in contact with a researcher.

A free and anonymous call-in service could be an interesting means to explore this hypothesis and potentially build a model. The setting allows for an anonymous conversation with a doping specialist, and an athlete might be more likely to express his or her true motivations for doping, as well as the reasons to resisting drug use. We hypothesized that the same descriptive hierarchy of doping motives would be obtained in three sports most affected by doping behaviors: cycling, bodybuilding, and football.

METHODS

Study Design

This exploratory study analyzed the contents of phone calls to a free and anonymous French national antidoping service called *Ecoute Dopage*. All calls were saved in a database according to specific criteria (age, sex, sport, level and intensity of training, substance in the case of an athlete's call) along with a transcription note. The five call receivers were psychologists experienced in research interviews and were trained for the protocol. A team of six researchers was asked to determine the motive(s) for the doping behavior of each subject (specific criteria and an individual note), using a large open scale of preestablished motives organized into five domains: (a) biological, (b) psychological, (c) cultural, (d) relational, and (e) professional. Two researchers assessed the data from each call,



* Conversation less than 1 minute; adolescent 12% and women 9.5%.

** No agreement between the two researchers (concordance <95%).

*** 60 other sports.

FIGURE 1. Design sample from the database of the national antidoping phone-help service between January 2000 and December 2005.

and a motive was accepted as valid if the two researchers reached 95% agreement.

Sample

The qualitative data were all phone calls between January 2000 and December 2005 ($n = 12,129$). The inclusion criteria were as follows: male; adult; practicing cycling, bodybuilding, or football; and using a substance that was on the World Anti-Doping Agency (WADA) prohibited list (2010). Also, the phone call had to last more than 1 minute. Calls under 1 minute were considered to be too short to determine the motives. In these cases, the callers usually asked for specific information about doping. Female athletes made up only 7% of the callers and adolescents 12%. Of the 2,279 individual calls from athletes, 740 callers acknowledged using prohibited substances (Figure 1). Fifty-five of these callers were excluded because the two researchers did not reach 95% agreement.

Of the 685 remaining callers, 327 practiced 60 sports other than those retained for this study and formed groups of under 20 individuals. Thus, 358 were retained for the study: 115 cyclists, 203 bodybuilders, and 40 footballers. Among the cyclists, 46% trained at the elite level; 39% were regional competitors; and 15% were recreational players. The majority reported training more than 10 hours per week (59%), 41% between 2 and 10 hours, and 0% fewer than 2 hours. Most of the bodybuilders (46%) trained recreationally compared with 24% who were regional competitors and 16% who were elite. The majority reported training between 2 and 10 hours per week (72%), but 27% trained more than 10 hours and 2% fewer than 2 hours. Fifty-five percent of the footballers trained at the elite level compared with 27% who were regional competitors and 18% who were recreational players. The majority reported training between 2 and 10 hours per week (70%), 30% more than 10 hours, and 0% fewer than 2 hours. The impossibility of verifying the veracity of these reports could be problematic, and this should be considered as a possible limitation.

National Antidoping Phone-Help Service

The national antidoping phone-help service was called *Ecoute Dopage*, as stated earlier. It had been set up to provide information about illegal substance use regarding the law, sports regulations, and known dangers. The service had also been designed to help callers directly or indirectly concerned with doping issues (Ninot & Bilard, 2002). The experienced sport psychologists kept the focus on the caller, with active listening and the expression of empathy (Bilard, 2001). Phone calls were free and strictly anonymous (from 10:00 a.m. to 8:00 p.m., Monday to Friday). The average call lasted 11 minutes, and 81% of the adult callers were men. The calls were classified into four types: (1) requests for information (WADA substance list, addiction services, clinician referrals, sport federations, antidoping rules, etc.), (2) personal expression, (3) requests for help in decision-making, and (4) therapeutic support.

The phone conversation had four advantages compared with the face-to-face interview (Holleaux, 2004; Lecorps, 2004). First, it was spontaneous, with no waiting, which limited cognitive reconstruction. Time was relatively unimportant compared with the structured interview: The athletes could call and end the call whenever they wished. Second, the act of telephoning is a familiar means of communication and therefore was unlikely to inhibit speaking, the expression of feelings, the sharing of experiences, and personal vocabularies. Third, the anonymity of a professional trained in addictive behaviors and sport doping further ensured the freedom to speak in a secure setting. Fourth, the calls were free, providing time for unhurried conversation and opportunities to call back.

Assessment

Each phone call received by a psychologist was recorded as an electronic note and archived in the database. The interview transcriptions about doping motives were made by psychologists. To determine the motives, we followed three steps.

Step 1: Selection of Individual Call Notes Meeting the Inclusion Criteria

We retained the individual call notes of the sportspersons ($n = 2,279$). We then limited the population according to the inclusion criteria. When two notes belonged to the same caller, we pooled the two phone interviews into a single note. We obtained 740 notes of athletes declaring consumption of prohibited substance(s) (WADA, 2010). From these 740 notes, 358 were from the three targeted sports.

Step 2: Attribution of Motive(s) for Doping Behaviors

A team of six researchers studied the individual notes to determine the doping motives of 358 cyclists, bodybuilders, and footballers. We randomly gave each note to two researchers, and they independently determined the manifest motive for doping mentioned in the interview. They used a memo-pad of potential motives based on literature reviews and the experience of the psychologists working for Ecoute Dopage. The memo-pad inventoried all the factors that provoke doping behavior (Table 1) in five domains. For each note, the researcher had to code the memo-pad, but he or she could also create a new category.

Step 3: Concordance Between the Two Researchers' Analyses

To limit bias due to researcher subjectivity, an interinvestigator discordance coefficient was calculated between the two interpretations of a single note. If the coefficient was higher than 5%, the subject was excluded.

We also indicated the proportion of illicit substances reported for each sport, whether the substances were on the WADA list, and the athletes' level of practice and training intensity.

Statistical Analyses

We computed the descriptive data from the antidoping phone-help service and obtained the percentages of prohibited substances used by cyclists, bodybuilders, and footballers and the percentages of motives given (Table 2).

RESULTS

From 358 individual notes from the antidoping service, 88.6% of the calls were requests for information; 1.5% were personal expressions about doping; 6.9% were requests for help in decision-making; and 3.0% were for therapeutic support.

Table 2 shows the substances used by the athletes within sports and details the nature of the substances. The majority of the substances were prohibited by the WADA. Cyclists declared using glucocorticosteroids (34.4%). Bodybuilders massively consumed anabolic androgenic steroids (77.5%). Footballers used cannabinoids (51.6%), stimulants (12.9%), and narcotics (9.7%). From this sample, 6.7% of the callers (cyclists and footballers, with 79% being cyclists) had tested positively in doping controls.

TABLE 1. Motives for doping

Domain	Subdomain	Nature of motives	
Biological	Deficiency	Fatigue	
		Chronic injury	
		Acute injury	
		Biological disequilibrium	
		Muscular weight loss	
		Fat weight loss	
		Healing	
		Limiting pain during exercise	
		Limiting other pain	
		Disease	
Efficiency		Pathological sleep	
		Enhancing muscular strength	
		Enhancing endurance	
		Enhancing fatigue recovery	
		Other	
Psychological	Deficiency	Disturbance in sexual identity	
		Disturbance in social identity	
		Disturbance in personal identity	
		Disturbance in body image	
		Anxiety	
		Depression	
		Sensation seeking	
		Disturbance in personality (introversion)	
		Disturbance in personality (extraversion)	
		Disturbance in personality (alexithymia)	
		Disturbance in personality (antisocial)	
		Eating disorder	
		Dependency (movement, substance)	
		Other	
		Cultural	
Social norm associated with society (be the best)			
Relational		Other	
		Family (father, mother)	
		Trainer	
		Clinician	
		Paramedical	
		Agents	
		Friends	
		Other athletes	
		Dealers	
		Club managers	
Professional	Sport	Other	
		Performance	
		Poor performance	
		Financial gain	
		Unemployment	
	Training or retraining		
	Beyond sport		Other
			Performance
			Poor performance
			Financial gain
Unemployment			
Training or retraining			
Other			

TABLE 2. Declared substance use in the three sports

	Cycling (%)	Bodybuilding (%)	Football (%)
<i>Class of prohibited substances</i>			
Anabolic androgenic steroids	9.4	77.5	9.7
Other Anabolics	0.0	1.6	3.2
Peptide hormones	9.4	3.9	6.5
Beta-2-agonists	4.2	0.8	0.0
Hormone antagonists	0.0	0.0	0.0
Diuretics	0.0	0.0	0.0
Stimulants	19.8	10.1	12.9
Narcotics	2.1	0.0	9.7
Cannabinoids	13.5	2.3	51.6
Glucocorticosteroids	34.4	2.3	3.2
Total	92.7	98.4	96.8
<i>Class of prohibited substances within sport</i>			
Alcohol	0.0	0.0	0.0
Beta-blockers	2.1	0.0	0.0
Total	2.1	0.0	0.0
<i>Prohibited methods</i>			
Blood doping	0.0	0.0	0.0
Physiological manipulations	0.0	0.0	0.0
Gene doping	0.0	0.0	0.0
Total	0.0	0.0	0.0
<i>Drugs</i>			
Total	5.2	1.6	3.2
Total	5.2	1.6	3.2

Figure 2 shows the proportions of motives in the five categories: (a) biological, (b) psychological, (c) cultural, (d) relational, and (e) professional.

Table 3 presents the three associated motives predisposing the athletes to doping. Health concerns, performance, and the sport's social norms were the major factors in cycling; increasing muscular strength, the sport's social norms, and body image disturbances were the major factors in bodybuilding; and societal social norms, anxiety, and muscular strength equivalent to that of friends were the major motives in football. The other motives are presented according to rank.

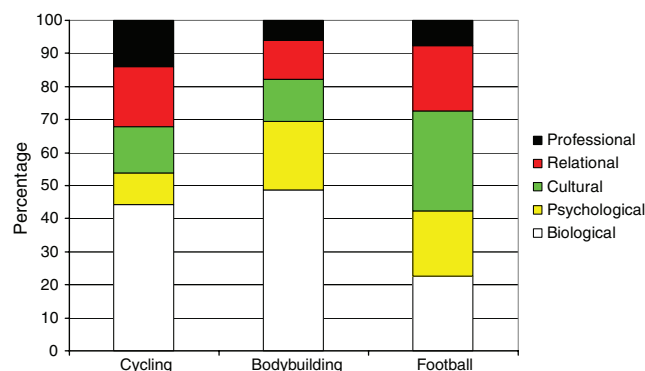


FIGURE 2. Proportion of motives for illicit use of doping substances as reported by callers to the national antidoping phone-help service in the five categories (biological, psychological, cultural, relational, professional).

DISCUSSION

The aim of this study was to determine the most frequent motives for using substances prohibited by the WADA, as given by cyclists, bodybuilders, and football players calling a national antidoping phone-help service. The results showed that only 6.7% of the subjects had tested positive (only in cycling and football, as bodybuilding has no doping control policy) with three times more cyclists than footballers. The results also showed that the motives for doping were distinct and ordered differently in the three sports.

The cyclists first cited health concerns to justify the use of several illicit substances (rank 1). They reported trying to reduce health problems associated with their sport. Other motives in the same vein were limiting pain during effort (rank 6), reducing fatigue (rank 7), reducing pain in general (rank 10), treating acute injury (rank 14), and enhancing fatigue recovery (rank 14). It was thus logical that glucocorticosteroids were the most cited substance (34.4%). Therefore, the priority of the cyclists appeared to be a strategy to preserve fitness and prevent injuries and symptoms due to intensive training. Their health concerns were due to the training intensity and sensitivity to pain and fatigue. Associated with this motive, we also observed that sport doctors were a real support in justifying consumption (rank 4). Cyclists have been shown to be predisposed to collaborate with team sport doctors to treat and medicate for any health concerns that may affect their performance (Laure, Binsinger, & Lecerf, 2003). It is also interesting to note that concern for health was the argument put forth by the east Germans to defend their use

TABLE 3. Motives for using substances on the WADA list (2010) from calls to the national antidoping phone-help service

Rank	Cycling	<i>n</i> = 115	Bodybuilding	<i>n</i> = 203	Football	<i>n</i> = 40
1	Disease ^a	19.1%	Muscular strength ^a	38.9%	Social norms with society ^c	27.5%
2	Performance ^c	13.9%	Social norms of sport ^c	12.3%	Anxiety ^b	12.5%
3	Social norms of sport ^c	9.6%	Disturbance in body image ^b	10.8%	Muscular strength ^a	10.0%
4	Clinician ^d	6.1%	Performance ^c	5.9%	Friends ^d	10.0%
5	Endurance ^a	5.2%	Enhancing fatigue recovery ^a	3.0%	Dependency ^b	7.5%
6	Pain during effort ^a	5.2%	Disturbance in personal identity ^b	2.5%	Trainer ^d	7.5%
7	Fatigue ^a	4.3%	Other athletes ^d	2.5%	Performance ^c	7.5%
8	Social norms of society ^c	4.3%	Fat weight loss ^a	2.0%	Fatigue ^a	5.0%
9	Trainer ^d	4.3%	Other biological factors ^a	2.0%	Acute injury ^a	2.5%
10	Pain ^a	3.5%	Dependency ^b	2.0%	Disease ^a	2.5%
11	Friends ^d	3.5%	Family ^d	2.0%	Other biological factors ^a	2.5%
12	Anxiety ^b	2.6%	Sellers ^d	2.0%	Social norms of sport ^c	2.5%
13	Dependency ^b	2.6%	Other ^d	2.0%	Other athletes ^d	2.5%
14	Acute injury ^a	1.7%	Depression ^b	1.5%		
15	Enhancing fatigue recovery ^a	1.7%	Friends ^d	1.5%		

^aBiological domain.

^bPsychological domain.

^cCultural domain.

^dRelational domain.

^eProfessional domain.

of illegal substances: They argued that these substances were used not as performance enhancers but as performance enablers. From their viewpoint, these substances were required to maintain homeostasis during heavy and prolonged training. This conception (i.e., medical use of substances to maintain health) is also a current topic in American horse racing, another example that emphasizes the complexity of understanding the “doping” activity. The second motive was performance enhancement (rank 2). The cyclists wanted high performances to achieve both a sense of internal control (Ninot, Connes, & Caillaud, 2006) and such external rewards as financial gain, medals, and public admiration (Donahue et al., 2006; Trabal & Duret, 2003). The illicit substance was the added value that could make the difference on the day of competition. The use of stimulants (19.8%) associated with anabolic steroids (9.4%) and peptide hormones (9.4%) was presented as providing a well-known efficiency in cycling (Birkeland et al., 2000).

The third motive was the social norms associated with the sport. The cycling subculture has a powerful impact on its members (Lê-Germain & Leca, 2005). Cycling is ruled by implicit principles that create high team cohesion (Trabal & Duret, 2003). Doping is one of the principles of this cohesion, but no one refers to it. The risks are minimized, considered as banal, so that they become normal.

The first motive for the bodybuilders was strength enhancement. Thus, the frequent phone discussions about steroids were unsurprising (77.5%), as noted by several researchers (Korkia, 1996; Perry, Wright, & Littlepage,

1992; Striegel et al., 2006). Perry et al. (1992) showed that 38% of amateur bodybuilders used anabolic steroids, but body image disturbance was not the main reason. First of all, these athletes hoped to increase their muscular strength and seemed to be in good shape. The doping substance is not considered by the bodybuilders to be dangerous (Monaghan, 1999; Wright et al., 2000). The substance is perceived as a “natural” addition of exercise to rapidly increase muscular volume.

The second motive was the sport’s norms. This sport is associated with doping substances widely available in fitness centers. Monaghan (2002) underlined that bodybuilders justify doping as a natural means to increase muscular volume, improve attractiveness, and decrease fatigue. Because nearly all bodybuilders consume these substances, their use is legitimized (Monaghan, 1999). Moreover, the bodybuilders reported receiving considerable advice from proximal circles such as other athletes (rank 7), family (rank 11), dealers (rank 12), others (rank 13), and friends (rank 15). This finding supports the observation that bodybuilders have higher scores of social dependence than other athletes (Hurst et al., 2000). They easily follow the lead of others in denying any inappropriate behavior and controlling their use of anabolic substances. They underestimate their own consumption compared with other athletes who use steroids dangerously in intensive sessions, such as cyclists.

The third motive was body image. The high value that society gives to physical attractiveness encourages bodybuilders to try to conform to an ideal image. They are

fascinated by their own image, and the walls of mirrors in fitness centers reinforce this feeling. This motive was associated with the need to affirm masculine identity. The bodybuilders wanted to become more “male” and attractive. They hoped to dominate and use their bodies as a power vehicle. However, in this particular sport culture, a pervasive belief is that power must be acquired by pain and effort, enhancing virility and courage, with bodybuilders seen as modern gladiators. They deny the damage to health of these substances and preserve their self-esteem (Porcellini & Sandler, 1995) by rejecting the use of hard drugs (Monaghan, 2002).

The first motive of the footballers was conformity to the social norms of their general culture and not their sport. This motive was associated with the influence of friends (rank 4) and suggests that football exerts a pressure on players to do as others do. The substances massively cited were cannabinoids (51.6%) as well as stimulants (12.9%). Creating and maintaining a festive atmosphere thus emerged as a predominant motivation. Cannabinoids are the most frequently used illicit substance in our society (Lorente et al., 2005). They are widely used at social events among friends and are characterized by relaxation and a decrease in inhibition. They are found in all social classes. Although the players reported using cannabis for reasons other than performance enhancement, the substance is still prohibited by football governing bodies and the WADA. The group enhances a collective dynamic to use this substance.

The second motive was the control of anxiety, probably due to the uncertainty of the game results. The game of football is highly unpredictable because it is a team sport that depends on the performances of many players, the performances of opponents, the weather, the partiality/impartiality of referees, coaches' choices, and injuries, among other. The high number of factors that footballers cannot control generates considerable anxiety. The efficiency of cannabis to decrease anxiety has been well demonstrated. Use of this substance can also be a self-handicapping strategy to limit the impact of poor sporting results and explain defeat.

The third motive was strength enhancement. Football requires leg speed, and anabolic steroid substances can enhance individual performance during matches.

The results showed that doping motives differed between cyclists, bodybuilders, and footballers. The main motives for doping were specific: preserving health for cyclists, increasing muscular strength for bodybuilders, and enjoyment for footballers. The callers all knew the best substances to obtain the desired effect. Compared with the literature, the surprising results of this study were the weak group influence and the impact of health preoccupations for the cyclists, the relatively low influence of body image for the bodybuilders, and the motivation to increase muscular strength in the footballers. Thus, prevention campaigns need to be specific. Comparing motives for prohibited substance use can lead to confusion if the individual sport is not taken into consideration. The first motive cited by cyclists indicates the paradoxical strategy

of current antidoping campaigns. The campaigns focus on the dangers of illicit substances to athletes' health. Yet these athletes were using appropriate and efficient substances to preserve their health. Thus, a prevention message targeting health maintenance misses the point because their main doping motive is to combat the very real (and subjective) risk of falling ill. The real risk instead seems to be self-medication, and a more effective message to cyclists should thus emphasize means to maintain a good balance between high performance and optimal health. Issues of domination and male identity need to be addressed in campaigns for bodybuilders via better health education. Prevention should be more focused on body self-acceptance. The footballers hoped to strengthen their team relationships. Prevention campaigns must insist on limiting use of recreational drugs and supplements.

The athletes of this study did not completely fit the model of McDuff and Baron (2005), which distinguished between a performance-enhancer model and an abuse and addiction model. The frontier is more complex, and a better conception might be a nonlinear continuum that is variable over time. Athletes sometimes want to escape pressure and increase pleasure by drug use (drug-induced euphoria, pain reduction) and sometimes want to increase performance in their highly competitive world, reach their goals, and go beyond their own limits. Also, although illicit drug use is a clear deviation from sporting regulations and a form of cheating, they surprisingly did not report guilt feelings. Nevertheless, 6.9% were obviously questioning their drug use; 3.0% were seeking advice; and even in the seemingly simple requests for information (88.6%) and personal expressions (1.5%), a tentative approach to making a decision seemed present.

With regard to health issues, the debate about doping and biological reequilibrium particularly concerns cyclists. This debate will have major consequences in amateur sports, as 4.9% of illicit substance users exercise for leisure (Laure, 2001). Where is the frontier between medical care and doping?

This retrospective study analyzed psychologists' notes on interviews collected from an antidoping phone service. This service is a fruitful observatory for gaining insight into the individual experience and behaviors related to doping. However, the callers were perhaps not fully representative of the population of doping athletes. Direct and longitudinal interviews in which the athletes question their own doping behaviors more closely are now needed to better understand the complex system of substance use for performance improvement and appearance improvement; the psychological reasons, group effects, and cultural models that are operative; and the best treatment strategies, depending on the sport (Hauw, Gauthier, & Bilard, 2009).

Declaration of Interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of this paper.

RÉSUMÉ

Etude exploratoire des motivations liées à l'utilisation de substances illicites dopantes chez les sportifs appelant au numéro national vert <<Ecoute Dopage>>

Le poids des motivations suscitant des comportements de dopage reste indifférencié suivant les sports et/ou limité à quelques explications superficielles liées aux pratiques. Cette étude avait pour but d'établir une hiérarchie dans les motifs associés aux comportements dopants dans trois sports fortement exposés à ce problème: le cyclisme, le body-building et le football. Les appels téléphoniques au numéro vert <<écoute dopage>> de 115 cyclistes, 203 bodybuilders et 40 footballeurs entre les années 2000 et 2005 ont été analysés. Les résultats ont montré que les motivations prioritaires pour l'utilisation de substances dopantes étaient spécifiques: préserver leur santé chez les cyclistes, améliorer leur force musculaire pour les bodybuilders, et se divertir pour les footballeurs. Les appelants connaissaient bien les meilleures substances qui permettaient d'obtenir les effets recherchés. Ces résultats sont contrastés avec la littérature notamment la faible influence du groupe chez les cyclistes et la préoccupation concernant la santé, la relative faible importance de l'image du corps pour les bodybuilders, et l'envie d'améliorer sa force chez les footballeurs. Ces résultats suggèrent que les campagnes de prévention soient spécifiques.

Mots clés: Dopage, Numéro vert Ecoute Dopage, Comportements, Motivation

RESUMEN

Un estudio exploratorio de las motivaciones, ligadas al uso de sustancias ilegales, de deportistas que llamaron al número verde nacional "Doping Escucho"

La importancia de las motivaciones que provocan el comportamiento no están bastante matizadas según los deportes, o por lo menos las explicaciones se quedan cortas junto a las practicas. Este estudio tiene como objetivo de establecer una jerarquía entre los patrones de comportamientos ligados con el problema del doping, en tres deportes el ciclismo, la musculación y el fútbol. Las llamadas telefónicas al numero especial "Doping Escucho" de 115 ciclistas, 203 físico culturistas y 40 futbolistas han sido analizadas. Los resultados han mostrado que las más importantes motivaciones que conducen al uso de drogas son muy distintas: para los ciclistas era la salud; para los culturistas mejorar la fuerza; para los futbolistas divertirse. Las personas que llamaron conocían muy bien cuales eran los mejores productos para conseguir el resultado deseado. Estos se oponen a la literatura tradicional y se destacan algunos hechos. La importancia del grupo para los ciclistas, la preocupación de la imagen corporal para los culturistas, la fuerza física para los futbolistas. Estos resultados sugieren que las campañas de prevención tienen que dar más en el clavo.

Palabras clave: Doping, "Doping Escucho", Comportamiento, Motivación.

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GLOSSARY

Body image: A person's perception of his or her own physical appearance in general in relation to others.

Cognitive reconstruction: A process that transforms reality by denying, repressing, or modifying perceptions in order to make them fit with personal interests.

Doping: The use of substances or methods that are prohibited by the WADA list.

Motives: The needs explained or cited by a person that justify a specific behavior.

REFERENCES

- Ama, P. F., Betnga, B., Ama Moor, V. J., & Kamga, J. P. (2003). Football and doping: Study of African amateur footballers. *British Journal of Sport*, *37*, 307–310.
- Beck, F., Legleye, S., & Peretti-Watel, P. (2001). Sporting activity and use of psychoactive substances, from adolescence to the adult age. *Tendances OFDT*, *13*. Available at: <http://www.drogues.gouv.fr/uk/index.html>
- Bilard, J. (2001). Des psychologues à l'écoute du dopage [Psychologists listening to doping reports]. *Psychologues & Psychologie*, *155/156*, 31–34.
- Birkeland, K. I., Stray-Gundersen, J., Hemmersbach, P., Hallen, J., Haug, E., & Bahr, R. (2000). Effect of rEPO administration on serum levels of sTfR and cycling performance. *Medicine Science of Sports and Exercise*, *32*, 1238–1243.
- Brissonneau, C., & Bui-Xuan, K. (2006). Analyse psychologique et sociologique du dopage. Rationalisation du discours, du mode de vie et de l'entraînement sportif [Psychological and sociological analysis of doping. Rationalization, life style and sport training]. *Sciences et techniques des activités physiques et sportives (STAPS)*, *70*, 57–73.
- Donahue, E. G., Miquelon, P., Valois, P., Goulet, C., Buist, A., & Vallerand, R. J. (2006). A motivational model of performance-enhancing substance use in elite athletes. *Human Kinetics*, *28*, 411–520.
- Guastello, S. J., & Guastello, D. D. (1998). Origins of coordination and team effectiveness: A perspective from game theory and nonlinear dynamics. *Journal of Applied Psychology*, *83*, 423–437.
- Hauw, D., Gauthier, V., & Bilard, J. (2009). *Doping experiences during the careers of elite track and field athletes*. Paper presented at the 12th World Congress of the International Society of Sport Psychology (ISSP), Marrakesh, Morocco.
- Holleaux, A. (2003). La voix une ressource exceptionnelle dans l'entretien téléphonique [The voice: An exceptional resource for telephone interviews]. *La Santé de l'Homme*, *373*, 9–10.
- Hurst, R., Hale, B., Smith, D., & Collins, D. (2000). Exercise dependence, social physique anxiety, and social support in experienced and inexperienced bodybuilders and weightlifters. *British Journal of Sports Medicine*, *34*, 431–435.
- Korkia, P. (1996). Use of anabolic steroids has been reported by 9% of men attending gymnasium. *British Medical Journal*, *313*, 109.
- Laure, P. (2000). Consumption of performance-enhancing drugs by medical students in Nancy. *Thérapie*, *55*, 383–389.
- Laure, P. (2001). Épidémiologie du dopage [Epidemiology of doping]. *Immunoanalyse Biologique Spécialisé*, *16*, 96–100.
- Laure, P., Binsinger, C., & Lecerf, T. (2003). General practitioners and doping in sport: Attitudes and experience. *British Journal of Sport Medicine*, *37*, 335–338.
- Le Breton, D. (1999). *L'adieu au corps*. Paris: Métailié.
- Lecorps, P. (2004). La téléphonie sociale, ses vertus et ses limites [The social telephone, its virtues and limits]. *La santé de l'homme*, *373*, 9–10.
- Lê-Germain, E., & Leca, R. (2005). Les conduits dopantes fondatrices d'une sous culture cycliste (1965–1999) [The founding doping behaviors of a cycling subculture (1965–1999)]. *STAPS*, *70*, 109–125.
- Lorente, F. O., Peretti-Watel, P., & Grelot, L. (2005). Cannabis use to enhance sportive and non-sportive performances among French sport students. *Addictive Behaviors*, *30*, 1382–1391.
- McDuff, D. R., & Baron, D. (2005). Substance use in athletics: A sports psychiatry perspective. *Clinics in Sports Medicine*, *24*, 885–897.
- Monaghan, L. F. (1999). Challenging medicine? Bodybuilding, drugs and risk. *Sociology of Health & Illness*, *21*, 707–734.
- Monaghan, L. F. (2002). Vocabularies of motive for illicit steroid use among bodybuilders. *Social Science & Medicine*, *55*, 695–708.
- Ninot, G., Bilard, J. (2002). Influence de l'actualité sur le nombre d'appels au numéro vert "Écoute Dopage" [Influence of the news on the number of calls to a free anti-doping hotline]. *Alcoolologie & Addictologie*, *24*, 135–141.
- Ninot, G., Connes, P., & Caillaud, C. (2006). Effects of erythropoietin on physical self in endurance athletes. *Journal of Sports Sciences*, *24*, 383–391.
- Ninot, G., Fortes, M., & Delignières, D. (2005). The dynamics of self-esteem in adults over a six-month period: An exploratory study. *Journal of Psychology*, *139*, 315–330.
- Nowak, A., & Vallacher, R. R. (1998). *Dynamical social psychology*. New York: Guilford.
- Olrich, T. W., & Ewing, M. E. (1999). Life on steroids: Bodybuilders describe their perceptions of the anabolic-androgenic steroid use period. *Sport Psychologist*, *13*, 299–312.
- Peretti-Watel, P., Beck, F., & Legleye, S. (2002) Beyond the U-curve: The relationship between sport and alcohol, cigarette and cannabis use in adolescents. *Addiction*, *97*, 707–716.
- Perry, H., Wright, D., & Littlepage, B. (1992). Dying to be big: A review of anabolic steroid use. *British Journal of Sport Medicine*, *26*, 112–118.
- Porcellini, J., & Sandler, B. (1995). Narcissism and empathy in steroid users. *American Journal of Psychiatry*, *152*, 1672–1674.
- Pruvost, J., & Jacomet, Y. (2005). Drug use in English professional football. *Médecin du Sport*, *70*, 11–19.
- Schwerin, M. J., & Corcoran, K. J. (1996). Reliefs about steroids: User vs. non-user comparisons. *Drug and Alcohol Dependence*, *40*, 221–225.
- Schwerin, M. J., & Corcoran, K. J., Fisher, L., Patterson, D., & Shanks, S. (1996). Social physical anxiety, body esteem, and social anxiety in bodybuilders and self-reported anabolic steroid users. *Addictive Behaviors*, *21*, 1–8.
- Seznec, J. C. (2002). Toxicomanie et cyclisme professionnel [Drug addiction and professional cycling]. *Annale Médico-Psychologique*, *160*, 72–76.
- Simon, P., Striegel, H., Aust, F., Dietz, K., & Ulrich, R. (2006). Doping in fitness sports: Estimated number of unreported cases and individual probability of doping. *Addiction*, *101*, 1640–1644.
- Striegel, H., Simon, P., Frisch, S., Roecker, K., Dietz, K., & Dickuth, H., et al. (2006). Anabolic ergogenic substance users in fitness-sports: A distinct group supported by the health care system. *Drug and Alcohol Dependence*, *81*, 11–29.
- Trabal, P., Duret, P. (2003). Le dopage dans le cyclisme professionnel: accusations, confessions et dénégations [Doping in professional cycling: Accusations, confessions and denials]. *STAPS*, *60*, 59–74.
- Waddington, I., Malcolm, D., Roderick, M., & Naik, R. (2005). Drug in English professional football. *British Journal of Sport Medicine*, *39*, 1–5.
- World Anti-Doping Agency. (2010). *The world anti-doping code. The 2010 prohibited list. International standard*. Montreal, QC, Canada: Author.
- Wright, S., Grogan, S., & Hunter, G. (2000). Motivations for anabolic steroid use among bodybuilders. *Journal of Health Psychology*, *5*(4), 566–571.