



A qualitative analysis of the factors that protect athletes against doping in sport



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ABSTRACT

Objective: To explore the protective factors against performance enhancing drug (PED) use in sport.
Design: Ten competitive athletes ($M = 5, F = 5$) representing five different sports (field hockey, boxing, football, triathlon, rugby) were recruited through convenience sampling to undertake a semi-structured interview to enable a qualitative analysis of athletes' lifelong athletic careers.
Method: Verbatim transcripts were analysed using an established three-stage coding process to identify the common themes within the narratives.
Results: Personal and situational protective factors were identified in the accounts. Personal factors included: (i) a strong moral stance against cheating; (ii) an identity beyond sport; (iii) self-control; and (iv) resilience to social group pressures. Situational factors included secure attachments to people at all stages of the athlete's life. This facilitated both the promotion of moral decision making and assisted in the development of anti-doping attitudes. When situational factors – such as a pro-doping climate – arose, key attachments in the athletes' lives interplayed with personal factors to reduce the risk of doping.
Conclusions: These findings offer insights into factors that protect competitive athletes against using PEDs in sport and further our understanding of the complex interaction between risk and protective factors at individual, psychosocial and societal levels among competitive athletes. As a complex behaviour, doping in sport cannot be prevented by solely focussing on the individual athlete; contextual factors beyond the athlete's control also impact on this behaviour. Thus, a paradigm shift is warranted to move beyond an athlete-centred approach to anti-doping.

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Introduction

Why do some athletes use performance enhancing drugs (PED), while other athletes abide by anti-doping rules? Unlike other social issues – such as illicit drug use, smoking and bullying – understanding of this transgressive behaviour is still emerging and policy and practice is not informed by either an equivalent scale or span of evidence. However, the last decade has seen an exponential increase in the number of studies seeking to identify risk factors for doping in sport. These studies have suggested the following risks: male gender (Backhouse, Whitaker, & Petr czi, 2013; Whitaker, Long, Petr czi, & Backhouse, 2013); career transitions and periods of instability (Lentillon-Kaestner & Carstairs, 2010; Mazanov,

Huybers, & Connor, 2011); previous use of nutritional supplements (Backhouse et al., 2013; Lentillon-Kaestner & Carstairs, 2010); contact with dopers, being offered drugs, availability of drugs (Lentillon-Kaestner, Hagger, & Hardcastle, 2012; Pappa & Kennedy, 2012); enhanced injury-recovery and economic rewards (Bloodworth & McNamee, 2010); competitive level (Whitaker et al., 2013); and the influence of peers, parents, cultural norms and sporting culture (Pappa & Kennedy, 2012; Smith et al., 2010).

Furthermore, 'risky' personality factors include low ratings of self-esteem, integrity, confidence and high trait anxiety (Petr czi & Aidman, 2008); dissatisfaction with one's appearance, impulsiveness, a 'win-at-all-costs' attitude (Mitić & Radovanović, 2011; Whitaker, Long, Petr czi, & Backhouse, 2012); dispositional risk taking, and sensation seeking (Petr czi & Aidman, 2008); and the fear of failure (Pappa & Kennedy, 2012). Whitaker et al. (2012) also suggest that athletes' perceptions of PES users influences the likelihood of their own use; the more positive attributes they associate with users, the more likely they are to use themselves. Emerging from this literature is a general agreement that no single factor

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predisposes an individual to use PEDs in sport; doping is influenced by multiple risk factors which can act individually, collectively and/or in sequence to support the decision to dope, whether as a one-off, episodically or systematically.

Despite these recent advances in knowledge, there still appears to be a significant aspect of this complex behaviour that is generally overlooked: protective factors. Protective factors can be defined as the personal, social and environmental factors that moderate, buffer and/or insulate against risk (Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995; Rennie & Dolan, 2010). Therefore, an expanded understanding of the range and role that protective factors could play, offers an important part in furthering our understanding of the doping phenomenon. Leone and Fetro (2007) interviewed 12 physically active American males to focus on their motivations for not using anabolic androgenic steroids (AAS). Protective factors included beliefs around undesirable side effects, getting caught, morality, AAS education, prohibitive costs, stigma, fear of needles, lack of awareness, and low concern with body image. In a sample of talented young athletes, a commitment to achieving performance goals through 'natural ability' was deemed protective (Bloodworth & McNamee, 2010). Additionally, religion, marital status and parenthood can be protective against current and future doping (Rodek, Sekulic, & Pasalic, 2009; Zenic, Stipic, & Sekulic, 2011).

The World Anti-Doping Agency (WADA, 2011) has recognised the need for a shift from the traditional research preoccupation with risk factors to encompass the potential power of protective factors. Developing a specific set of doping facilitators and inhibitors while also establishing strategies to capitalise on these points is fundamental for improving doping prevention (Petróczy & Aidman, 2008). Indeed, identifying the basis for athletes' choices not to use PEDs has the potential to reveal intervention points and develop a powerful evidence base that will strengthen prevention programming. Thus, the overarching aim of this study is to enhance current understanding of why athletes refrain from engaging in PED use by: 1) giving athletes a voice and providing a means for them to express their experiences and feelings towards PEDs; 2) exploring what specific factors shape an athlete's beliefs in regards to their use; and 3) identifying protective factor themes throughout the athletes' individual sporting careers that have allowed them to refrain from using PEDs.

Method

Participants and procedures

Utilising a convenience sampling approach, 10 athletes were interviewed – one male and one female for each of these sports; football, rugby, field hockey, boxing and triathlon. This sample size was based on the premise that thematic saturation of information can occur from as few as six interviews (Guest, Bunce, & Johnson, 2006). These sports were selected because they present a diverse cross-section in terms of contact, team, individual, ball sports, indoor and outdoor sports (Smith et al., 2010). All participants were over 18 years of age (range 18–30 years) and competed at British University & Colleges Sport (BUCS) Division 1 or national league level in the UK. Seven participants were current University students (3 female) and competed in the BUCS league. Of the three non-students; one competed professionally, one played in a national league and the final participant had retired and was currently coaching. All athletes claimed to have not used any illegal form of PEDs at any point in their career. However, a number reported being exposed to doping opportunities. Ethical approval for the study was granted by the host institution and this complied with normal expectations for informed consent, voluntary participation, etc.

Interviews were semi-structured to allow flexibility to pursue themes important to each participant and to secure detailed and multi-layered responses (Smith et al., 2010). Participants were encouraged to detail their athletic career, with childhood and early experiences serving as the catalyst for key stages and experiences in their adult sporting career (Smith et al., 2010; Smith & Sparkes, 2009). Once the interview guide was developed it was reviewed by another experienced qualitative researcher. The finalised interview comprised seven interrelated sections: 1) Sports career; 2) Training; 3) Relationships and support; 4) Knowledge of PEDs; 5) PED use perceptions; 6) PED education; and 7) Factors influencing PED use. Questions in each category followed a similar format. First, questions focused on a general topic (e.g., Can you please describe the progression of your athletic career?), supported by probes to elicit more detail. Although each participant was asked the same initial questions, their responses dictated the order and extent of follow-up questioning. The first author conducted all the interviews.

Analysis and interpretation

All interviews were recorded and transcribed verbatim. Reading and re-reading the transcripts allowed immersion in the data and allowed concepts and themes to be developed (Douglas & Carless, 2009). A thematic analysis approach was used, providing flexibility (Braun & Clarke, 2006) and the opportunity to highlight protective factors against PEDs in sport, whilst simultaneously allowing for consideration of outside influencing factors. Issues across the athlete's entire athletic career were explored, enabling investigators to identify the personal and situational factors that may have shaped the participants sports experience, doping perceptions and beliefs.

Data were examined using an established three-stage coding process (Smith et al., 2010). First, after reading each transcript, individual interviews were summarised to highlight the most prominent issues. Second, evidence for each theme was pooled to create a narrative around that theme. Last, thematic groupings were structured around stanzas. Sentences were segmented to highlight phrases that encompassed a specific occurrence or event. This highlighted key opinions, factors and influences in individuals' choices not to use PEDs. The process generated an independent narrative for each participant. These narratives were then pooled to identify common themes, tones and images. Pooled 'commonalities' were then linked to the theoretical constructs that guided the interview structure.

Findings

Five distinct protective variables were depicted in direct quotes and stanzas. They were: i) a strong moral stance against cheating; ii) self-control; iii) an identity beyond sport; iv) resilience to social group pressures and v) secure attachments throughout the lifespan. A pro-doping climate and 'unconscious naivety' were situational risk factors that emerged from the stories of athletes negotiating their way in a developing sporting landscape. Each of the themes is presented in detail with emphasis given to the impact and influence they have had on athletes choosing not to engage in using PEDs.

Strong moral stance against cheating

Consistently, participants were reluctant to use PEDs to enhance performance because it is against the rules and considered as cheating. One participant noted "*It's just playing by the rules. There are rules for a reason*" (Sally, Rugby). Another demonstrated strong

emotion when they said *“For me, it’s cheating. If someone won over me because they took some drug, I would be so pissed off because I got there on my own merit”* (Emma, Field Hockey). Irrespective of personal exposure, all participants conceded that doping had featured in their sport. Indeed, one participant (Tom, Football) volunteered an estimate that 60% of competitors in his sport had used PEDs. Participants also recognised the illegal nature of PEDs, and their potential for serious health and social consequences. All but one participant was opposed to using them for their own performance enhancement, regardless of any coercive situational factors.

The majority of participants held a strong moral stance against the use of PEDs, maintaining that they offer an unfair competitive advantage: *“I feel cheated knowing that my competition could be using. You know you’re not competing against ordinary people; you’re playing people who’ve got something else in them boosting them to play harder”* (Tom, Football). Another participant commented: *“We’ve all trained just as hard; we’ve all got the same goal, so why should someone have this unfair advantage”* (Stacy, Triathlon). Furthermore, a lack of testing outside the competitive season can exacerbate this feeling of injustice: *“People can be taking it through the season, training, and when the competition comes you still have it in you to help you in some way – it’s still cheating”* (Tom, Football).

Doping was widely regarded as cheating and was seen as being morally wrong. Prevention was heightened when this was combined with needing to avoid the guilt and shame that doping might bring. The concept of doping as ‘cheating’ has previously been identified (Bloodworth & McNamee, 2010; Smith et al., 2010) and leveraging issues around the morality of doping use may be a promising avenue for prevention efforts. Indeed, moral values inhibit doping behaviour (Olrich & Ewing, 1999) and our findings support this assertion by demonstrating that PED use can directly conflict with an athlete’s values and beliefs. It is possible that the negative emotional consequences triggered from such use (e.g., guilt and shame) represent strong *post hoc* deterrents that constrain doping by anticipation (Kirby, Moran, & Guerin, 2011; Olrich & Ewing, 1999). Either way, prevention programmes should be future-focussed and foster the internalisation of desirable values of sport, such as playing by the rules, to avoid the guilt and shame that remains with an athlete, even after a doping ban has ended. In addition, an emphasis on the negative thoughts, emotions and feelings that have been found to be associated with doping could serve to deter athletes from initial use. Kirby et al. (2011) highlight that a focus on the social consequences of doping, such as the loss of close friendships with teammates, would deter adoption or even one-off try-outs. This message would be highly relevant to the participants in our study, who emphasised the importance of strong bonds with their fellow athletes and teammates that they wanted to last over the lifespan.

These excerpts emphasise the potential of morality for preventing athletes from doping. Using PEDs is against the rules of sport and athletes holding firm to this belief seem most resistant to the temptation to use them. Our results also support previous claims (Bloodworth & McNamee, 2010; Donovan, Egger, Kapernick, & Mendoza, 2002; Kirby et al., 2011; Petróczki, Mazanov, & Naughton, 2011) that morality is a principal variable in shaping attitudes towards substance abuse in sports. However, it is important to note that not all athletes hold this belief; *“it’s their choice – doesn’t really bother me from a moral point of view...it’s part of the sport”* (Paul, Rugby). The challenge for practitioners and policy-makers is to alter this perception to ensure that athletes and their support network are troubled by rule-breaking in sport and accept responsibility for keeping their respective sport clean. Having said this, we acknowledge that these recommendations are athlete-centric and recognise the profound limitations of this approach where doping behaviour may be ‘actively’ encouraged through the

influential localised structures of sport that surround specific athletes and/or groups of athletes.

Self-control

An individual’s personal control and sense of identity influences their behaviour. Indeed, specific traits and characteristics appear to correspond with an athlete’s personal choice not to use PEDs. Congruent with the findings of Smith et al. (2010), the driven nature of athletes and their self-determination to succeed was apparent in these accounts. One participant stressed: *“I am motivated to make myself better by training hard and putting in the extra miles I need to...I couldn’t live with myself knowing that I was doing better, but not how I wanted to be doing better...”* (Jane, Football). For another, self-control and their ‘desired-self’ protected them from unfavourable social norms, where *“the majority of the teams I have been on have been using PEDs”* (Paul, Rugby). While this participant acknowledged that he had considered using PEDs, he asserted how ‘self’ factors bolstered his resistance because: *“I’m a bit too honest with myself...I like getting my gains through just me...I’ve thought about it, but it’s not me”* (Paul, Rugby). Here, it seems that their prototype for a PED user did not fit with their personal prototype: *“I don’t like the stereotype that goes with it...I’m too proud...I wouldn’t want anyone to know I’d been using...”* (Paul, Rugby). Importantly, the media shaped the prototypes that athletes held regarding athlete-dopers. Furthermore, the negative affective tone that accompanied athlete’s reports about doping incidents seemed to regulate their concerns: *“seeing so many people you look up to on TV; instantly think ‘I want to be you’as soon as you realize that they’ve lied to everyoneit just really really makes me mad”* (Stacy, Triathlon).

Similarly, another participant stressed that even though he knew where to obtain PEDs he didn’t because *“I want to do it myself...I want to compete myself”* (Robert, Triathlon). Extending previous research by Bloodworth and McNamee (2010), the desire to achieve one’s potential through ‘natural ability’ and persistence appears to buffer the risk factors for doping in sport. However, a complex interplay of risk and protective factors operates here. Kirby et al. (2011) found that appreciation of ‘natural ability’ represented a double-edged sword; on the negative side using PEDs represents a risk by proposing to refine natural abilities, while its positive effect deters doping among athletes committed to ‘doing it naturally’.

These apparent discrepancies, and their link to the current study, can be understood in light of another concept that recurred throughout the accounts: resilience. Resilience has emerged in the general social sciences as a key protective factor which buffers and moderates engagement in transgressive behaviours (Werner & Smith, 1992). Resilience can be conceptualised as a dynamic process involving an interaction between both risk and protective factors (Rennie & Dolan, 2010; Rutter, 1987, 1999). High resilience allows an individual to resist a negative behaviour despite adverse experience and/or circumstances (Gilligan, 2000; Rennie & Dolan, 2010). Awareness of natural ability, combined with a certain level of resilience, may be necessary for resilience to be protective against doping. One participant illustrates how personal characteristics that play out in social contexts can be protective: *“I’m too strong-minded to be encouraged or persuaded by anybody to do something. I’m not changed by other people. I’m not incapable of making my own decisions”* (Paul, Rugby). Having the resilience to make a personal choice – even if this goes against social norms – seems important to resisting any temptation to dope: *“I’m not tempted. I’m quite headstrong. I don’t mind not fitting in”* (Robert, Triathlon). Another stated: *“I don’t let peer-pressure affect me. I’m quite strong-willed”* (Stacy, Triathlon). Thus, participants in this study felt able to make decisions independent of the pressures

emerging from their immediate sports network. Importantly, this supports research by [Diacin, Parks, and Allison \(2003\)](#) who found that among 10 male NCAA athletes, multiple athletes stated that they would not take substances regardless of teammates/peers perceptions and others could not cause them to change their minds.

Claiming to be ‘strong-minded’, ‘headstrong’, and ‘strong-willed’ as generalised dispositions enabled the participants to strive for excellence on their own terms. It also prevented them from succumbing to pressure or persuasion to engage in doping, even though the most resistant individuals may have considered it as an option at some point. Paradoxically, such strong-mindedness may also signal a lack of responsiveness to any educational interventions for those who are drug users. Importantly, withstanding social pressure requires a certain level of self-belief to be able to handle ‘not fitting in’. [Lentillon-Kaestner and Carstairs \(2010\)](#) found that inter-personal resilience was less important than resilience to performance issues; in their cyclists the temptation to dope was strongest when they felt they could not obtain their goals without doping. In the present study, participants believed that their goals were achievable without the use of PEDs. This difference in attitude can likely be attributed to the lower competitive level of the athletes in this current study. More specifically, it was clear that none of the participants in the present study aspired to be elite athletes; this likely informed their belief that they could reach their goals without needing to dope. Furthermore, participants had a broader perspective on life beyond sport and had a restricted ‘need’ for elite-level success.

An identity beyond sport

All the participants in the current study spoke passionately about their love of sport. When detailing their sporting life histories, participants typically explained that they were doing their sport through choice and not obligation: “*football is one of the biggest things in my life...something I love doing...not being forced to do it*” (Tom, Football). As one participant notes: “*It is a part of my life. It makes me so happy; it’s not a chore. It’s something I actually love doing*” (Laura, Boxing). Enjoying sport seems to assist in establishing a healthy balance between the demands of being a competitive athlete and maintaining a life outside of sport. Highlighting the centrality of enjoyment to career decision-making, one participant held the philosophy that: “*not enjoying it? Don’t play; easy decision*” (Sally, Rugby). The corollary to this – that doping risk increases when sport ceases to be enjoyable – requires closer investigation. Our participants held a strong belief that sport was a *part* of the individuals’ lives but was not their entire life. This perspective may strengthen the athletes’ beliefs about their autonomy and competence for stepping back when sporting pressures include the possibility of reverting to doping. Recognising the complex nature of doping in sport, one participant conceded that “*if someone’s career is on the line and they have to perform, they may be more susceptible to doping*” (Jane, Football). This theme points to the need for interventions that offset such exigencies or that develop athletes with the tolerance to handle such eventualities; given the nature of competitive sport, the latter seems the more viable option.

Other research – focussing on the sport of cycling – supports this position. In cyclists, the temptation to dope was linked to the place that cycling had in the athlete’s life ([Christiansen, 2010](#); [Lentillon-Kaestner & Carstairs, 2010](#); [Lentillon-Kaestner et al., 2012](#)). More specifically, cyclists with wide interests experienced a drastically decreased sense of pressure and temptation to use PEDs. Therefore, maintaining a life beyond sport appears to be a significant protective factor when the temptation for doping is high. A recent study on sanctioned athletes ([Kirby et al., 2011](#)) also highlighted the protective nature of having a well-defined life outside of

– and a clear view beyond – sport. All the participants in the current study had been to university or were currently at university and it appears that ‘student’ status lowers an athlete’s temptation to dope ([Striegel et al., 2006](#)). However, the present study also highlighted that the university setting houses distinctive pressures around performance and image enhancement. Further investigation is encouraged in this setting.

Secure attachments throughout the lifespan

Participants displayed secure attachments to coach(es), teachers, family members and teammates and noted that their anti-doping attitudes were, in part, shaped by these relationships. Indeed, our findings align with conclusions from the doping literature ([Smith et al., 2010](#)) and the wider social science field, which underscores the importance of having strong social support and attachments to adults with probity.

The powerful influence of coaches with regard to personal decision making was a prevailing theme throughout the interviews. Coaches appear to become increasingly important as the individuals progress in their careers. This importance was largely based on the level of trust and confidence that individuals placed in their coaches; this attachment was generated by coaches providing continued support and instruction: “*Coaches have influenced my decisions massively*” (Paul, Rugby). Coaches strongly influenced notions of effort and sporting commitment and participants often expressed a desire to offer ‘pay-back’ for the efforts coaches made on the athletes’ behalf: “*He [coach] puts so much effort in to it. It makes me want to do well for him – to show him that his effort has paid off*” (Laura, Boxing). Another noted the omnipresence of their coach and the guiding reassurance he provided: “*always there – not just as a football coach, but as someone who would guide you through things as well*” (Tom, Football). Importantly, the influence of the coach was not restricted to a sport-specific context: “*big influence on me...got me back on the straight and narrow*” (Jeff, Boxing). However, one participant speculated on the downside of this level of trust and attachment: “*If I had the relationship I have with my coach and he said to me, ‘This will help’ – because I’ve trusted him for so long and everything he’s said has worked for me – I might use*” (Laura, Boxing). Notably, similar speculation was observed by [Diacin et al. \(2003\)](#), with an athlete suggesting that if they had reservations about using PEDs, they would be inclined to take them anyway in order to satisfy the coach. In this instance, misplaced trust appears to be at play.

These honest accounts provide significant insight into a critical element of anti-doping efforts; the influence of the coach – and other actors – in shaping athlete’s attitudes and decision making processes throughout their athletic careers. Our study extends the research of [Diacin et al. \(2003\)](#) which identified that amongst NCAA male athletes, coaches were one of the primary shapers of perceptions of the use of PEDs. While the coach’s influence is regularly asserted and supported by anecdotal accounts, we noted an absence of evidence supporting this claim – in either direction. Therefore, this study provides important evidence validating current calls for greater engagement with coaches in anti-doping ([Backhouse & McKenna, 2012](#)). Moreover, the strength of the impact identified in the current study justifies renewing the energy placed on involving coaches within anti-doping efforts. Coaches did, albeit rarely, send strong pro-doping signals to their athletes; the following excerpt highlights the negative behaviour modelling that can occur: “[The Coach] *let the players fake a head injury so they don’t have to take a drugs test.....shut the lights off and everyone bolted over the walls...coach did this to avoid players getting tested*” (Paul, Rugby). The same participant then suggested that his coach was “*against it, but he knows it goes on...coaches can encourage the*

use of PEDs". Clearly, such behaviours would not present a strong deterrent. These findings highlight the need to reduce coaches' passive or active support for drug use.

Our study also captured the instrumental role that teachers can play in enhancing the protective factors and reducing the risk factors for doping in sport. This example illustrates how teachers reinforce a moral code: "Teachers tell you that you always have to play by the rules" (Sally, Rugby). One participant indicated that they had discussed the moral issues around doping in sport in a Physical Education class when aged 14 (George, Field Hockey), and another mentioned that: "PE had to cover PEDs a little bit as part of the syllabus" (Stacy, Triathlon). PE teachers, because of their engagement with athletes, were particularly noted for being able to shape values: "[my] opinion/personal stand against doping was shaped by PE teachers" (George, Field Hockey); this point was then reinforced by identifying how the PE teachers were one of few adults who would express a guiding voice to adolescent athletes: "not sure where it would have come from without them" (George, Field Hockey). This suggests a role for initiatives in initial teacher training and in-service activities. Further, with the consensus that prevention programmes are most effective when targeted at young people and adolescents (Backhouse, McKenna, & Patterson, 2009); this highlights the school sector as a priority area for anti-doping efforts. As far as we are aware, identifying the power of particular teachers in the development of anti-doping attitudes in adolescents is a novel finding and further research is warranted to identify the perceptions of their role in anti-doping.

Most participants identified that their parents played a positive and supportive role in their participation in sport, while also encouraging a healthy and balanced attitude towards competition and assessment of performance: "Family has always been my biggest support system...they are massive for me...I value what they have to say about how I've played" (Jane, Football). A secure stable attachment with one or both parents protects children who are at high risk of offending and using illegal drugs (Garnezy, 1985). While participants in the current study spoke fondly of their parents and their relationships, only two (Emma, Field Hockey & Robert, Triathlon) suggested that these bonds directly affected their decision to refrain from using PEDs. In previous work in sport, secure attachments with parents – and with coaches and more experienced athletes – have been found to allow athletes to remain goal-directed in the face of stress and adversity in their sport (Finn & McKenna, 2010).

Teammates also provided a strong source of support in the participants' accounts. As careers progressed, teammates seem to have become increasingly influential and instrumental. Most participants talked about positive, friendly, and encouraging relationships that enhanced the overall enjoyment of sport: "I've always had a really close network of friends through what I've been playing, which is really important to me" (Sally, Rugby). Indeed, teammates develop strong family-like attachments: "Teammates were a close group – kind of your family. They just push you through" (Emma, Field Hockey). Additionally, teammates can have a positive impact on thoughts and attitudes towards engaging in the use of PEDs: "I know the guys I'm training with wouldn't touch the stuff either; there's honest competition there" (Robert Triathlon) and "my teammates never used, so I never thought about it" (George, Field Hockey). In this context, there may be much mileage in asserting that clubs and/or sports uphold positive anti-doping cultures.

Importantly, an absence of strong attachments and social support can also lead to being tempted to dope or to turning a blind eye to it. The decision to dope can lead to internal conflict if this behaviour does not align with values and beliefs; ambivalent and/or ambiguous beliefs and values seem to heighten the need for care and for vigilance to avoid drug use even when opponents, or

teammates, are suspected, as well as known users: "if you aren't careful you can easily get in to it because every time you're playing they've got extra energy in them, especially in the second half and towards end of game and they nearly talked me in to do it" (Tom, Football). However, this participant questioned the behaviour by asking "why would you put yourself in that risk if you aren't getting paid?" (Tom, Football). The strong moral stance of this participant gave rise to a confrontation: "if I said anything they wouldn't be playing on the team anymore. I didn't have the best friendships on the team so I didn't want to make it worse" (Tom, Football). Consequently, this doping behaviour went unreported because of his conflicting desire for both probity and social acceptance. This finding further underlines the complexity of the decision making that can surround athletes faced with an environment or culture where doping takes place. They also lead us to consider the pernicious nature of drug-taking in sports valuing friendship and loyalty.

A key finding of the present study was the realisation that for some of the participants, these interviews represented the first time they had thought about their personal stance towards PED use. The interviews provided a focussed space for the participants to identify how their opinions, beliefs and attitudes on this issue had formed and who helped to shape them. Few athletes recalled having direct conversations about PEDs with their influential others, suggesting that their strongest perspectives were formed vicariously, probably by observing others' behaviours, rather than through proactive anti-doping initiatives: "I don't actually know how my opinion has been shaped, but it's quite a strong one" (Jane, Football). Others could recall clear examples of powerful effects from specific individuals, including their PE teachers, their 'up-bringing' – suggesting family and community influences – and their teammates: "probably been shaped by the way I was brought up. The attitudes of my teammates have made me more against it" (Robert, Triathlon).

The protection afforded by secure and often long-term attachments warrants further investigation because although some studies have attempted to identify the level of pressure athlete support personnel place on athletes to engage in PED use (Lentillon-Kaestner & Carstairs, 2010), none have specifically examined how influential others shape athletes' doping attitudes or behaviours. Consistent with recent developments in behaviour change (Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011), the findings of this study support the need for a rethink from an individually driven approach, dominated by detection-deterrence processes and compliance education, to one that acknowledges the potential pressures – and mechanisms – arising from the environment and support networks surrounding the athlete.

Unconscious naivety

Although this is not a directly protective factor, it is important to highlight the overall lack of experience and personal encounters with PEDs and PED education in this group of athletes. Of the ten participants, nine admitted to being fairly naïve with regard to PEDs in their respective sports, as well as in sport in general. Thus, their accounts relate as much to logic models (Funnel & Rogers, 2011) as to accounts of direct experience. In the present study, experiences in early life with clear and reinforced moral codes around fairness and cheating emerged. Further, no participants here reported exposure to formal anti-doping education. There was also a blanket admission of not being aware of the banned substances – awareness extending merely to knowing that there was such a thing as a 'banned list'. While this is concerning, it also highlights the potency of the social and personal factors that we have identified; they combine to support what

seem to be robust and well-established anti-doping attitudes and practices, even in the absence of direct exposure to anti-doping interventions.

At the same time, lack of education heightens any risk of inadvertent doping and these participants held limited working knowledge of doping and anti-doping. Moreover, for some of the participants in this study, this was the first time they had ever discussed the topic: *“I don't know anything about PEDs. I'm quite ignorant”* (Sally, Rugby). This is consistent with recent research (Johnson, Butryn, & Masucci, 2013) showing that amongst elite triathletes, the interview research process in which they participated was their first opportunity to openly discuss doping. For one of the individuals in the current study, their lack of awareness and absence of previous doping conversation was an alarming realisation: *“I've never had proper education about it at all...it's actually surprising...I'm now in the Super League and I've still not been made aware”* (Jane, Football). Whilst this participant acknowledged receiving an anti-doping leaflet and mentioned that occasional testing took place in her sport, she conceded that *“no one would know whether something they're taking is illegal...I've heard we can't take Lemsip but no one has ever told us”*.

On the other hand, one participant who had been *“sat down and talked to about it”* (Paul, Rugby) said that this was not sufficiently powerful to change opinions or perceptions. Self-education was more common and typical sources of information were the internet, the media and fellow athletes. Indeed, this lack of direct anti-doping education and reliance on self-education confirms previous research (Johnson et al., 2013; Lentillon-Kaestner et al., 2012; Posiadała, Smorawinski, Pluta, & Andrzejewski, 2009; Sas-Nowosielski & Świątkowska, 2007; Wanjek, Rosendahl, Strauss, & Gabriel, 2007) indicating that most of athletes' knowledge comes from sources of questionable provenance (e.g. television and internet), which again puts the athlete at risk of inadvertent doping. When stressing the importance of education, one participant suggested it could be covered in school-based PE to ensure that it is *“talked about more”* (Tom, Football). This strategy would certainly extend the reach of prevention campaigns and also ensure that key messages were delivered to future athletes at an appropriate developmental stage (Backhouse et al., 2009).

Conclusion

The purpose of this study was to qualitatively explore the protective factors which lessen the likelihood of athletes doping in sport. By exploring athletic experiences, the study has demonstrated that static and dynamic factors can help athletes refrain from doping in sport. These protective factors may be important when ‘tipping points’ are experienced by athletes. In the present study, participants felt they had the choice to refrain from doping in sport because they had a broader perspective on life beyond sport. Key attachments in their lives – including youth and childhood – also supported the athletes in the pursuit of their broader goals. Thus, our study contributes new insight into the attributes that might protect athletes who may otherwise be at risk of doping to find resources, support or employ self-regulation strategies that allow them to remain goal-directed during critical periods. Working from the assumption that more athletes choose not to use PEDs than choose to use PEDs, greater efforts need to be taken to identify existing protective factors to ensure targeted prevention programmes. Ultimately, understanding why the majority of athletes do not use PEDs is essential for better understanding of why others do.

In light of these findings, there is a need to consider the direct and indirect mechanisms that make these factors protective. For example, it is important to identify which protective factors act

directly on risk factors (and vice versa), which moderate or buffer other risk factors and which impact directly on doping behaviour. Future studies should assess both risk and protective factors to provide more insight into the exact mechanism(s) of their interactions.

Our research also presents important practical implications for sport coaches, sports psychologists, policy makers, anti-doping practitioners and athletes. The apparent lack of education and awareness expressed throughout the athletes' accounts is concerning, yet not surprising. Considering that both personal and situational factors are influential in shaping athletes' behaviour towards doping, both warrant consideration when planning anti-doping programmes. For example, young athletes can be encouraged to develop self-regulatory skills to handle social pressures that might come from coaches, media, teammates, sponsors and other external sources. There may be scope for this type of intervention to be incorporated into PE curricula in schools, or perhaps as part of extra-curricular provision, where talented athletes may proliferate. In relation to situational factors, the coaches and teachers could be educated on optimising teaching and coaching practice in order to foster effort and task persistence rather than encouraging a ‘win-at-all’ costs mentality. Furthermore, targeting interventions on personally meaningful experiences and concerns is an important way of ensuring engagement in educational efforts (Perkins, 2011).

As with all research, this study needs to be interpreted in light of its limitations. First, this study is based on athletes' self-reports and it is possible that they may not have been completely honest in their contributions. However, steps were taken to minimise the likelihood of generating socially desirable responding by utilising a convenience sample and discussing why athletes *do not* use PEDs. We acknowledge that the findings of this study may not be representative of the broader population because participants were self-proclaimed non-users from a single region of the United Kingdom, which has its own unique contextual characteristics. As a result, the findings of this study are context-bound and are not intended to be representative of all non-user athletes nor generalisable to all of the United Kingdom, as few contexts can be closely replicated. Transferability of the findings to other contexts and populations is therefore left to the reader.

A further limitation of the present study was that we have made no distinctions between the attitudes and experiences amongst males and females across these sports. This is a common limitation in the literature and we are currently undertaking context-specific research to focus on one sport to address the limitation of aggregate reporting across sports. Finally, it is important to note that none of the participants in this study had ever personally used PEDs, nor did they intend to in the future. However, a number of the participants knew of individuals who had used PEDs, whilst most participants reported having the opportunity to use PEDs themselves. In this context, the experiences they have contributed provide valuable insights in to what protects athletes from using PEDs in sport.

Despite the limitations, there is much to be gleaned from this study. Our research suggests that for anti-doping efforts to be effective, they need to join with other organisations to address the long, mid- and short-term origins of doping rather than concentrating on behaviours resulting from it. Therefore, we need to critically review sport governance structures to fully understand the context within which sport is being played. Also, targeting the influencing factors that lead to doping is essential and likely to have more powerful and widespread effects than is produced by focusing ‘solely’ on policing and punishing drug use. For this to happen, greater resources need to be directed at research and prevention to deliver better practice in the field.

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