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Research Paper

An (un)desirable trade of harms? How elite athletes might react to medically supervised 'doping' and their considerations of side-effects in this situation

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ABSTRACT

Background: The zero-tolerance approach to doping in sport has long been criticised. Legalising 'doping' under medical supervision has been proposed as a better way of protecting both athletes' health and fair competition. This paper investigates how elite athletes might react if specific doping substances were permitted under medical supervision and explore athletes' considerations about side-effects in this situation. The results are interpreted using a framework, which views elite sport as an exceptional and risky working environment.

Methods: 775 elite athletes (mean age: 21.73, SD = 5.52) representing forty sports completed a web-based questionnaire (response rate: 51%) presenting a scenario of legalised, medically supervised 'doping'.

Results: 58% of athletes reported an interest in one or more of the 13 proposed substances/methods. Athletes' interest in a specific product was linked to its capacity to enhance performance levels in the athletes' particular sport and depended on gender and age. 23% showed interest in either one or more of erythropoietin (EPO), anabolic-androgenic steroids (AAS), blood transfusions and/or Growth Hormone if permitted and provided under qualified medical supervision. Male speed and power sports athletes of increasing age had the highest likelihood of being interested in AAS (41%, age 36), female motor-skill sports athletes had the lowest (<1%, age 16). 59% feared side-effects. This fear kept 39% of all athletes from being interested in specific substances/methods whereas 18% declared their interest despite fearing the side-effects.

Conclusion: Interpreting results with the understanding of sport as an exceptional and risky working environment suggests that legalising certain 'doping' substances under medical supervision would create other/new types of harms, and this 'trade-off of harms and benefits' would be undesirable considering the occupational health, working conditions and well-being of most athletes. Assessing the risks and harms produced/reduced by specific drugs when considering sport as a precarious occupation may prove useful in composing the Prohibited List and reducing drug-related harm in sport.

Introduction

This paper aims to contribute to discussions about the regulation of drugs in sport by empirically investigating how elite athletes might react if 'doping' was permitted under medical supervision and explore athletes' considerations of side-effects in this situation. The implications of results, i.e., the trade-off between harms and benefits[1] of such approach for athletes, are interpreted using a conceptual framework that views sport as an exceptional and risky working environment.

Today 'doping' is prohibited in sport mainly to secure a level playing field, to protect athletes' health, to preserve the integrity of sport and to set a good example. Since the establishment of the World Anti-doping Agency (WADA) in 1999 and particularly the implementation of the first World Anti-doping Code in 2004, anti-doping rules and efforts have undergone a process of intensification, standardisation and harmonisation. Today's anti-doping programme is comprehensive (WADA, 2015) and, if caught, doping athletes risk four years' ineligibility for a first-time doping violation.

The current fight against doping faces multiple challenges, and the legitimacy of anti-doping efforts are greatly contested. For example, criticism has targeted a lack of clarity in the rationale justifying the aims of anti-doping policy (e.g. Hanstad &

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[1] The 'trade-off between harms and benefits' refer to the trade of harm and benefit of the present doping control model/anti-doping system as compared with a system in which 'doping' is legalised under medical supervision when focus is placed on athletes working conditions, occupational health, and well-being.

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Waddington, 2009; Mazanov & Connor, 2010; Møller & Dimeo, 2014; Waddington & Smith, 2009), or the justifiability of doping bans (e.g. Savulescu, Foddy, & Clayton, 2004; Tamburrini, 2007). It has been argued that the fight against doping is expressing a 'moral panic' executed as moral regulation (Critcher, 2014) or constituting a fear-based policy mirroring drugs myths from the non-sporting world, resulting in measures anchored in fear, morality and prejudice rather than in evidence-based and reasoned arguments (Coomber, 2014) without any clear evidence-based knowledge of drugs side-effects (Kayser & Broers, 2015; Kayser & Smith, 2008).

Others have argued that a zero-tolerance policy may have a negative impact on doping athletes' health because it alters supply chains, pushing consumers from "culturally embedded dealers" towards the "black market" (Fincoeur, van de Ven & Mulrooney, 2015). Furthermore, the current punitive approach has been denounced as ineffective in preventing athletes from doping (Kayser, Mauron, & Miah, 2007; Waddington & Smith, 2009), a notion supported by empirical studies illustrating that athletes with doping experiences do not regard deterrence elements as credible (Engelberg, Moston, & Skinner, 2015; Kirby, Moran, & Guerin, 2011; Pappa & Kennedy, 2013) and that testing programmes are not regarded by many athletes as a great deterrent (Overbye, 2017).

Further challenges facing anti-doping efforts are: firstly, the considerable differences in stakeholders' interpretations and implementations of the Wada Code and International Standards worldwide (Dikic, Markovic, & McNamee, 2011; Wagner & Hanstad 2011; Hanstad & Loland, 2005; Houlihan, 2014; Siekmann & Soek, 2010); secondly, flaws at all levels of the system, decreasing its effectiveness (WADA, 2013); thirdly, the very low detection rate (de Hon, Kuipers, & Bottenburg, 2015); and, fourthly, false negative (Ashenden, Gough, Garnham, Gore, & Sharpe, 2011; Lundby, Robach, & Saltin, 2012) as well as false positive testing results (Delanghe, Bollen, & Beullens, 2008; Lundby, Robach et al., 2008; Lundby, Achman-Andersen et al., 2008).

Furthermore, the paradoxes and unintended effects of anti-doping measures have attracted more attention in recent years. The paradoxes relate to how the comprehensive set of rules developed to protect athletes' health and secure equality and fairness in sport have created new forms of inequalities between athletes subjected to different anti-doping regimes (Efverström, Ahmadi, Hoff, & Bäckström, 2016; Hanstad, Skille, & Loland, 2010; Overbye & Wagner, 2014; Overbye, 2016; Waddington, 2010) and situations which may have negative effects on some athletes' health (Bourdon, Schoch, Broers, & Kayser, 2015; Overbye & Wagner, 2013; Lentillon-Kaestner, 2013). Other issues of concern relate to: the collateral damage of excessive rule enforcement, e.g. the high proportion of athletes punished due to unintentional anti-doping rule violations (Cox, 2014; de Hon & van Bottenburg, 2016; McArdle, 2015; Moston & Engelberg, 2016; Pluim, 2008), the unintended effects of the implementation of certain anti-doping rules, such as athletes' negative experiences and emotions associated with their obligation to report their whereabouts (Bourdon et al., 2015; Hanstad & Loland 2009; Overbye & Wagner, 2014; Valkenburg et al., 2014); challenges in the administration of Therapeutic Use Exemptions (Bourdon et al., 2015; Overbye & Wagner, 2013); unease during urine doping testing (Bourdon et al., 2015; Elbe & Overbye, 2014; Overbye, 2013, 2016); and, finally, athletes' increasing worries about and avoidance of medicines for fear that they might be on the Prohibited List (Overbye, 2013).

A critical appraisal of the zero-tolerance approach and the aims of this study

In this context it is relevant to critically assess the benefits and costs of the system, for example with regard to not only its success in reducing doping (de Hon, 2016) but also its ability to reduce (and not cause) harm to athletes. Researchers have argued that the current anti-doping regime has gone too far in fighting doping in sport (e.g. Kayser et al., 2007; Møller, 2010, 2011), suggesting that anti-doping produces problems of greater impact than those which are solved (Kayser et al., 2007; Kayser & Broers, 2015; Møller & Dimeo, 2014). Hence, it has been argued that current anti-doping efforts have too many negative effects, are too extensive, yet too ineffective, and very costly (e.g. Kayser et al., 2007); from a public health perspective the cost of anti-doping is difficult to justify (Kayser et al., 2007; Kayser & Broers, 2012); and a relaxation of rules along with harm reduction measures may come at lower cost and/or with fewer consequences for society and the individual compared with the current zero-tolerance, abstinence-based approach (Kayser & Broers, 2012, 2015; Kayser & Tollener, 2017).

Consequently, several researchers have argued that the current 'zero tolerance' approach to 'doping' is inappropriate and that implementing strategies based on harm minimisation would be better alternatives. A variety of alternative models for new drug-control policies in sport has been proposed aimed at protecting health as a replacement for the current punitive doping control measures (e.g. Kayser & Smith, 2008; Kayser & Broers, 2015; Kayser & Tollener, 2017; Kirkwood, 2009; Lippi, Banfi, Franchini, & Guidi, 2008; Steward & Smith, 2015; Savulescu, 2015). Examples of such strategies are a relaxation of anti-doping rules within the boundaries of acceptable health risks, accompanied by harm-reduction measures (Kayser & Tollener, 2017); and allowing 'doping' under medical supervision (e.g. Kayser, Mauron, & Miah, 2005, 2007; Kirkwood, 2009; Savulescu et al., 2004; Stewart & Smith, 2008). Some proposals also seem to be based on assumptions that 'doping' is widely used in elite sport and that (most) athletes will use 'doping' regardless of either its impact on health or the illegal status of the drug. Furthermore, a key rationale behind suggesting legalisation or partial legalisation of drugs under medical supervision is the notion that the level of playing field is a myth and that the focus ought to be on minimising health harms rather than on punishment. In this way, it is expected that permitting drugs (or drugs to a certain limit) under medical supervision may provide athletes with a 'healthier' alternative because, firstly, athletes and doctors would not need to hide their involvement in using certain substances or methods and, secondly, the possible side-effects of different methods could be dealt with more effectively (e.g. Kayser et al., 2005). Besides this, it has been argued that legalisation would increase fairness because all athletes would be given the same opportunity of using performance-enhancing drugs (Savulescu et al., 2004; Savulescu, 2015; Tamburrini, 2007).

Yet the proposals for legalising 'doping' or certain drugs such as anabolic-androgenic steroids (AAS) and erythropoietin (EPO) under medical supervision in sports are controversial and run counter to the intensification of anti-doping efforts recent years. However, although introducing different harm reduction approaches to drug use in society has become increasingly common (Cook, Bridge, & Stimson, 2010), and shown to be useful in protecting the health of drug users in different settings, including among gym users (Kimergaard & McVeigh, 2014), we do not know if a radical change in the current strategy would actually reduce health risks in the social field of elite sport, or, how permitting 'doping' under medical supervision in sport would be received by athletes.

To date, one drawback to any discussion on legalising 'doping' under medical care (and similar strategies) in an elite sport context is the lack of empirical studies informing discussions. In particular, researchers seldom consider ways in which the cultural and economic environment of sport may have an impact on legalised, medical supervised 'doping'. Moreover, although it has been