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

Kelsey Erickson, Jim McKenna & Susan H. Backhouse*

Carnegie Clean Sport Research Group

Institute for Sport, Physical Activity and Leisure

Leeds Beckett University

*Address for corresponding author: Fairfax Hall 217, Headingley Campus, Leeds Beckett University, Leeds, LS6 3QT, UK

S.Backhouse@leedsbeckett.ac.uk

Abstract

Objective: To explore the protective factors against performance enhancing drug (PED) use in sport via a qualitative analysis of athletes' lifelong athletic careers. *Method:* Ten competitive athletes (M=5, F=5) representing five different sports (field hockey, boxing, football, triathlon, rugby league) were recruited through convenience sampling to undertake a semi-structured interview. *Method:* Verbatim transcripts were analyzed using an established three-stage coding process which identified the common themes through the narratives. *Results:* Personal and situational protective factors were identified in the athletes 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. Secure attachments across the lifespan, which facilitated the promotion of moral decision making and assisted in the development of anti-doping attitudes, was collectively identified as a situational factor. When systemic factors, such as a pro-doping climate, came into play 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 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 behavior, doping in sport cannot be prevented by focusing on the individual athlete alone; contextual factors beyond the athlete's control also impact on this behavior. Thus, a paradigm shift beyond an athlete-centered approach to anti-doping is warranted.

Keywords: anti-doping; prevention; identity; morals; athlete development; protective factors

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 – our understanding of this transgressive behaviour is still emerging and policy and practice is not informed by the same 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 & Petróczi, 2013; Bloodworth & McNamee, 2010); career transitions and periods of instability (Mazanov, Huybers & Connor, 2011; Lentillon-Kaestner & Carstairs, 2010); previous use of nutritional supplements (Backhouse, Whitaker & Petróczi, 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); and the influence of peers, parents, cultural norms and sporting culture (Pappa & Kennedy, 2012; Smith et al., 2010).

Additionally, 'risky' personality factors include low ratings of self-esteem, integrity, confidence and high trait anxiety (Petróczi & Aidman, 2008); dissatisfaction with one's appearance, impulsiveness, a 'win-at-all-costs' attitude (Mitic & Radovanovic, 2011); dispositional risk taking, and sensation seeking (Petróczi & Aidman, 2008); and the fear of failure (Pappa & Kennedy, 2012). Emerging from this literature is a general agreement that no single factor predisposes an individual to use PEDs in sport; doping is a complex issue influenced by multiple risk factors which can act individually, collectively and/or in sequence to support the decision to dope.

Despite these 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 serve to moderate, buffer or insulate against risk (Rennie & Dolan, 2010; Jessor et al., 1995). Therefore, an expanded understanding of their range and role could play 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 (AASs). Protective factors included beliefs around undesirable side effects, getting caught, morality, AAS education, prohibitive costs, stigma, fear of needles, lack of awareness, and decreased 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 actual and future doping behaviours (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 and establishing strategies to capitalise on these points is fundamental for improving doping prevention (Petróczi & Aidman, 2008). Indeed, identifying the basis for athletes' choices not to use PEDs has the potential to reveal intervention points and develop the evidence base which will inform prevention programming. Thus, the overarching aim of this study is to enhance current understanding of why athletes refrain from engaging in PED 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

Utilizing a convenience sampling approach, ten athletes – one male and one female for each of the sports of football, rugby, field hockey, boxing and triathlon were interviewed. This sample size was based on the premise that thematic saturation of information can occur from as few as six interviews (Guest et al., 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. 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 (i.e. Can you please describe the progression of your athletic career?), supported by probes to elicit more detail. Although participants were asked the same questions, their responses dictated the order and extent of follow-up questioning. The first author conducted the in-depth 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 summarized 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, which were then pooled to identify common themes, tones, and images. These themes were then linked to the theoretical constructs that guided the interview structure.

Findings

Five distinct protective factors 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 on choosing not to engage in using PEDs.

Strong moral stance against cheating

Consistently, participants were reluctant to utilise PEDs to enhance performance because it is against the rules and considered 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 features in their sport. Indeed, one participant *(Tom, Football)* estimated that 60% of competitors in their 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 and considered them to 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 the need to avoid the guilt and shame that doping would bring. The concept of doping as 'cheating' has previously been identified (Smith et al, 2010; Bloodworth & McNamee, 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 be in direct 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 for doping (Olrich & Ewing, 1999; Kirby, Moran & Guerin, 2011). Either way, prevention programs should be future focused and foster the internalization of desirable values of sport, such as playing by the rules, to avoid the guilt and shame that remains with an athlete, even after their doping ban is served. 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 and colleagues (2011) highlight that a focus on the social consequences of doping, such as the loss of close friendships with teammates, would be beneficial. This message would be highly relevant to the participants in our study, who emphasized the importance of strong bonds with their fellow athletes and teammates over the lifespan.

These excerpts emphasize the potential role of morality and its place in preventing athletes from doping in sport. Using PEDs is against the rules of sport and athletes holding firm to this belief seem to be better able to resist the temptation to use them. Our results also support previous claims (see Donovan et al., 2002; Kirby, Moran & Guerin, 2011; Petróczi, Mazanov & Naughton, 2011; Bloodworth & McNamee, 2010) 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 do take responsibility for keeping their sport clean. Having said this, we do acknowledge that these recommendations are athlete-centric and we recognise the limitations of this approach under conditions where doping behaviour is actively encouraged through the organisational structures of the sport or through the normalisation process. Therefore, whole teams and sporting organisations need to buy into this effort if prevention is to occur.

Individual differences: 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 Smith et al's (2010) findings, the self-driven nature of athletes and their 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 they had considered using PEDs, they asserted that they had resisted 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).* Media emerged as important for shaping the prototypes that athletes held regarding athlete-dopers. Furthermore, the affective tone of reports about doping incidents seemed to regulate athletes 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 everyone… …it 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), a desire to achieve one's potential through 'natural ability' and persistence appears to act as a buffer to the risk factors for doping in

sport. However, a complex interplay of risk and protective factors operates here. Kirby, Moran and Guerin (2011) found that appreciation of 'natural ability' was a double-edged sword; on the one hand using PEDs represents a risk by proposing to refine natural abilities and on the other, it deters doping for those committed to a 'doing it naturally' approach.

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 (Rutter, 1987, 1999; Rennie & Dolan, 2010), allowing an individual to resist a negative behaviour despite adverse experience and in the face of adverse 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 imposed by their teammates and surrounding personnel. 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', 'head strong', and 'strong willed' 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. Problematically, 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-confidence 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 competitive level that the present athletes were competing at. More specifically, it was clear that none of the participants in the present study aspired to be elite athletes, which likely informed their belief that they could reach their goals without needing to dope. Furthermore, participants had a broader perspective on life beyond sport.

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 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. 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.

Research focusing on the sport of cycling supports this position. In cyclists, the temptation to dope was linked to the place that cycling has in the athlete's life (Lentillon-Kaestner, Hagger & Hardcastle, 2012; Lentillon-Kaestner & Carstairs, 2010; Christiansen, 2010). 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, Moran & Guerin, 2011) also highlighted the protective nature of having a well-defined life outside of 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 and 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 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 responsible adults.

A common theme throughout the interviews was the powerful influence of coaches with regard to personal decision making, which appears to become increasingly important as the individuals' progress in their careers. This was largely based on the level of trust and confidence the individuals placed in their coaches, which resulted from the attachment generated through 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': "*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 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 does not seem to be 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, Parks and Allison (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.

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 Diacin, and colleagues (2003) research identifying that amongst NCAA male athletes, coaches were one of the primary shapers of athletes' perceptions of the use of PEDs. While the coach's influence is regularly asserted and supported by anecdotal accounts, the evidence supporting this claim is absent. This study provides important evidence validating current calls in the literature 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 appear to send strong signals to their athletes and the following excerpt highlights that negative behaviour modelling also occurs: "[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 their coach was *"against it, but he knows it goes on…coaches can encourage the use of PEDs" (Paul, Rugby)*. Clearly, these behaviours would not present a strong deterrent and our findings suggest that the 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 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 programs are most effective when targeted at young people and adolescents (Backhouse, McKenna & Patterson, 2009) this highlights the school sector as a priority area where anti-doping efforts might be prioritised. As far as we are aware, the potential power of particular teachers in the development of anti-doping attitudes in adolescents is a novel finding and further research is warranted.

Most participants identified that their parents played a positive and supportive role in their participation in sport, as well as 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 (Garmezy, 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 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 the 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. Ultimately, the decision to dope can lead to internal conflict if this behaviour does not align with values and beliefs; ambivalent beliefs and values seem to heighten the need for care and for vigilance to avoid drug use: *"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 this 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 probity and social acceptance were in conflict. This findings further underlines the complexity of the decision making that can surround athletes faced with an environment or culture where doping takes place.

A key finding of the present study was the realization that for some of the participants, these interviews represented the first time they had stopped to think about their personal stance towards PED use. The interviews provided a focused space for the participants to identify how their opinions on this issue had formed and who helped to shape them. Few recalled having direct conversations about PEDs with their influential others, suggesting that their strong opinions 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 of specific individuals, like their PE teachers, their 'upbringing' – 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 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 (i.e., Lentillon-Kaestner & Carstairs, 2010), none have specifically examined how influential others shape athletes' doping attitudes or behaviours. Consistent with recent developments in behaviour change (e.g., Marteau et al., 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 applied by 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 & Rodgers, 2011) as to accounts of direct experience. Further, exposure to formal anti-doping education was lacking across all the participants interviewed. 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.

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 they participated in served as their first opportunity to openly discuss the issue of doping. For one of the present individuals, their lack of awareness and 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 that they had received an anti-doping leaflet and occasionally testing took place in their sport, they 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 (see Sas-Nowosielski & Swiatkowska, 2007; Wanjek et al., 2007; Lentillon-Kaestner, Hagger & Hardcastle, 2012; Johnson, Butryn & Masucci, 2013; Posiadala et al., 2009) indicating that most of athletes' knowledge comes from questionable sources (i.e. television and internet) and these self-selected sources are likely to be of variable provenance, 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 help achieve a greater reach of prevention campaigns and also ensure that key messages were delivered to future athletes at an appropriate developmental stage (Backhouse, McKenna & Patterson, 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 and these protective factors might 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 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 in order to ensure targeted prevention programs. Ultimately, understanding why the majority of athletes do not use PEDs can help us better understand 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 personality and systemic factors are influential in shaping athletes' behaviour towards doping, both warrant consideration when planning anti-doping programs. For example, young athletes should be encouraged to develop self-regulatory skills to handle any social pressures that might come from coaches, media, teammates, sponsors and other external sources. There is scope for this type of intervention to be incorporated into PE curricula in schools. Moreover, the perception that none of the participants could associate with their own

images of drug users' or of drug-using prototypes supports the assertion of Whitaker and colleagues (2012) that considering athletes' future-selves and possible-selves might be a beneficial avenue for future research and intervention. Furthermore, focusing interventions on personally meaningful experiences and concerns is an important way of ensuring engagement in any 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 responses to the questions posed. However, steps were taken to minimize the likelihood of socially desirable responding by utilizing 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 one 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 generalizable to all of the United Kingdom, as the specific context cannot be duplicated. 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 the unique sports studied. This is a common limitation in the literature and we are currently undertaking context specific research where we are focusing our investigations on one sport in an attempt 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 and participants had been provided with the opportunity to use PEDs themselves.

Therefore, it is believed that their experiences 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 root of the doping problem rather than concentrating on behaviours resulting from it. Therefore, we need to critically review sport governance structures in order to fully understand the context within which sport is being played and lived. Also, targeting the influencing factors that lead to doping is essential and likely more effective than focusing directly on policing and punishing drug use. To enable this to happen, greater resources need to be directed at research and prevention in order to enable better practice in the field.

References

Backhouse, S. H., Atkin, A., McKenna, J., & Robinson, S. (2007). International Literature Review: Attitudes, Behaviours, Knowledge and Education – Drugs in Sport: Past, Present and Future. In WADA (Ed.), *Social Science Research Fund*. WADA: Leeds Metropolitan University.

Backhouse, S. H., & McKenna, J. (2012). Reviewing Coaches' Knowledge, Attitudes and Beliefs Regarding Doping in Sport. *International Journal of Sports Science & Coaching, 7*(1), 167-176.

Backhouse, S. H., McKenna, J., & Patterson, L. (2009). Prevention through Education: A Review of Current International Social Science Literature; A focus on the prevention of bullying, tobacco, alcohol and social drug use in children, adolescents and young adults. World Anti-Doping Agency.

Christiansen, A. K. (2010). "We are not sportsmen, we are professionals": professionalism, doping and deviance in elite sport. *Int. J. Sport Management and Marketing, 7*(1/2), 91-103.

Diacin, M. J., Parks, J. B., & Allison, P. C. (2003). Voices of Male Athletes on Drug Use, Drug Testing, and the Existing Order in Intercollegiate Athletics. [Article]. *Journal of Sport Behavior, 26*(1), 1.

Donovan, R. J., Egger, G., Kapernick, V., & Mendoza, J. (2002). A conceptual framework for achieving performance enhancing drug compliance in sport. *Sports Medicine, 32*(4), 269-284.

Funnel, S. C., & Rogers, P. J. (2011). *Purposeful Program Theory: Effective Use of Theories of Change and Logic Models*. San Fransisco: Jossey-Bass.

Garmezy, N. (Ed.). (1985). *'Stress-resistent children: The search for protective factors'*.

Gilligan, R. (2000). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children and Society, 14*, 37-47.

Johnson, J., Butryn, T., & Masucci, M. A. (2013). A focus group analysis of the US and Canadian female triathletes' knowledge of doping. *Sport in Society: Cultures, Commerce, Media, Politics*. doi: 10.1080/17430437.2012.753522

Marteau, T. M., Ogilvie, D., Roland, M., Suhrcke, M., & Kelly, M. P. (2011). Judging Nudging: can 'nudging' improve population health? . *British Medical Journal, 342*.

Olrich, T. W., & Ewing, M. E. (1999). Life on steroids: bodybuilders describe their perceptions of anabolic-androgenic steroid use period. *The Sport Psychologist, 13*(3), 299-312.

Perkins, D. (2011). 40 Years of Teaching Thinking: Revolution, Evolution, and What Next? , from http://www.gse.harvard.edu/news-impact/2011/10/40-years-of-teaching-thinking-revolution-evolution-and-what-next/#ixzz2hzOyrem9

PosiadaŁA, D., SmorawiŃSki, J., Pluta, B., & Andrzejewski, M. (2009). Sport communities and organizations as sources of anti-doping eduation and places of interest development of students of university school of physical education in Poznan. *Studies in Physical Culture & Tourism, 16*(3), 291-299.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry, 57*, 316-331.

Rutter, M. (1999). Resilience concepts and finding: Implications for family therapy. *Journal of Family Therapy, 21*(2), 119-144.

Sas-Nowosielski, K., & Świątkowska, L. (2007). The knowledge of the world anti-doping code among Polish athletes and their attitudes towards doping and anti-doping policy. *Human Movement, 8*(1), 57-64.

Striegel, H., Simon, P., Frisch, S., Roecker, K., Dietz, K., Dickhuth, H. H., & Ulrich, R. (2006). Anabolic ergogenic substance users in fitness-sports: a distinct group supported by the health care system. *Drug Alcohol Depend, 81*, 11-19.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High-risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.