Why Athletes say No to Doping?
Examining the reasons underpinning athletes' decision not to dope

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Executive Summary

Based on WADA's objective and remit, a research focus on the reasons why athletes' chose not to use Performance Enhancing Drugs (PEDs) is a sensible focus. Of course, these motives are likely to be diverse and complex. This project was designed to examine this complexity, focusing on the major reasons why athletes decide against PEDs. A biopsychosocial approach was employed with a consideration of physical factors (e.g., performance advantage or risk), psychological characteristics (e.g., risk taking behavior), and the athlete's social environment (e.g., the advantages and rewards of PEDs, the opinion and influence of significant others, the social opinions within particular sports).

The first phase of the project employed a qualitative methodology, using one-to-one interviews with a cohort of athletes sampled from different types of sports, to capture a rich account of the factors underpinning athletes' decision-making about PEDs. A combined inductive-deductive analysis was conducted which allowed us to listen to the voices of the athletes in a grounded style during the inductive phase while the deductive phase enabled us to test the data from the interviews against the existing body of research. The results of this study provided a rich and detailed picture of the factors athletes consider in making decisions and arriving at their viewpoint about PEDs. Central to this was the importance of Personal Ethical Standards, and athletes' view that PEDs constituted cheating in their sport, and irrespective of anti-doping testing and sanctions, this moral stance guided their decision about PEDs. In contrast, participants did not consider Anti-doping Education, Anti-doping Testing or Long-term Health Implications as significant influencing factors. Instead, the importance of significant others and the social environment (e.g., the athletes' training group) emerged as important factors that influenced the athletes' decision-making. Differences between sports and age cohorts also emerged during this phase.

Extrapolating from this data, a self-report questionnaire was developed to test for factors used and weightings applied. In Phase 2, this sample was administered to a larger sample of athletes in order to present a more generalizable conclusion. The results of this quantitative study support the findings from Phase 1 with Personal Ethical Standards emerging as the most significant factor in athletes' decision-making. As found in Phase 1, Anti-doping Education, Anti-doping Testing, and Long-term Heath Implications were less likely to influence an athletes' decision about PEDs. As was found in the qualitative phase, differences in responses were evident between sports, gender and age cohorts. This questionnaire can now be used with other populations and sports to extend and enrich the picture through consideration of their own athletes.

The results of this study have important implications for WADA and those charged with the fight against doping in sport. The emphasis placed by the athletes on Personal Ethical Standards, Psychosocial Influences, and the Influence of Significant Others is interesting and should help inform the content, strategy and dissemination of anti-doping policy.

Outcomes of the Project

1) Athletes' personal ethical standards and morals play an important role in their decision not to dope.
2) The athletes' training environment plays an important protective role in anti-doping; the influence of significant others, notably the opinions of family and coaches, is a significant influence on their decision not to dope.
3) Current anti-doping policy (including education, testing, and sanctions) are not seen as the determining factor in athletes' decision about doping.

Application of Findings in the field of Anti-Doping

- Anti-doping education needs to be multifaceted and comprehensive beyond the traditional emphasis on testing, sanctions, and health implications.
- An increased emphasis on personal ethical standards and moral beliefs underlying attitudes to doping would seem a useful way to reduce susceptibility to PED usage.
- Reflecting the previous point, the impact and importance of the athletes' psychosocial environment should be considered and used as a basis for intervention.
- Differences in attitudes and intention to behave across sports should be considered in the development and implementation of anti-doping policy and strategy.
- Educational program that deal with the morality of PED usage are important. This might be especially important for younger athletes.
- Educational program should target the broader psychosocial group to include parents, coaches, and significant others.

Introduction

At first consideration, all would seem to be well with the current situation in anti-doping. Testing and associated sanctions are generally supported as a means of discouraging performance enhancing drug (PED) use, with most surveyed seeing the current penalties as largely appropriate (Dunn, Thomas, Swift, Burns & Mattick, 2010; Waddington, Malcolm, Roderick, & Naik, 2005). Furthermore, the social impact of "shame" experienced is viewed as another significant deterrent (Bloodworth & McNamee, 2010). Thus, even though the stance of anti-doping is sometimes questioned on moral grounds of proportionality (i.e., too much emphasis on too few users; cf. Kayser, Mauron & Miah, 2007), there seems to be a strong and apparently consistent resistance to such usage and support of the systems used to police against it.

At this first view, there seems to be a solid understanding of what is going on and how to control it. However, more detailed examination reveals the deeper complexities of the situation. For example, whilst many athletes report satisfaction with their own environment and national situation, they perceive laxity within systems elsewhere in the world as a major problem (Bloodworth & McNamee, 2010). Indeed, an over-estimate of drug usage may well be a correlational factor with intention to use in some individuals. Attitudes to other, albeit legal, ergogenic aids such as nutritional supplements or even specific medically endorsed, hormonal treatments represents another important facet of the mental model which underpins athlete thinking about usage, those who use, and their own personal intentions (Mazanov, Petróczi, Bingham & Holloway, 2009; Petróczi, *et al*., 2008). However, an obvious limitation of these data is that they are often not based on elite samples, so further work is indicated if the interesting possibilities are to be confirmed. As such, it would be valuable to see if the decision to not use PEDs is impacted or moderated by such perceptions. If so, and based on subsequent data with genuine elites (e.g., Moran,

Guerin, Kirby & MacIntyre, 2008), there are strong indications that education based on accurate and empirically justified information could prove a strong feature of a deterrent program.

A complex biopsychosocial dynamic is also apparent in the effects which PEDs may have on users, with expectancy (e.g., Maganaris, Collins & Sharp, 2000; McClung & Collins, 2007), social interaction (e.g., Sharp & Collins, 1998) and motivation (e.g., Smith, Hale, Hurst & Collins, 2001) all being shown to differentiate in terms of both outcomes of use and psycho-behavioural concomitants. Given the strength and robustness of these impacts, a multifactorial (bio, psycho, and social) evaluation is strongly indicated when examining the reasons against usage. Further support comes from evidence for the mediating role of social desirability between attitudes toward and susceptibility to engage in PED usage (Gucciardi, Jalleh & Donovan, 2010). From a psychosocial perspective, the “protective” or “encouraging” influences of team dynamics against PEDs have also been demonstrated (cf. Lentillon-Kaestney & Carstairs, 2010). Furthermore, the role of the coach as mediator of the athlete’s social environment and the influences therein. Once again, however, there is a clear need for further work although reviews clearly show the extra potential insights which such a focus could offer (Backhouse & McKenna, 2012). Finally, the coach’s viewpoint may offer an additional perspective, answering some of the concerns expressed about the limitations of self-report data which, to date, has provided the majority of data on PEDs (Brand, Melzer, & Hagemann, 2011). In simple terms, there is clear evidence for the complex interactions which seem to be associated with uptake of use or even consideration to start, all of which must sensibly be encompassed within any global anti-doping strategy (cf. Stewart & Smith, 2010).

A number of reasons underpinning decisions not to dope have been found in the literature (e.g., Ehrnborg & Rosén, 2009). These include ‘doping is cheating and not fair play’, the medical risks associated with doping, the perceived impact of

doping on performance in particular sports, and the impact which doping has upon the image of a sport. Despite this understanding, the testing of these ideas amongst elite athletes has been scarce and the predominant emphasis has been on reasons why athletes dope rather than on the reasons that athletes don't.

Overview of the Research

Reflecting the issues highlighted in the previous section, the purpose of this research was to examine the reasons athletes cite for not using PEDs. Based on the complexity of this issue we anticipated that reasons *not* to use PEDs might vary against a number of key factors including age, sport, level of performance. As such, this research focused on athletes from a broad spectrum of sports and of different ages but, given the important impacts demonstrated for psychosocial milieu, delimited the examination to those from a British and Irish culture.

There is a dearth of studies that address the attitudes of athletes towards taking PEDs, especially the reasons underpinning their decision *not* to dope. Of course, access to authentic elite groups of athletes is difficult but important if insights into the decision making of this cohort are going to be gained. Furthermore, given the sensitive nature of the topic, eliciting rich and honest responses is a challenge to those conducting research in this area. Reflecting both these issues, this research was conducted in two phases.

In Phase 1, detailed examination of the reasons athletes' cite for not using PEDs, and checking for the range described above, was facilitated through one-to-one semi-structured interviews with a variety of different elite level athletes and coaches. The majority of studies to date have employed questionnaire or survey tools to elicit information but these are not appropriate measures to gain rich or thick data (Bloodworth & McNamee, 2010). As such, interviews were employed to gain a rich appreciation of the decision-making of athletes about PEDs. Interviews were

conducted by a researcher, independent of both WADA and the athletes' NGB to ensure that the participants felt comfortable responding to questions about this sensitive issue.

In Phase 2, a self-report questionnaire was developed based on the qualitative findings of phase 1. This questionnaire was then employed with a larger sample of British and Irish athletes to test for the factors used and the weightings applied. Incorporating more sports and a wider range of experience allowed us present more generalizable conclusions.

Phase 1. Qualitative Investigation of the Reasons Athletes' Cite for Saying NO to Doping

Design

As the aim of this study was to explore athletes' personal experiences of decision-making about PEDs, a phenomenological approach was employed. Data were collected using semi-structured interviews and analyzed using Interpretative Phenomenological Analysis (IPA; Smith, 1996), as this approach allows rigorous exploration of idiographic subjective experiences and social cognitions. Essentially, IPA explores how people ascribe meaning to their experiences in their interactions with the environment (Smith, Jarman, & Orborn, 1999)

Participants

Athletes (n = 25) and coaches (n = 10) were purposefully recruited from a range of sports (i.e., power sports, endurance sports, team sports) and experiences. Athletes were all high-level participants in their chosen sport. This purposeful sample was an important consideration in order to examine the 'elite' viewpoint. A range of

sports was purposefully sampled in order to identify the extent to which findings (see Table 1), and consequently policy and strategy, could be generalizable and impactful.

Table 1. *Phase 1 participants sport and level of competition*

PARTICIPANTS	LEVEL OF COMPETITION
Rugby (n = 8)	International (n = 5) Premiership Club (n = 3)
Football (n = 5)	International (n = 5)
Judo (n = 8)	International (n = 5) Development (n = 3)
Endurance sports (n= 8)	International (n = 6) Development (n = 2)
Athletics (n = 7)	International (n = 5) Development (n = 2)

Procedure

Following research ethics board approval, coaches and athletes from a range of sports were contacted. The study was explained to participants, and consent forms were distributed to those who expressed interest. A semi structured interview approach similar to the majority of IPA studies was adopted (Smith & Osborn, 2003). The interview schedule was not intended to be prescriptive and instead the interview guide was used as a prompt and a basis for conversation. Consistent with the IPA approach, participants were considered to be the experts and it is the meaning that they attribute to their experiences that was of interest (Smith, 1996). As such, participants were allowed to take the lead during the conversation and direct the flow of the interview. The interview was an experienced sport psychologist who has over

20 years experience working at the highest level of sport in a variety of roles. This experience and understanding of elite sport was an important factor in developing rapport with the participants and ensuring that they were comfortable responding to questions. All the interviews were recorded and transcribed verbatim to produce an accurate record of the interviews. Excluding introductions, explanations and initial conversation to build rapport, the interviews all lasted between 35 and 55 minutes.

Data Analysis

The data were independently analyzed using Smith and Osborn's recommendations for IPA analysis (2003). First, all transcripts were read and reread so that the researchers could become familiar with each participant's account. At this stage, initial notes of thoughts, observations, and reflections were recorded in the right-hand margin of the interview transcript and shared with the research team. In a second reading, the left-hand margin was used to identify themes that captured the essential qualities of the interview and connections were made between the emergent themes and researcher interpretations (Smith & Osborn, 2003). As a result, a list of subordinate themes and codes were complied with the aim of providing an overall structure to the analysis by relating the identified themes into clusters and to identify super-ordinate categories that suggest a hierarchical relationship between them.

Throughout this process, checks were made with the original transcript and the interviewer's field notes to ensure that connections still worked with the original data and that the analytic accounts could be traced back to recognizable core accounts. In cases where this step identified a disagreement between members of the research team, each investigator reread the original transcript, discussed the coding, and a consensus was reached. Once the analysis was completed for one transcript, a second transcript was coded. The table of themes was used to code

similar meanings in the same categories, and was expanded to incorporate new ideas as they emerged. During this phase, emergent themes were continually compared back to the original transcripts to ensure consistency. Once this process had been completed for all the transcripts, the research team reread the transcripts to ensure that all themes were coded consistently (Smith & Osborn, 2003). As expected with this form of analysis, some of the emergent themes reflected the content of the interview schedule, while others emerged from the participants' novel responses. The super-ordinate themes and their sub-ordinate components are presented in Table 1 along with a short verbatim account that illustrates each super-ordinate theme.

Ensuring Trustworthiness and Credibility

A number of steps were taken to enhance the study's trustworthiness (Lincoln & Guba 1985). Bracketing, which involved the researchers keeping a reflective diary to help bracket their personal experiences and consider the influence of personal values, was used (Nicholls, Holt, & Polman, 2005). Credibility was also enhanced in a number of ways including the sample size employed, having at least two investigators involved in each level of analysis, and having authors with significant experience in performance sport involved in the study (Sparkes, 1998).

Results

The purpose of this study was to explore the reasons athletes cite for not using PEDs. Table 2 highlights the range of factors underpinning athletes' decision making about PEDs.

Table 2. *Emerged themes and sub-theme with example data extracts from interviews*

SUPER-ORDINATE	**SUB-ORDINATE**	**DATA EXEMPLAR**
Personal Ethical Standards	Cheating yourself and others – gaining an unfair advantage	"I was never tempted…the fact that when I go to competitions and stand at the side of the mat, I like to know that I have done everything right to get there and I couldn't have that feeling if I cheated"
	Complexity of decision making about 'legal' substances	"I would say with testosterone, if it was to bring them up to a healthy level then I would say that is acceptable. But if it was specifically targeted to get them to the limit then I would say that is cheating" "even if something isn't banned but they are pretty close to what is banned and you know I wouldn't morally take them…other things like protein and vitamins, they have scientifically tested and everyone is allowed use them so that we all know that is acceptable"
	Personal decision guided by moral values	"Some things are legal and some things aren't but I have my own line that goes 'that's okay and that isn't' and that is pretty much it"

	Actions guided by what is 'within the rules'	"I don't think punching, or diving, or shirt pulling is really cheating, it's just part of the game and if I do it and get caught my team will get punished but doping is different, that isn't within the spirit of the game"
Psycho-social Environment	Letting others down	"I was thinking about my family you know, and if I was to be caught, the shame of it…the thought of my mother having to survive that, I was a shining star in our little neighborhood and if I caught you would be letting all those people down"
	Shame and guilt	"I would be mortified, embarrassed, shameful in terms of my family, my children"
	Anti-doping culture within 'their' sport / culture as a protective mechanism	"I don't feel like it is even a thing in my environment, I don't know if that is my group, my sport or even Great Britain but it just isn't part of what we do"
Role of significant others	Influence of family and parents	"I think certainly my parents are important, the way I was brought up was to try and if you are going to do something do it to the best of your ability but to do something to the best of your ability means to do it right"
	Influence of Peers and	"I came into judo as a skinny 17 year old by watching [name of judo player]

	Coaches	and people like that, when they would go off to the world championships I was thinking that is what I want to do. So I learned everything from [name of athlete] and [name of coach] and they would have told me that it [doping] is the wrong thing to do"
Anti-doping testing and education	Getting caught was not a significant factor	"I don't think that the testing is a deterrent in my decision not to dope" "I think that people who dope are smart about it and you know I'm sure the testing procedures make them nervous but I think a lot of people know how to beat the rules"
	Education not a significant factor	"I don't think the anti-doping education stuff was that important…by the time I had been given the information I had already decided that I wasn't going to do that sort of stuff anyway"

Anti-doping testing and associated sanctions

Despite the emphasis placed by WADA and National Governing Bodies of Sport on anti-doping testing and associated sanctions, these factors were not central to athletes' decision about not doping. Interestingly, although athletes were cognizant of the testing procedures in place, many suggested that there were *"ways around the testing procedures…if you want to do it, there are ways to dope without getting caught".* Having said this, the majority of participants suggested that they still would not take PEDs even if the anti-doping testing procedures were removed. Illustrating this, one rugby player describes how "*it wouldn't make any difference to me…I could go away to visit a mate in South Africa for six weeks in the summer and come back a lean sprinting machine, seven kilos up in weight and I know I wouldn't get caught for it. But I still wouldn't do it".*

There did appear to be some differences across the different sports, perhaps reflective of the level of testing carried out. Track and field athletes suggested that they would likely be tested and that this acted as somewhat of a deterrent – '*I've been tested in the past, and you still cack yourself because even though I know I am clean, you think what if something shows up, what if I took something without knowing…so it does keep you on your toes in that respect'*. However, many of these athletes suggested that there were many athletes in their sport who were '*way ahead of the testers…I mean, they know how to get away with it' – '…you read about people and you hear it as well, that certain things can be out of your system before they test, or they can't test for certain things yet, so people are getting away with it'.*
Other athletes, rugby and footballers for example, suggested that testing was not a deterrent since testing was not that prevalent in their sport '*…it isn't the testing that stops me, we rarely get tested, so yeah, it is not that I don't take drugs because I might get caught…that isn't the reason'.*

***Anti-Doping Education*.** The participants also suggested that anti-doping education was not an influencing factor in their decision not to take PEDs. In most cases, participants had made their decision about doping long in advance of anti-doping workshops and described how these educational sessions "*just educated you on the testing procedures…they don't really get you to think about the reasons why you should or shouldn't".* As such, the predominant response across participants was that anti-doping education was not a significant factor in their decision not to dope. Most reported although anti-doping education was useful in that it informed them about policies and procedures – '*I think the information was good in that way…it gave me a clear understanding of what to watch out for when you are taking stuff…the Sudafed and all that…'* it didn't impact on their decision-making process about taking illegal PEDs – ' *I don't think it was that effective really…I formed an opinion long before any of these workshops and I would stick to these'.*

These results suggest that the traditional emphasis on education, testing, and sanctions in anti-doping campaigns does not appear to be a significant influencing factor on individual's decisions about PEDs.

Personal Ethical Standards

The key factor that influenced decision-making about PEDs centered on the athlete's moral stance about doping in sport. The athletes strongly suggested that doping was a moral decision, typified by this athlete's explanation that irrespective of whether the athlete would get caught, it is wrong and "cheating". Typifying this, one endurance athlete stated that *"I have friends who don't even get tested, who could easily take drugs, get themselves to a reasonable performance level and stop because they will never get caught. But they don't for the same reason that I don't, because they feel like they are cheating themselves".* Interestingly, the participants described this as "*a line that I wasn't prepared to cross"* with one Judo player

suggesting that she "*doesn't want to cheat myself, and I don't want to cheat the other four fifths of people that are competing with me, the ones that are competing without doping, I don't want to cheat myself and I don't want to cheat them".*

The participants were asked to compare and contrast doping with other 'cheating' behaviors in their sport. Of course, 'cheating' is difficult to define in this context but can be understood as violating the implicit nature of the rules of the competition in order to gain an advantage (Lee et al., 2007) – simply, professional fouls or gamesmanship. Interestingly, they suggested that doping was a significantly worse offense than other forms of cheating such as diving in football, punching in rugby, or psyching out your opposition in athletics – '*punching, getting someone at the bottom of a ruck, all those things are cheating, like to the letter of the law. But not one rugby player plays the game to the letter of the law, you are always looking for the little advantage. So you are constantly pushing that line but I think that that is different to taking drugs, that is what you do in the heat of battle, I think there is a line in sport and I know that I wouldn't cross it'.*

Although the athletes acknowledged that these behaviors were outside the rules of the sport, they suggested that they were part of the game whereas doping was outside the spirit of the sport and not acceptable. This moral complexity was an interesting basis for their decision about "cheating" behaviors in their sport. Although they stated that their decision about PEDs was morally based, the decision making underpinning other aspects of their behavior in the sport had a more rational underpinning. The key message that emerged from the participants in this regard was that there was a personally enforced ethical line that they wouldn't cross to gain an *'unfair advantage'* against their peers.

There also appeared to be significant age effects apparent in athletes' attitudes towards, though not necessarily their usage of, PEDs. Some of the older athletes and coaches admitted to taking PEDs during their early career and recognized the temptation of this. Conversely, the vast majority of the younger cohort

of athletes strongly articulated their stance and stated how they would not take PEDs due to their personal ethical standards. As such, and perhaps somewhat surprisingly given the increasing competiveness of elite sport, the younger athletes displayed a much stronger anti-doping stance, grounded by their personal morals and ethics, than the older athletes and coaches.

However, there was significant complexity evident underpinning athletes' decision making about performance enhancing substances, both legal and illegal, and these will be explored further in the next section.

Illegality of substances

The central role that morals seemed to play in the athletes' decision making was interesting and went beyond the use of PEDs. The legality of substances was an important factor in the athletes' decision making with all the participants suggesting that legal nutritional aids are not cheating *"because WADA says so*!" However, although all the participants spoke about the legality of substances as an important factor in their decision, this was actually a complex issue. For example, when athletes were probed about whether they would take medical supplements to achieve above normal, though still legal, levels (e.g., thyroid manipulation) the majority suggested that they wouldn't be comfortable describing this type of supplementation as "unethical" and "cheating". For example, one endurance athlete when asked about whether he would take testosterone to boost his levels responded:

> *"I don't know, I guess if the doctor said I needed to, if it was healthy. If I went to a normal GP and they suggested that I took it, not anything to do with the sport, then I would take it. But if I went to a doctor from [name of NGB] and they said, take it, it will boost your performance, then I would be like well, why do you want me to do that…I would feel different about it if it was only performance enhancing…"*

In fact, this idea of equality was another reason athletes cited for not taking PEDs describing how other, legal, substances were acceptable because "*I feel that everyone has access to that sort of dietary stuff"* and "*if its allowed and everyone is doing it them I think its alright. If everybody is on the same playing field then its fine but if people are taking stuff that does a bit more than help you recover then I think there is a big difference".*

As described in the previous section, age effects were apparent in athletes' and coaches' responses to these questions. For example, when a younger endurance athlete was asked "*would you take supplementary testosterone to get your levels up to a normal, legal…would that be cheating?'* he replied, "*No, that is not acceptable, if it is specifically targeted to get you to the limit, the legal limit, then I would say that is cheating, I wouldn't do it."* However, when responding to a similar question, an older coach suggested that "*there is stuff that sails a little close to the wind, thyroid manipulation and things, it is legal but still kind of iffy…if it would help an athlete and it was legal, maybe even if I had reservations, I would want the athlete to have it."* This age effect deserves further clarification but should have important implications for the design and delivery of anti-doping policy and education.

The role of significant others

A number of key psycho-social influences emerged as playing a central role in athletes' decision making about PEDs. Firstly, the importance of the training group and culture of their sport was cited as fundamental to athletes' decision not to take PEDs. The participants described how doping was "culturally inevitable" in other countries and sport systems but was not part of their involvement in sport. One judo player suggested that "*it [doping] is not part of what I understand as traditional Judo culture. We are quite traditional in this group, we have a traditional background, a lot of what we take as our culture is from [name of coach] and before him and because*

of that, no I would never consider doping". As such, anticipated feelings of shame and guilt associated with doping were cited as key reasons underpinning the decision not to dope with a number of participants suggesting that they would be letting significant others who helped them achieve in their sport down. For example, one endurance athlete described how he "*came from a very strong family background, and to my family through that if I got busted for a positive test…I could never, I could never even consider that".*

Psycho-social Environment

The protective mechanism of the athletes' training environment certainly appeared to influence their decision, with significant others including parents, coaches and peers all playing a role in the athletes' decision-making. Interestingly, many of the participants emphasized the role of parents in guiding their decisions about PEDs and how their upbringing instilled those values from an early age. Typifying this, one footballer described how "*yeah that comes from my family, you shouldn't win by cheating and I think that is what I have been taught and that is how I like to win".* Reflecting the role played by significant others, many of the participants suggested that they trusted the actions of coaches and other medical and sport science support staff in guiding their decision about substances. For example, one footballer commented that "*you put your trust in a lot of the people around you, and you hope that they give you the right advice".* However, despite the importance placed on significant others, and the rules governing what is legal or not, the participants all stressed that it was their individual decision to take PEDs or not. Supporting this, one rugby player described how "*this is my line, someone else's line might be different, but this is my line and I won't cross it".* Nonetheless, the importance of reference group opinion, peers and significant others' approval or

disapproval of doping, does appear to play an important role in athletes' decision-making about doping.

Discussion

Testing and anti-doping education is central to WADA's anti-doping strategy (WADA, 2009). However, the results of this qualitative study suggest that athletes' decision not to dope is made independent of, or at least not contingent on these structures. This reflects other evidence that suggests that anti-doping testing and sanctions do not play a significant role in athletes' decision not to dope. Instead, the individual's personal and moral standards, and the influence of their psycho-social environment appear to be the key factors underpinning their decision about doping (Wiefferink, *et al*., 2006; Petrozci, 2007). However, this moral reasoning appeared to be more complex than 'it is just against the rules so I won't do it'.

The athletes suggested that they had their own moral compass that guided their decisions about both PEDs and other legal performance enhancing substances. This was illustrated by the athletes' suggestion that they would not take legal substances *just* to gain a performance enhancing effect even if these were allowed. Further, the participants described the shame that would be associated with getting caught doping and this was very much described in terms of a moral emotion and a failure to live up to the norms and expectations of their social group (Eisenberg, 2000). The ability to influence athletes' 'moral compass' would seem an effective way to influence decision-making about PEDs in sport. Interestingly, the participants were very strong in their stance that they would prefer to compete, and perhaps not win, as a 'clean' athlete than be more successful by taking PEDs (Laure, *et al.,* 2001).

As expected the athletes in this study were very driven by the desire to succeed and be successful in their sport. However, unlike previous research (e.g., Connor & Mananov, 2009; Goldman & Klatz, 1992) the athletes in this study

predominantly suggested that they were not prepared to 'win at any cost', especially doping. This was in contrast to Goldman's classical doping question where 98% of athletes reported that they would dope if they could be assured that they would not be caught. Again, athletes reported that their personal ethical standards and desire to compete as 'clean athletes' drove these decisions.

When athletes' attitudes to doping, compared to other forms of cheating in their sport, is examined a number of interesting issues emerge. Firstly, the degree of rationality is debatable (Backhouse, *et al.,* 2007) – even if the athletes weren't going to get caught and they were assured their performance would improve, they still reported that they wouldn't take PEDs. Again, this points to the importance of attitudes and morals rather than adopting a 'winning strategy' as key to their decision-making (Haugen, 2004). The differences across different age cohorts is an important issue that emerged from the results. For example, there appeared to be a significant difference in older and younger participants' responses to the questions about 'Illegality of Substances' with the younger cohort strongly suggesting that even if certain substances were legal (or not tested for) they would not take them as this crossed their "personal moral compass". Conversely, the older cohort were not as strong in their conviction about this and suggested that *"as long as it was legal, it was ok"*. Given the rapid development of PEDs and the difficulty of maintaining an efficient testing program that can adequately test of *all* PEDs the role of personal ethical and moral standards in younger athletes should be an important avenue for exploration for WADA.

Unlike some evidence from the literature (e.g., Goldman & Klatz, 1992), athletes did not report health risks as a significant factor in their decision not to dope. In fact, the negative health risks (both short and long term) were not seen as influencing factors with most athletes suggesting *'I haven't even thought about it, the health implications wouldn't have crossed my mind'*. Although the lack of attention to long-term health risks associated with PEDs may be expected within a young

population, such as that sampled for this study (Ehrnborg & Rosén, 2009), short-term health implications were also not seen as a significant factor in the athletes' decision-making. As such, the significant factors influencing the athletes' decision not to dope appear to be their personal moral and ethical standards rather than a 'cost versus benefit' evaluation of doping. Personal moral beliefs therefore seem to act as a preventing factor for doping (Strelan & Boeckmann, 2006).

The athletes' psychosocial environment was also shown as a key factor underpinning their decision about PEDs. As found elsewhere in the anti-doping literature, the external pressures of social and moral expectations acted as a deterrent with coaches, the norms of the training group, and peers especially important in this manner. As such, interventions and anti-doping strategies that work at group levels would seem an efficacious way to influence decision making about taking PEDs. In fact, the traditional anti-doping education procedures were described by the participants as '*not particularly useful'* outside the focus on procedures and systems. Instead, influencing the subculture of a sport or training environment may be more effective. This was particularly evident in the current results with athletes describing how the anti-doping ethos of their training group, sport, and country played a role in their decision. Individuals strive to show solidarity with peers and enhance their group identity by conforming to group norms. Therefore, altering expectations and group norms about doping would seem a salient way to impact PED usage. This might be especially important from a developmental perspective given that many factors such as role models, vulnerability to peer pressure, and attitudes change as athletes move from one developmental stage to another (Petróczi & Aidman, 2008).

The qualitative methodology employed in this stage enabled a rich description of the reasons underpinning athletes' decision not to dope. Of course, the interviews elicited some diverse responses but the overwhelming responses are reflected in the themes discussed thus far. However, in order to test these results with a larger

population it is important that quantitative tools are developed that can give further insights into the decision-making of different populations of athletes about doping in sport.

Phase 2 – Development and Deployment of the 'Why Athletes say No to Doping' Questionnaire

Introduction

The aim of this phase of the research was to test athletes' decisions not to use PEDs across a broader range of participants, sports, and other key identified variables of sex, experience and competition level using a quantitative questionnaire. The qualitative data presented in Phase 1 described the reasons athletes' cite for their decision about taking PEDs. However, there was a need to test these reasons with a broader sample of athletes as well as developing an assessment tool that could be used to inform wider anti-doping practices.

As such, the purpose of this section was two-fold. Firstly, to develop a questionnaire tool that could be used to collect data about the choices athletes make about PEDs and thus inform anti-doping practices. The second purpose of this study was to pilot this questionnaire with a sample of athletes to test the qualitative findings from Stage 1.

Questionnaire Development

Item Generation

The creation of the initial pool of questionnaire items is a crucial stage in questionnaire construction. The goal of this stage was to sample the content from Phase 1 that was related to the construct under consideration (Clark & Watson,

1995). The initial item generation resulted in a list of 72 items representing the key themes that were identified in the qualitative analysis reported in Table 3.

In addition to these questions, a separate section of the questionnaire asked participants to apportion a total score of 100 across seven potential reasons underpinning decisions not to dope in sport (i.e., My personal ethical standards, Illegality of substances, People in my sport, Influence of family and friends, Anti-doping education, Anti-doping testing, Concerns about my health). This enabled an investigation of participants' 'weighted attitudes' to doping.

Expert Review

The initial list of 72 items, spanning the 6 categories, was then submitted to two independent panels of experts (n = 3 and n = 4) respectively. The expert panels were all involved in high-level sport and represented proficiency in strength and conditioning (n= 2), sport psychology (n=1), coaching (n = 3), and applied physiology support (n=1). In addition, a number of the panel had also competed at international level in their chosen sport. Therefore, the strength of the expert panels lay in the diversity of the expertise and interactions that occurred during the group meetings (Czaja & Blair, 1996). The employment of two separate panels was a useful procedure as it allowed a 'sense check' of modifications already proposed.

The expert panel was asked to scrutinize and review each item and comment on the clarity, face and content validity, comprehensibility, and appropriateness of each item. Using Dunn, *et al.*'s (1999) recommendations, each expert panel rated the content validity and representation of the initial item set on a scale anchored by 1 (not at all relevant) to 5 (completely relevant). The panel was also encouraged to comment on the wording of items and to offer additional items if they felt gaps were evident (Dillman, 2000). Items that were rated 4 or less were then discussed by the whole panel and changes were made to these items if a consensus was reached by

the entire panel following the presentation of an appropriate rationale. Otherwise, these items were marked for potential deletion at the end of this stage.

This process resulted in the rewording of several items due to comprehension issues (n = 13). Thirty-one items were deleted and a number of additional items (n = 7) were included. Following this process the questionnaire contained 48 items.

Cognitive Interviews

The aim of the cognitive interview was to check for misunderstandings, inconsistencies, unclear questions, and inappropriate response options (Conrad & Blair, 1996; Willis, *et al.,* 1999). Conrad and Blair (1996) suggest that possible response problems which occur with questionnaire completion can be classified into five categories (i.e., lexical, inclusion/exclusion, temporal, logical, and computational problems). Individual cognitive interviews were held with a stratified sample of four participants reflecting the intended target population of the questionnaire. Although Dillman (2000) cautions researchers that small numbers of cognitive interviews cannot identify all the potential problems of a questionnaire, this number was deemed sufficient as it represented the sub-populations of the intended target population of the questionnaire. The questionnaire was split into 10 sections containing randomized items. A combination of cognitive interviewing techniques was employed using both concurrent (i.e., think-aloud protocol and observation) and retrospective (i.e., retrospective probing) designs. After each section was completed, the initial reactions of the respondents were recorded using a series of probing questions to clarify how each respondent answered the questions.

Findings from the cognitive interviews were summarized on a question-by-question basis by entering comments directly under each item in an electronic version of the questionnaire. These comments were then aggregated using Conrad

and Blair's (1996) classification system for a complete review. Following this process, the questionnaire was reduced to 48 items.

Questionnaire structure

Following these stages, the questionnaire consisted of 48 items and included seven negatively worded questions to counter acquiescence. An instruction page and a section for demographic information were also included. The 48-item questionnaire took between 20 and 30 minutes to complete. The self-report questionnaire was using an online survey application.

The questionnaire contained six categories of questions as outlined in Table 3.

Table 3. *Phase 2 questionnaire categories, sub-categories and sample questions*

CATEGORY	SUB-CATEGORY	SAMPLE QUESTION
Personal Ethical Standards	Cheating	I will not cheat to win in my sport
	Rational decision about other 'cheating'	The premeditation of doping makes it worse than other forms of cheating in my sport
Illegality of substances	Illegality of substances	If a substance is banned then I won't take it
	Effects of substance	I feel uncomfortable taking a substance just for performance enhancing effects
Psychosocial Influences	Normative group behavior	What my peers think about

		doping influences my decision
	Feelings of shame and guilt	The shame of getting caught is a reason why I wouldn't take PEDs
	Role as an athlete	Other people look up to me and this affects my decision not to dope
Influence of Significant Others	Influence of significant others	My coach is a significant influence on my decision not to take PEDs
Anti-doping Education and Anti-doping Testing	Anti-doping Testing	The chance of getting caught is the main reason why I wouldn't take PEDs
	Sanctions	The sanction for getting caught doping is outweighed by the benefits
	Anti-doping Education	I was really influenced by the anti doping education I received
Long-term health implications	Long-term health implications	If I knew there were no long-term health risks, I would take PEDs to improve my performance

Method

Participants

Responses to the questionnaire were solicited from athletes in a variety of sports[1]. This report examines the responses of 101 athletes from a range of sport (see Table 4). All participants competed at club (n = 34), regional (n = 22), or international (n = 45) level.

Participants were classified by gender, and categorized into three sport categories to enable cross comparison – team sports (e.g., rugby, hockey), individual physical sports (e.g., rowing, swimming) and individual skilled sports (e.g., golf, table tennis). Table 3, below, shows the breakdown of the participants.

Table 4. *Phase 2 participant Information*

SPORT CATEGORY	MALE	FEMALE	TOTAL
Team	63	5	68
Individual Physical	14	10	24
Individual Skill	8	1	9
Total	**85**	**16**	

Procedure

Participants were forwarded information about the study through gatekeepers of their sport (e.g., coaches, performance directors, support staff) and those that expressed an interest were forwarded the e-questionnaire. As such, the recruitment of participants was blind to the research team ensuring confidentiality and anonymity for all participants. No names or identifying information was recorded at any stage of

[1] Data collection for the phase of the project is ongoing. We are continuing to collect responses from athletes and will provide WADA with the results of this continued data collection process. Due to the timing of the data collection many athletes were in off-season and not available at the time of data collection.

the data collection. The recruitment process and data collection for this phase of the study is ongoing using the e-questionnaire allowing the continuing collection of responses.

Participants were asked to complete the questionnaire using the online survey tool surverymonkey.com. Participants were asked to supply some basic demographic information (e.g., sport, level of participation, whether they had previously been drug tested) before responding to each statement. The statements were presented in a randomized order and participants were asked to indicate their level of agreement or disagreement with each statement as illustrated below. The Likert scale was anchored by strongly disagree (1) and strongly agree responses (6). An enforced choice method was employed by not including a 'neither agree nor disagree' response.

Data Analysis

The results of the questionnaire study were analyzised using descriptive and non-parametric statistics using the statistical package SPSS. After the questionnaire was completed item responses for each category of question were summed to create a score for that group of items. Non-parametric statistics (i.e., Mann-Whitney U Test, Kruskal-Wallis Test) were used to analyze the data since a Likert scale was employed in the questionnaire and the assumptions about the parameters of the data underpinning parametric statistics were not met (e.g., normal distribution, homogeneity of variance) and an ordinal scale was used.

Results

The levels of agreement with each of the six categories are presented in Figure 1 (i.e., 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree). The results from Figure 1 illustrate that there

was agreement with five out of the six factors with “long-term health implications” the only factor that participants did not agree was a strong influence on their decision not to dope. However, as can be seen from these findings, there was various levels of agreement across the other five factors. The results of the Friedman Test indicated that there was a statistically significant difference in scores across the six factors ((5, n = 101) = 126.20, p < .005)). Inspection of the median values showed differences in level of agreement with each factor from Personal Ethical Standards (Md = 4.6), to Illegality of Substances (Md = 4.0), to Anti-doping Education and Testing (Md = 3.8) and Long-term Health Implications (Md = 3.25).

Follow up Wilcoxon Signed Rank Tests revealed significant differences in scores between Personal Ethical Standards (Md = 4.6) and all other factors – Illegality of Substances (Md = 4.0), z = -4.432, p < .001, Psychosocial Influences (Md = 4.3), z = -3.239, p < .005, Influence of Significant Others (Md = 4.2), z = -3.500, p < .001, Anti-doping Education and Anti-doping Testing (Md = 3.8), z = -6.071, p < .001, and Long-term Health Implications (Md = 3.2), z = -6.511, p < .001.

Significant differences were also found between scores on Illegality of Substances (Md = 4.0) and Psychosocial influences (Md = 4.3), z = -2.153, p <.05, Anti-doping Education and Anti-doping Testing (Md = 3.8), z = -3.837, p < .001, and Long-term Health Implications (Md = 3.2), z = -6.448, p < .001.

There were also significant differences between scores on Psychosocial Influences (Md = 4.3) and Influence of Significant Others (Md = 4.2), z = -2.440, p < .05, Anti-doping Education and Anti-doping Testing (Md = 3.8), z = -5.615, p < .001, and Long-term Health Implications (Md = 3.2), z = -6.671, p < .001.

Finally, the Wilcoxon Signed Rank Test revealed significant differences in scores between Long-term Health Implications (Md = 3.2) and the Influence of Significant Others (Md = 4.2), z = -4.612, p < .001, and between Long-term Heath Implications and Anti-doping Education and Testing (Md = 3.8), z = -4.661, p < .001.

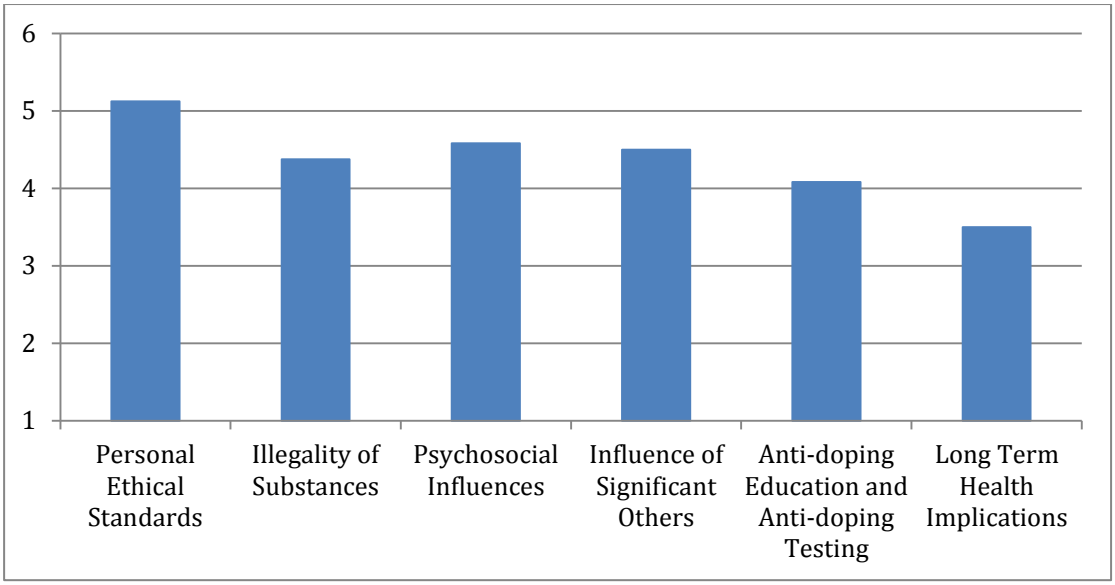

Figure 1. Endorsement scores for each category

In the next sections, each of these categories will be explored in more detail to gain a clearer picture of the reasons underpinning athletes' decision-making about doping in sport. Differences across sports and gender for each sub-category were also analyzed (for example, gender or sporting difference).

Table 5. *Descriptive data of category endorsements*

	PERSONAL ETHICAL STANDARDS	ILLEGALITY OF SUBSTANCES	PSYCHOSOCIAL INFLUENCES	INFLUENCE OF SIGNIFICANT OTHERS	ANTI-DOPING EDUCATION AND ANTI-DOPING TESTING	LONG TERM HEALTH IMPLICATIONS
Mean	5.12	4.38	4.58	4.5	4.08	3.5
Mode	5	5	5	5	5	2
Median	5	4	4	4	4	2

Personal Ethical Standards

There was strong agreement across both sports and age cohorts that Personal Ethical Standards were an important factor in athletes' decision-making about taking

PEDs (see Figure 1). This is reflective of the qualitative data described earlier in the report and points to the interesting role that personal morals play in athletes' decision-making.

This factor contained two categories of questions, shown below in Figure 2; the first related to which 'cheating' was a factor in athletes' decision not to dope. Interestingly, athletes were in strong agreement that taking PEDs was 'cheating' and that this played a significant role in their decision. However, and as was found during the interview study described earlier in this report, the results point to athletes' acceptance of other types of cheating (e.g., professional fouls) as acceptable within their sport, suggesting that they made rational decisions about this type of 'cheating' behavior but moral and ethical decisions about PEDs.

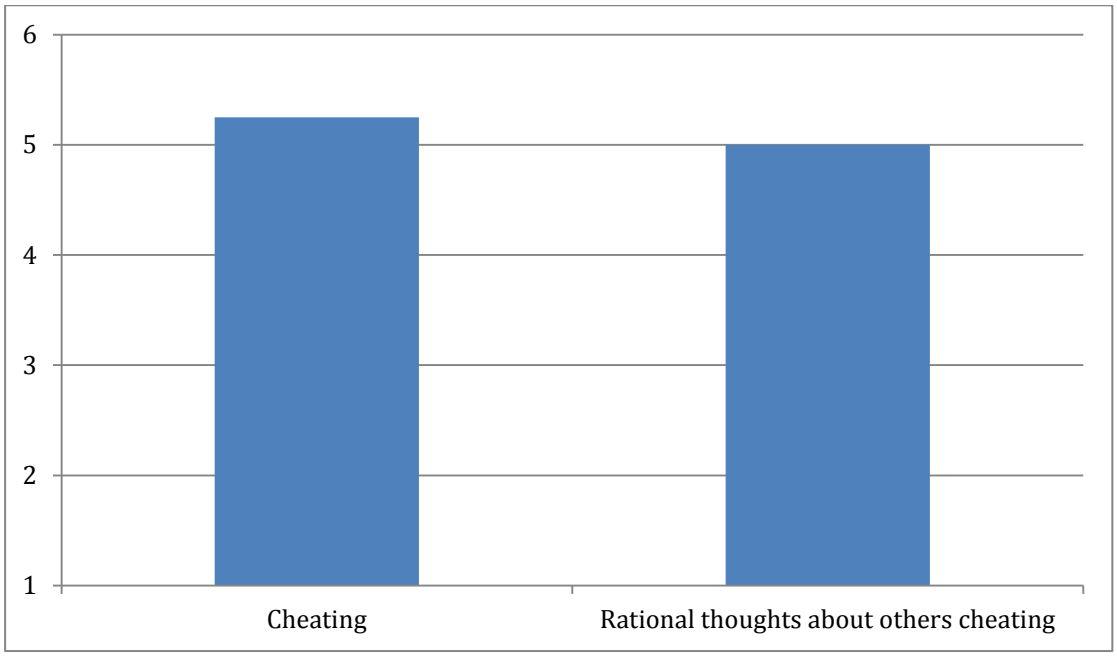

Figure 2. Endorsement scores for Personal Ethical Standards sub-categories

A Kruskal-Wallis Test revealed a statistically significant difference in scores about Personal Ethical Standards across the three types of sports (Team, n = 68; Individual, n = 24, skilled, n = 9), x^2 (2, 101) = 10.59, p = .005. The Skilled athletes recorded a higher median score than the other two sport groups. A Mann-Whitney U

Test revealed no significant difference in scores about Personal Ethical Standards of males (Md = 4.63) and females (Md = 4.94), U = 496.5, z = -1.71, p =. 087.

Illegality of Substances

The athletes were in agreement that the Illegality of Substances was a factor in their decision-making about PEDs (see Figure 1, and Figure 3). The fact that certain substances were banned by WADA influenced their decision not to take these. However, as with the qualitative findings, the effect of the substance (e.g., whether it was performance enhancing rather than legal or illegal) was a factor in the athletes' decision about whether to take it or not. For example, when posed with statements such as 'It isn't cheating to take a substance to put your body within normal and legal levels', the majority of athletes disagreed or strongly disagreed (reflecting responses to the Phase 1 interview) suggesting that they would not be willing to take legal substances that had a performance enhancing effect. Interestingly, there were differences across age cohorts with only 11% of 35+ athletes agreeing or strongly agreeing, compared to 29% of 34 and under athletes. Clearly, there may be generational differences in athletes' acceptance of legal performance enhancing substances (e.g., thyroid medication) that warrant further exploration. This 'age effect' mirrors the findings found in Phase 1. In short, athletes in age groups of 35+ were much more reluctant to engage in the use of legal substances with physical benefit, when compared to athletes aged 34 and under. This finding has important implications for anti-doping education aimed at younger cohorts of athletes.

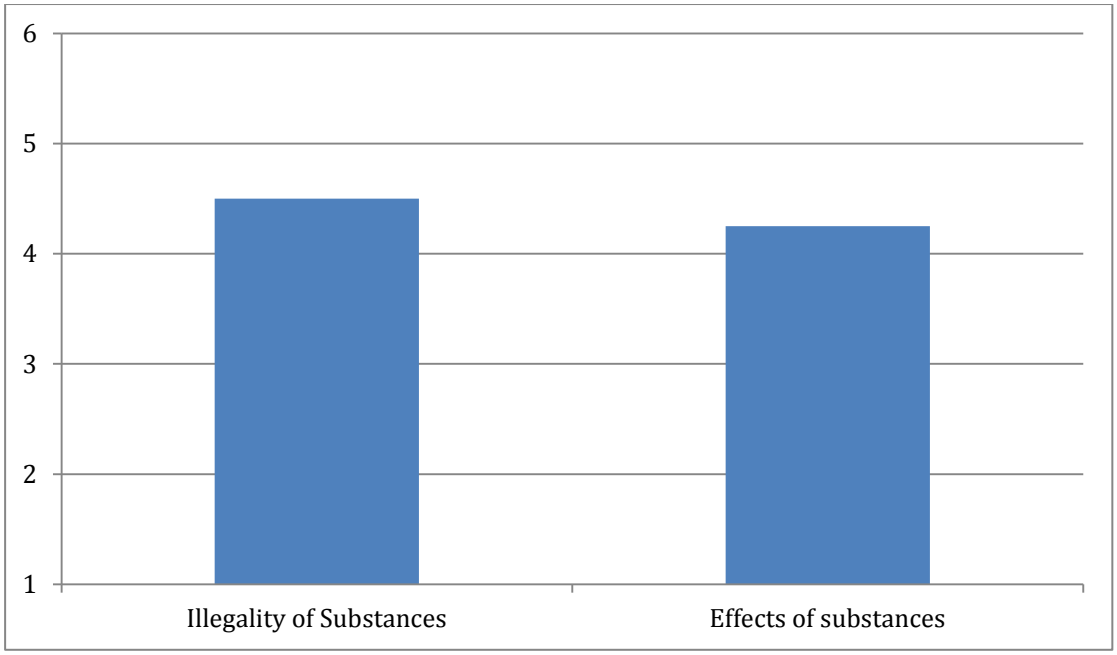

Figure 3. Endorsement scores for illegality of substances sub-categories.

A Kruskal-Wallis Test did not reveal a statistically significant difference in scores about Illegality of Substances across the three types of sports (Team, n = 68; Individual, n = 24, skilled, n = 9), x^2 (2, 101) = 3.80, p = .149. A Mann-Whitney U Test revealed no significant difference in scores about Illegality of Substances of males (Md = 4.13) and females (Md = 4.00), U = 559.0, z = -1.133, p = .257.

Psychosocial Influences

As expected following the qualitative findings, the importance of the psychosocial environment as a protective factor emerged in these results. As evident from the results, the majority of athletes were in agreement with statements that described the psychosocial environment as a factor that influenced their decision not to dope. For example, normative group behavior (both within their training group and their particular sport), and the athletes' perception of the importance of being a positive role model were shown as important reasons underpinning their decision not to dope (Figure 4).

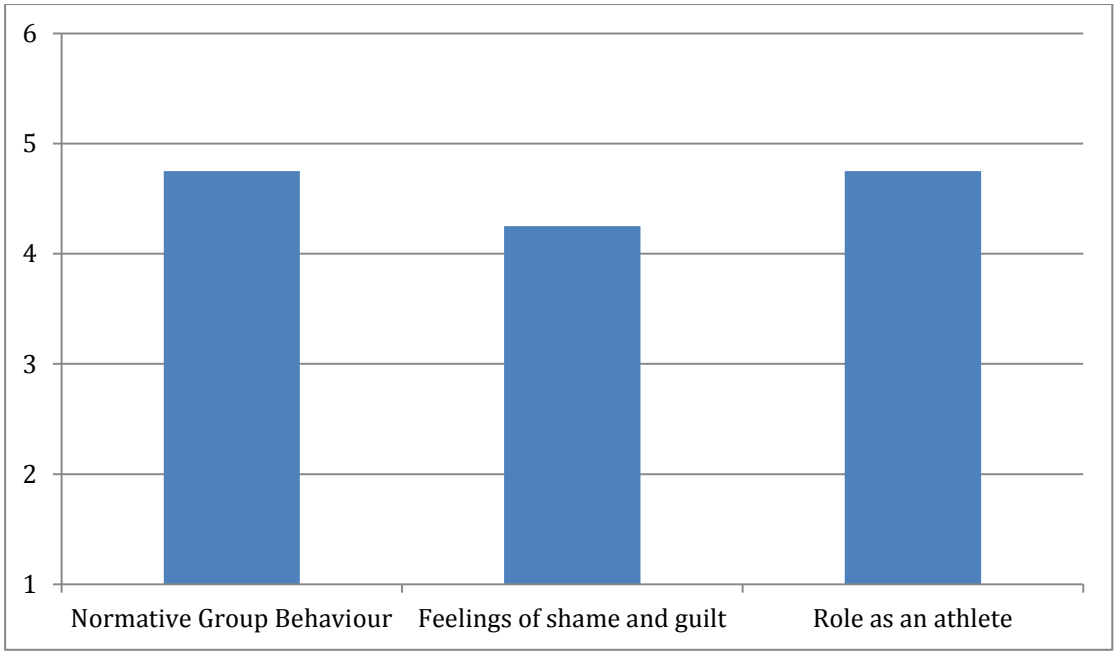

Figure 4. Endorsement scores for psychosocial Influences

Reflecting the 'cultural xenophobia' described in the qualitative study, it was interesting to note that athletes, irrespective of sport, suggested that doping was much more common in other sports rather than theirs. For example, when posed with the statement 'Doping is much more common in other sports than in mine', 54% of team athletes, 60% of individual skill athletes and 48% of individual physical athletes agreed indicating, perhaps, that a significant proportion of athletes believe the problem is worse in other sports. Furthermore, 65% of all participants agreed that doping is more problematic in other countries. In fact, a Kruskal-Wallis Test did reveal a statistically significant difference in scores about Psychosocial Influences across the three types of sports (Team, n = 68; Individual, n = 24, skilled, n = 9), x^2 (2, 101) = 8.50, p = .014. Follow-up Mann Whitney U Tests revealed a significant difference between scores about Psychosocial influences between Team (Md = 4.21) and Skilled (Md = 4.67) athletes, U – 137.00, z = -2.683, p = .007.

When comparing participant responses to questions relating to feelings of shame and guilt, it was clear that this did not play as significant a role as the other sub-categories concerned with psychosocial influences. As such, the decision not to dope appears to be underpinned by factors important to the individual rather than sanctions imposed on them by others. Although no differences emerged across sporting groups, it was worth noting the overall females found their feelings of shame and guilt to be more influential than male participants.

On the other hand, 'role as an athlete' proved to be much more important for the participants in their anti-doping decisions. In total, a vast 87% of participants agreed or strongly agreed when asked if taking PEDs would tarnish their relationship. No significant differences emerged when comparing sports and gender groups.

Influences of Significant Others

For this category, participants were asked how their decision not to dope was effected by their coach, family and teammates. No significant differences emerged for the overall factor across sports, x^2 (2, 101) = .226, p = .893. However, when the individual questions were examined, participants deemed their family to be the most influential, 'agreeable' levels being 29%, 59%, and 31% respectively across the sport. Perhaps, unsurprisingly given the nature of their involvement this was the most prevalent for team athletes. However, no statistically significant differences emerged across gender groups, U = 678.00, z = -.019, p = .985.

Anti-doping education and testing

This category was broken down into 3 sub-categories; Anti-doping testing, sanctions and anti-doping education. Participants 'agreeableness' to these sub-categories can be seen below in Figure 5.

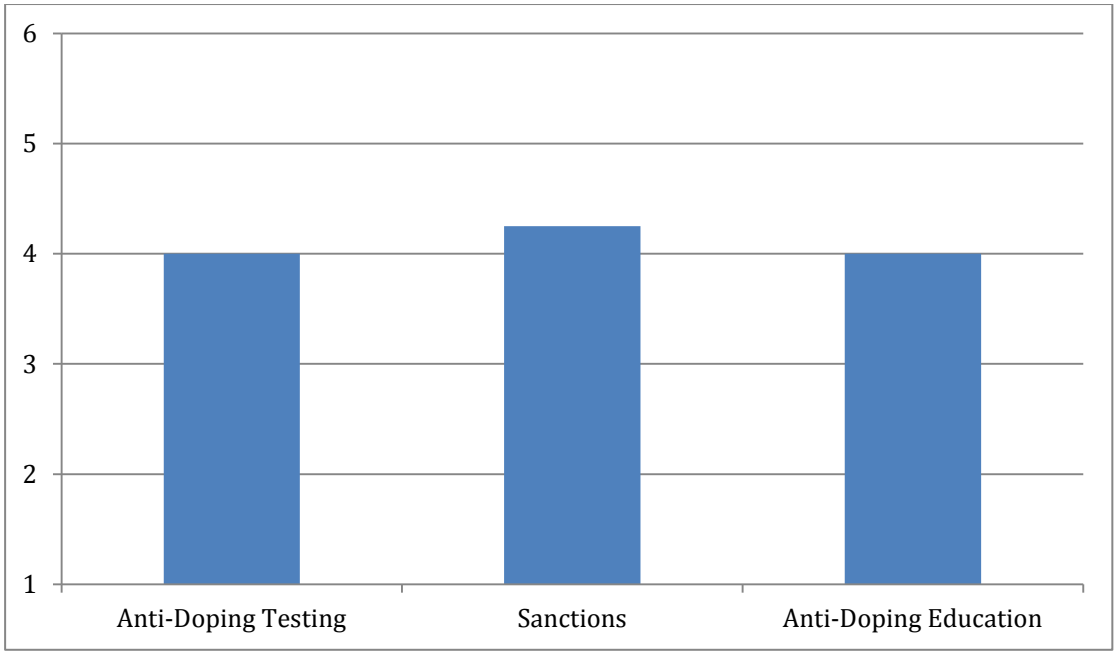

Figure 5. Endorsement scores for anti-doping education and testing

Overall, this category received one of the lowest levels of agreement across the six categories. Despite the significant investment in anti-doping education, it was worth noting that not a single participant claimed to 'strongly agree' with the statement 'I was really influenced by the anti-doping education I received'. This finding was consistent across both sports and age cohorts. Expanding this finding, 44% of participants indicated that they had already made up their mind regarding performance enhancing drugs before they engaged in anti-doping education. Similarly to anti-doping education, testing procedures have received a vast amount of time and resource from governing bodies around the world. Despite this investment, this sub-category received the second lowest level of agreement by participants. In fact, quite worryingly the following statement received the lowest level of agreement for the whole questionnaire: 'The chance of getting caught is the main reason why I wouldn't take Performance Enhancing Drugs'. In total, 57% of participants disagreed with this statement in some way, indicating that getting caught doping is not a big deterrent at all.

In regards to sanctions, which is shown in Figure 5 to have a bigger influence than both anti-doping testing and education, interesting sporting group comparisons emerged. Although there was no significant difference in responses across the three sports, (Team, n = 68; Individual, n = 24, skilled, n = 9), x^2 (2, 101) = 1.192, p = .551 for this category some differences in responses to individual questions were apparent. For example, when posed with the statement 'Getting banned is a big factor in my decision not to take Performance Enhancing Drugs' 32% of team athletes strongly agreed with the statement compared to 25% of the 'skill' athletes and 22% of the 'physical' athletes. As such, differences across sports may be an important factor to consider in terms of developing anti-doping policy.

Long-term health implications

This factor asked athletes about how the long-term health implications of PEDs influenced their decision about doping, and consequently had the least agreement of all six factors (see Figure 1). This again reflects the qualitative findings from the previous study and suggests that the long-term repercussions of taking PEDs does not influence athletes decision, where as other factors (e.g., personal ethical standards and the psychosocial environment) are more influential. There was a statistically significant difference in responses between males (Md = 3.5) and females (Md = 3), U – 426.00, z = -2.375, p = .018.

Weighted Individual Attitudes

Athletes were asked to 'rank' their main influences for not doping by assigning a percentage importance to seven factors (i.e., My personal ethical standards, Illegality of substances, People in my sport, Influence of family and friends, Anti doping education, Anti doping testing, Concerns about my health). The most heavily weighted factor proved to be 'Personal Ethical Standards'. Participants, on average,

allocated 30.2% to this factor, with some athletes suggesting it account for as much as 90% of the reason for not doping in their sport.

Three other factors - Illegality of Substances, Influence of family and friends, and Concerns about my health were allocated 14.5%, 14% and 16% respectively.

Bringing up the rear was ‘anti-doping education’, with just over 5.5% importance allocated by participants. This information is shown below in Figure 6.

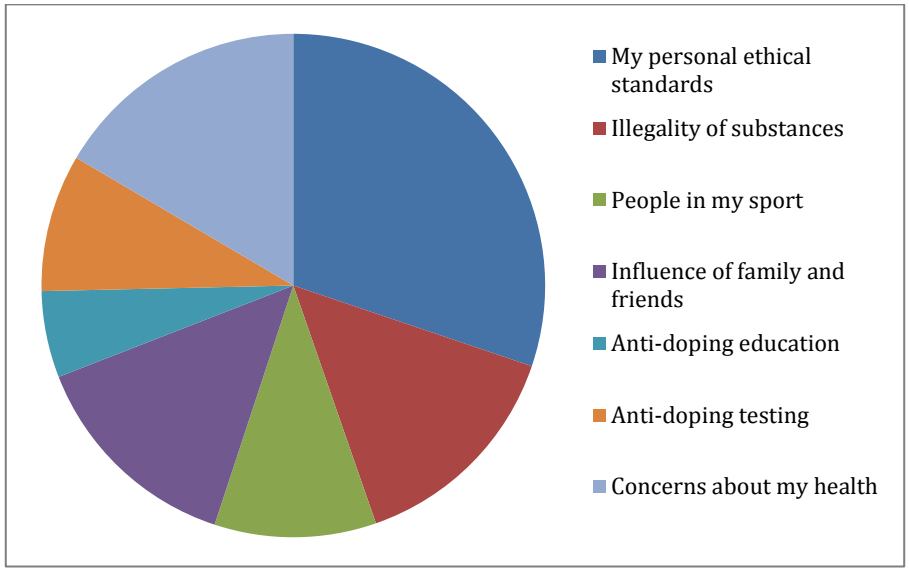

Figure 6. Individual athletes weighted attitudes - All

Across the different sporting and gender groups, some interesting findings appeared, (see Figure 7).

Figure 7. Individual athletes weighted attitudes – Male and Female

In particular two significant differences jump out when comparing the answers of male and female athletes. The first is the difference in weight allocated to 'my Personal Ethical Standards', which appears to be somewhat smaller in males (29%) when compared to females (35%). Males, on other hand, allocated a greater percentage of importance to 'concerns about my health' (17%) than females (11%). This would indicate that males athletes take more notice of their long-term health, and the effects that doping have upon them – an important finding which could prove imperative for anti-doping education.

The cross-comparison of sporting groups only showed further support for the previous findings of this research, illustrated in Figures 8, 9 and 10.

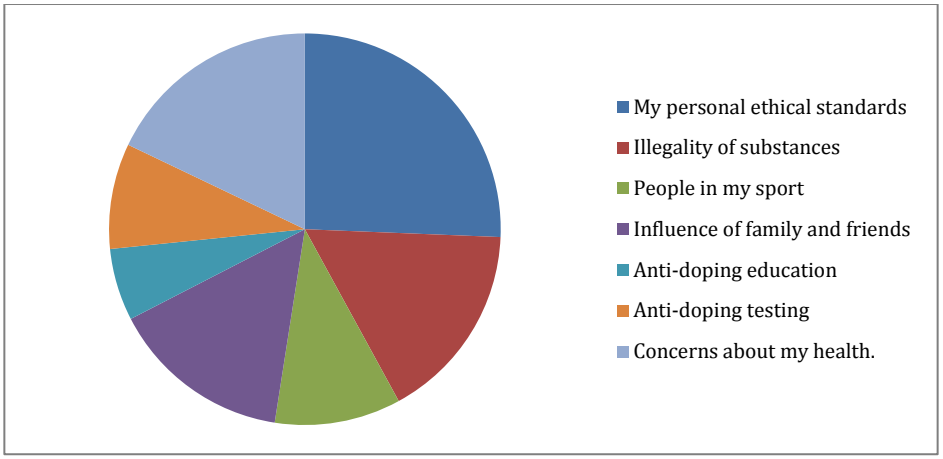

Figure 8. Individual athletes weighted attitudes – Team

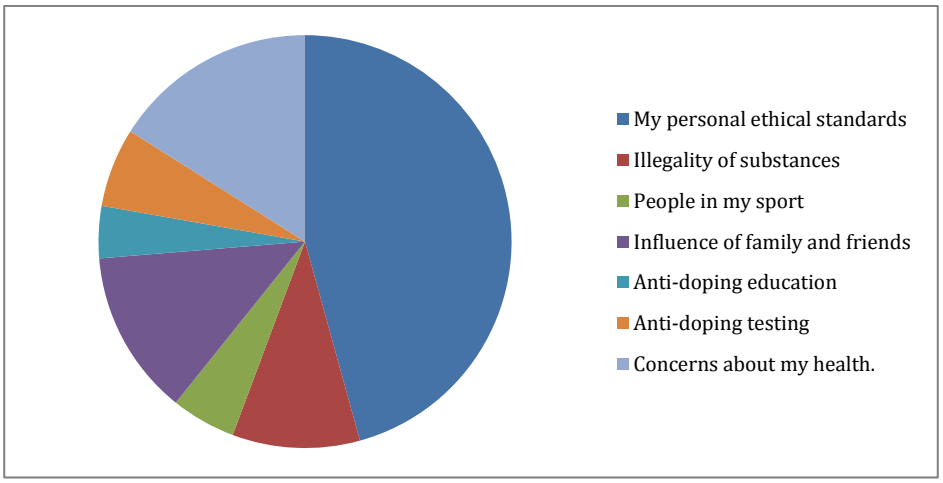

Figure 9. Individual athletes weighted attitudes – Skill

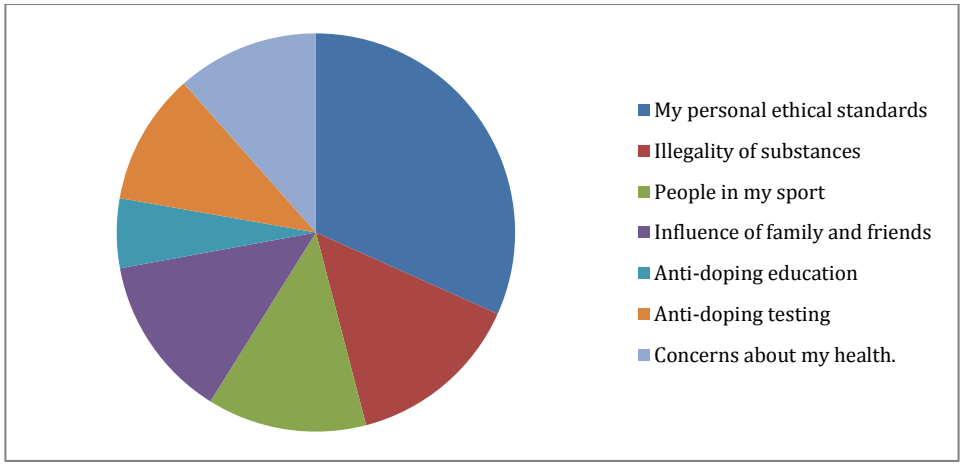

Figure 10. Individual athletes weighted attitudes – Physical

Unexpectedly, an interesting difference emerged across the sports when comparing the weight allocation to the 'people in sport factor'. As expected, team athletes suggested that this was an important factor (10.5%). However, physical individual athletes (e.g., endurance athletes; 14.2%) appear to have allocated not only more than the skilled athletes (5.1%) to this factor but also the team athletes. 'Personal ethical standards' also appeared to be a more important factor for individual athletes (skilled – 46%, physical – 32%) compared to team sport athletes (25%), supporting the qualitative findings presented earlier in this report. These findings suggest that different strategies may be applicable for athletes competing in different sports.

In regards to anti-doping education, all sporting groups suggested that they placed little value on anti-doping education as a factor that influenced their decision about doping; a finding that is consistent with the research findings throughout. However, a variance emerged across sporting groups at the anti-doping testing section. Although, team (8.8%) and physical (10.7%) individual sports presented similar results skilled athletes (e.g., tennis players; 6.3%) allocated a much smaller proportion. This finding may reflect the prevalence of anti-doping testing in some sports and the lack of testing in others.

Discussion

As expected the participants' responses across both studies reflected strong anti-doping attitudes across sports. For the most part, this decision about PEDs was made irrespective of long or short-term health implications (cf. Goldman & Klatz, 1992), sanctions, or testing procedures. Instead, personal ethical standards guided athletes' decision about doping in their sport with an overriding emphasis placed on the preference to 'participate clean rather than win dirty' expressed. This has interesting implications for the development of anti-doping strategies and how agencies such as WADA can influence athletes', and significant others, decision about PEDs.

Similarly, anti-doping testing and sanctions were not seen as a deterrent by the participants, though there were some differences across sports in this context. Track athletes, for example, suggested that testing was not a deterrent because 'if you were going to do it, you would do it right and not get caught' suggesting that there were ways around the current testing procedures employed. Similarly, many of the team sport athletes (e.g., rugby and soccer) suggested that the off-season offered an opportunity to take PEDs without the likelihood of getting caught or even tested. In fact, a significant minority of the athletes reported that they had never been tested. This was especially prevalent amongst development athletes who were just outside the 'elite' sphere. However, given that the transition from junior to senior levels in sport could be seen as a 'pressure point' for doping ensuring attention is paid to this cohort of athletes and influencing their attitudes about PEDs would seem an efficacious avenue to address.

The participants were realistic that, at least in some sports, many competitors were taking PEDs and that success at the world level was difficult for 'clean' athletes. Despite this, the overwhelming majority reported that they wouldn't take PEDs, not

primarily because they were banned or the likelihood of getting caught by WADA, but because cheating in this manner was against their personal ethical standards. This is not to say that the athletes wouldn't cheat in other ways (e.g., diving, shirt pulling), defined by the athletes as 'within the spirit, if not the rules of the game'. In fact, the athletes' stated reluctance to take legal supplements for purely performance enhancing reasons is interesting against the growing trend worldwide for such supplementation. For example, the endurance athletes were asked whether they would take thyroid medication to combat hypothyroidism. The majority responded that they wouldn't feel comfortable taking this supplement just to allow them train harder even when the supplementation was within legal limits. The athletes suggested that this crossed a line of fairness but did recognize that there 'shades of grey' in terms of this debate. For example, the participants recognized that other legal supplements such as creatine or caffeine also have performance enhancing effects but suggested that they are comfortable with these because they are available to all athletes. However, the complexity underpinning this decision making is worthy of attention as it, no doubt, has a significant impact on the athletes' attitudes to different performance enhancing supplements. In fact, the complexity of this issue is evident in the 'hypocritical' stance taken by some athletes about one substance and another suggesting that athletes' attitudes to PEDs is not as clear cut as whether a substance is legal or not.

The influence of the psycho-social environment and significant others on athletes' decision-making about doping was also noteworthy. As found elsewhere in the literature, participants suggested that doping was not a widespread problem within their training group or country. However, there were references to the extent of the problem in other countries, along with the suggestion that there was an 'anti-doping culture' in UK / Irish sport but this was less prevalent worldwide. In fact, the track and field and endurance athletes as well as the rugby players suggested that there 'systematic and organized doping' in other countries, similar to the 'sporting

xenophobia' described by Bloodworth and McNamee (2010). This 'doping dilemma' has been suggested to be a driving factor in PED usage since the associated suspicion that everyone else is using PEDs drives athletes to use to compete under the same circumstances. This finding from the current study does have interesting implications for anti-doping policies, however. Given the protective influence that coaches, significant others and the social milieu appear to play in an athletes' decision not to dope, emphasis at this social, rather than individual, level would seem important.

The identification of the factors that influence athletes' attitudes towards and beliefs about doping is important since attitude to doping is seen to influence athletes' intention to use PEDs (Gucciardi, *et al.,* 2011). Therefore, anti-doping education and policies need to impact on these attitudes and beliefs if they are to have an impact on athletes' PED usage.

Conclusions

This research sought to offer explanations of the reasons underpinning athletes' decision not to dope in sport. The results of the study should help inform policy makers about the reasons underpinning these decisions. In particular, these results should provide a useful foundation upon which WADA could base their anti-doping education and workshops. In particular, the importance on personal moral standards and how these impact on the athletes' decision making is certainly worthy of emphasis within anti-doping education. Furthermore, the importance placed by the participants on their psychosocial environment suggests that anti-doping education and policies that emphasis the social environment and significant other could have significant impact on doping attitudes. As such, these findings have the potential to inform educational initiatives designed to combat doping in sport outside the usual emphasis on sanctions and testing.

Recommendations

- Anti-doping education needs to be multifaceted and comprehensive beyond the traditional emphasis on testing, sanctions, and health implications.
- An increased emphasis on personal ethical standards and moral beliefs underlying attitudes to doping would seem a useful way to reduce susceptibility to PED usage, *at least in this cultural setting*.
- Reflecting the previous point, the impact and importance of the athletes' psychosocial environment should be considered and used as a basis for intervention.
- Differences in attitudes and intention to behave across sports should be considered in the development and implementation of anti-doping policy and strategy.
- Educational program that deal with the morality of PED usage are important. This might be especially important for younger athletes.
- Educational program should target the broader psychosocial group to include parents, coaches, and significant others.

Financial Report

Expense Category	Allocation	Actual Expenditure
Research Assistant	$16,750.00	$15,404.91
Supplies	$100.00	$0.00
Travel Expenses	$4,000.00	$2,827.58
Overheads	$4,150.00	$3,746.80
Totals	$25,000.00	$21,979.29

Dissemination of Results

In addition to this report, we plan on disseminating these findings through peer-reviewed publications as detailed below. In accordance with the terms of the research grant, draft publications will be submitted to WADA for review at least 30 days prior to submission for publication.

MacNamara, Á., Collins, D., & Collins, R. Why athletes say no to doping: A qualitative exploration of the reasons underpinning athletes' decision not to dope.

Collins, R., Bailey, R., & Collins, D. Doping in sport: A moral decision?

MacNamara, Á., Collins, D., & Collins, R. Understanding athletes' decision not to dope: Exploring reasons across sport, age, and experience.

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APPENDIX A.
INTERVIEW GUIDE

Why athletes say NO to doping

Examining the reasons underpinning athletes' decision not to dope

INTERVIEW PROCEDURE

Introduction

The purpose of this study is to investigate the reasons why athletes dope in sport. To do this we will conduct an interview asking you about your participation in sport, your experiences of doping and your attitudes / views on doping.

- Can I check that you have signed the consent form, please?
- Do you agree to being recorded for this interview?
-

Participation in this interview is voluntary, you can choose not to answer any question you wish and you can end the interview at any time.
All information gathered will be kept anonymous and any quotations used will not contain any identifying information.

REASON	QUESTIONS	PROBE	PROMPT
Experience of doping in your sport	In your opinion, how common is doping in your sport?	• at the elite level? • at developmental levels? • just to stay competitive? • How easy is it to access PEDs in your sport? • To what extent was doping discussed with your peers?	How prevalent is a doping culture? Is doping accepted practice in your spor?
	Have you been offerred PEDs during your career? Did you take PEDs?	• at what stage of your career? • By whom?	
	Were there key points during your career where you were tempted to dope?	• Injury • de-selection • start of career • attempting to prolong your career	
Reasons underpinning decision not to dope	What influenced your decision not to take PEDs?	Do you think taking PEDs would have made a difference to your sporting career?	Would you have been as successful anyway?
	If you knew others were doping and getting success, what stopped you?	Was the influence of other people close to you a key factor?	Who? Parents, peers, friends, teammates, coaches, role-

			models. Why was these individuals play such an important factor?
		To what extent was it a moral decision not to dope?	
		To what extent did social sanctions against doping influence your decision?	Feelings of shame Feelings of guilt
		Was ‘winning at all costs’ a driving factor for you throughout your career?	Were you more outcome focused or personally focused? Did this influence your decision to take PEDs?
		Did the long-term health consequences of doping influence your decision?	
		Did financial issues play a role in your decision?	Cost of an effective doping program? Long-term funding issues
		Did your future professional careers aspirations influence your decision?	
		How much of a deterrent were	How much was the fear of

		the testing procedures in place in your sport to your decision not to dope?	getting caught a deterrent? What are the consequences of getting caught doping for you?
		Did the criminalization of doping play a role in your decision not to take PEDs?	
		In your opinion how effective was any anti-doping education you received in making your decision not to dope?	
		Did you know enough about PEDs to influence your decision to dope?	Lack of access to quality PEDs Lack of knowledge about PEDs
		Other reasons?	Religious
Wrap Up	That is all my questions, is there anything that you would like to add? Do you have any questions or comments about what we have talked about?		

APPENDIX B.
'Why don't you dope?' Questionnaire

Athletes' Attitudes to Doping Questionnaire

Participant Information

Please read the information below thoroughly before deciding whether or not to participate in this study.

Purpose of this Study

Athletes understand the risks associated with doping in sport – the negative health consequences, the cheating aspect and the possibility of getting caught. Despite this, a significant proportion of athletes are prepared to take these risks, for a number of reasons. We are interested in understanding the reasons which give incentives not to dope – essentially 'what's in it for me NOT to dope?'.

Procedure

You will be asked to respond to a number of questions about your decisions regarding doping in sport. The questionnaire should take no longer than 30 minutes to complete.

Confidentiality

Please rest assured that all information gathered in this study will remain completely anonymous and strictly confidential. Your name will not be recorded or used in any part of this study.

Who is funding this study?

WADA (World Anti-Doping Agency) is funding this research.

Do you wish to proceed?

- Yes
- No

Demographic Information

In what year were you born?

What is your gender?

What is your main sport?

What is the highest level at which you have competed?

How many times have you been drug testing in the last 24 months?

Have you ever tested positive for Performance Enhancing Drugs?

Have you participated in anti-doping education?

Questionnaire

TO WHAT EXTENT DO YOU AGREE WITH THIS STATEMENT?	STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE
I see myself as a role model for others and this influences my behaviour						
I wouldn't take Performance Enhancing Drugs even if there were no testing procedures in place						
Other people look up to me and this affects my decision						
The likelihood of getting banned is a big factor in my decision not to take Performance Enhancing Drugs						
The side effects of Performance Enhancing Drugs influences my decision not to dope						
Anti-doping education hasn't influence my decision about taking Performance Enhancing Drugs						
I would never commit an illegal act or foul in my sport						
If a substance is banned then I won't take it						
The chance of getting caught is the main reason why I wouldn't take Performance Enhancing Drugs						
What others would think of me if I was caught taking Performance Enhancing Drugs is a deterrent						
The premeditation of doping makes it worse than other forms of cheating in my sport						
Taking Performance Enhancing Drugs is against my moral standards						
I would be letting down my group if I was caught doping						
If my team/sport doctor says I need a substance then I feel OK taking it						
I feel that taking Performance Enhancing Drugs is morally wrong						
My family is a significant influence on my decision not to take Performance Enhancing Drugs						
What others think about my decision regarding Performance Enhancing Drugs doesn't bother me						
Doping is much more common in other sports than in mine						
I feel uncomfortable taking supplements just for performance enhancing benefits						

I am a 'win at all costs' athlete						
What my peers think about doping influences my decision						
Doping is much more common in other countries than in mine						
Sanctions against doping are so light that using Performance Enhancing Drugs is a rational action						
I had already made my decision about Performance Enhancing Drugs before participating in any anti-doping education workshops						
Losing my funding acts as a deterrent for taking Performance Enhancing Drugs						
Anti-doping testing in the UK/Ireland is largely a waste of time and money						
I was really influenced by the anti-doping education I have received						
I will not cheat to win in my sport						
Some cheating is an inevitable part of high level sport						
If I knew there were no long-term health risks, I would take Performance Enhancing Drugs to improve my performance						
The shame of getting caught is a reason why I wouldn't take Performance Enhancing Drugs						
It is up to WADA to decide what is legal or not						
I have a responsibility to be a positive role model to others						
The advice I get from coaching and sport science staff influences my decision about Performance Enhancing Drugs						
The stigma associated with getting caught is a deterrent						
As long as everyone has access to a substance, then it is OK to take						
Anti-doping education workshops reinforced my decision about Performance Enhancing Drugs						
It isn't cheating to take a substance so long as this puts your body within normal and legal levels						
Anti-doping education just educates you about the testing procedures						
The sanction for getting caught doping is outweighed by the benefits						
My coach is a significant influence on my decision not to take Performance Enhancing Drugs						
Anti-doping education is an effective way to influence athletes' decision about Performance Enhancing Drugs						
My teammates are a significant influence on my decision not to take Performance Enhancing Drugs						
I will take any substance that is legal in my sport						

If I knew there were no short-term health risks, I would take Performance Enhancing Drugs to improve my performance						
There is a difference between taking substances that will keep you healthy and performance enhancing substances						
How Performance Enhancing Drugs might affect my long-term health influences my decision						
There are ways around the testing system for athletes who are taking Performance Enhancing Drugs						
Taking Performance Enhancing Drugs would tarnish my reputation as an athlete						
If a substance comes off the banned list then I would consider taking it						

How important are each of these factors to your decision NOT to take PEDs?

The following question asks you to divide 100 points between a 7 options to show the importance you place on each option. Distribute the 100 points, across the 7 options, giving the more important reasons a greater number of points. Please ensure your total equals exactly 100 points.

My Personal Ethical Standards	%
Illegality of Substances	%
People in my Sport	%
Influences of family and friends	%
Anti-doping education	%
Anti-doping testing	%
Concerns about my health	%

Completed Survey

Thank you very much for participating in this survey.
Your contribution is valued.
Should you have any questions regarding your participation, or wish to withdraw please get in touch.

Dave Collins (Principal Investigator), Professor, University of Central Lancashire
djcollins@uclan.ac.uk

If you have have any complaints or issues about the study please contact John Minten, Head of School, Sport, Tourism, and the Outdoors, UClan. Jhminten@uclan.ac.uk

If you wish to receive the results of this investigation please provide your email address: