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<b>Title</b>	A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs
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### Abstract

**Objectives:** To investigate the nature of doping confrontation efficacy (DCE) beliefs – as well as their antecedents and outcomes – through a qualitative examination of Sullivan, Feltz, LaForge-MacKenzie, and Hwang's (2015) DCE model with high-level technical and strength and conditioning (S&C) coaches from athletics and rugby union. **Design:** Qualitative, descriptive. **Methods:** Semi-structured interviews were conducted with 21 coaches (n<sub>male</sub> = 15; n<sub>female</sub> = 6; n<sub>technical</sub> = 11; n<sub>S&C</sub> = 10), working at a regional, national, or international level in athletics, rugby, or both sports. Study data were analyzed using a combination of deductive and inductive reasoning. **Results:** Data analysis supported the relevance of all five dimensions of DCE (i.e., personal resources, initiation, legitimacy, intimacy, and expected outcomes) to coaching practice in athletics and rugby, identifying key antecedents and outcomes of coach DCE beliefs relevant to one or more of the DCE sub-dimensions. Lower levels of DCE were linked with a reduced likelihood of confronting athletes on doping-related issues; coach education was viewed as a key antecedent of DCE. Deficits in coaches' anti-doping knowledge were also identified, supporting the need for improved anti-doping education for coaches. **Conclusion:** By conducting the first qualitative examination of DCE beliefs, we enriched understanding of the DCE model and identified a range of possible antecedents and outcomes of DCE beliefs in technical and S&C coaches. In achieving these aims, we can offer recommendations for revising and expanding the DCE model.

**Keywords** Performance-enhancing drugs; semi-structured interviews; coach behavior; coach-athlete relationship; coaching efficacy

**Manuscript category** Sport Performance

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December 21, 2018

Nikos Ntoumanis, PhD & Bernd Strauss, PhD  
Editors-in-Chief, *Psychology of Sport and Exercise*

Dear Professors Ntoumanis and Strauss:

I am enclosing a submission to *Psychology of Sport and Exercise* entitled “A Qualitative Investigation of Coaches’ Doping Confrontation Efficacy Beliefs”. The manuscript encompasses 7650 words (excluding abstract, table and references), one table and no figures. The same or substantially similar manuscript has not been simultaneously submitted for consideration by another journal or been previously published. My coauthors and I do not have any interests that might be interpreted as influencing the research, and APA ethical standards were followed in the conduct of the study.

I will be serving as the corresponding author for this manuscript. The authors listed in the byline have agreed to the byline order and to the submission of the manuscript in this form. I have assumed responsibility for keeping my coauthors informed of our progress through the editorial-review process, the content of the reviews, and any revisions made. I understand that, if accepted for publication, a certification of authorship form will be required that all coauthors will sign.

Thank you for considering this manuscript for publication to the *Psychology of Sport and Exercise*. I look forward to hearing from you in due course.

Sincerely,

Ian Boardley, PhD

## Highlights

- The first qualitative examination of doping confrontation efficacy beliefs was conducted
- Original insight on high-level coaches' doping confrontation efficacy beliefs is provided
- New antecedents and outcomes of coach doping confrontation efficacy beliefs are identified
- Novel contributions to the doping confrontation efficacy model are made
- Possible revisions to the doping confrontation efficacy model are proposed

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3 antecedents and outcomes – through a qualitative examination of Sullivan, Feltz, LaForge-MacKenzie,  
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20 expanding the DCE model.

21  
22 *Keywords:* Performance-enhancing drugs, semi-structured interviews, coach behavior, coach-athlete  
23 relationship, coaching efficacy.

A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs

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## **A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs**

Coaches represent an important social agent in sport, with significant potential to influence athlete development. Conceptual models of coaching suggest coach confidence is an important antecedent of coach behaviors leading to effective athlete development (Boardley, 2018; Feltz, Chase, Moritz, & Sullivan, 1999). A specific aspect of coach confidence relates to confidence in the ability to confront doping (Sullivan, Feltz, LaForge-Mackenzie, & Hwang, 2015). Doping refers to athletes' use of prohibited substances or methods that have the potential to artificially improve performance through changes in physical and/or mental condition (Laure, 1997). Given its potential for facilitating an unfair advantage over opponents and possible negative health effects, doping constitutes a significant issue in sport. As such, it is vital coaches develop the confidence to confront athletes on doping issues. The overall aim of the current research was to investigate the nature of such confidence, as well as factors that may influence and result from it.

Research to date supports the potential role of coaches in regulating doping in sport (e.g., Dodge & Robertson, 2004; Engelberg, Moston, & Blank, in press; Laure, Thouvenin, & Lecerf, 2001; Ntoumanis, Barkoukis, Gucciardi, & Chan, 2017). For instance, 98% of graduate professional coaches in France believed they have a role to play in preventing doping (Laure et al., 2001). However, of concern is that 80% considered themselves to be inadequately trained in doping prevention. Also of concern is research reporting athletes at times justify doping based upon coaching behaviors (Dodge & Robertson, 2004). This finding is supported by research demonstrating positive links between perceptions of controlling coach behaviors and doping intentions and doping behavior (Ntoumanis et al., 2017). Further, recent research interviewing elite-level coaches from a range of sports found many coaches showed evidence of very poor knowledge on key anti-doping control systems (Engelberg et al., in press). Thus, whilst the extant literature highlights the considerable

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1 potential coaches have to influence athlete doping, it also signifies coaches may not have the  
2 confidence or knowledge to effectively address doping issues with athletes.

3 A recent model of particular relevance to coaches' confidence in addressing doping is  
4 the doping confrontation efficacy (DCE) model proposed by Sullivan et al. (2015). Two  
5 theoretical frameworks were central to the development of this model. The first of these was  
6 the coaching efficacy model proposed by Feltz, Chase, Moritz, and Sullivan (1999).  
7 Coaching efficacy is defined as the extent of a coach's beliefs in his/her ability to impact the  
8 learning and performance of athletes. However, whilst it is a multidimensional construct, no  
9 dimension of coaching efficacy in Feltz et al.'s (1999) model directly relates to doping. Thus,  
10 Sullivan et al. (1999) argued for the need to develop a model of coach efficacy directly  
11 centered on coaches' confidence to confront athletes about possible doping.

12 The second theoretical framework Sullivan et al. (2015) adopted when developing  
13 their model was Newell and Stutman's (1988, 1991) social confrontation model. This model  
14 was selected because it conceptualizes a confrontation as an active discussion between the  
15 confronter and the confronted, rather than as a single act enacted by the confronter (Newell &  
16 Stutman, 1991). Further, effective confrontations should include discussion of not only the  
17 problem (i.e., possible doping in this case), but also possible causes and solutions. The  
18 confronter should also present the reasons for behavior change and express concern for the  
19 confronted, whilst avoiding personal attacks or criticisms (Malis & Roloff, 2007). However,  
20 whilst there was a sound theoretical basis for Sullivan et al.'s (2015) model, there was no  
21 actual engagement with coaches when developing the model. Thus, our understanding of the  
22 model may be enriched further through qualitative examination of its various components  
23 with coaches.

24 Given the various components of confrontations proposed in Newell and Stutman's  
25 (1988, 1991) guiding framework, Sullivan et al. (2015) proposed DCE as an overarching

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1 construct reflected in five lower-order dimensions. The first of these is initiation, which refers  
2 to coaches' beliefs in their ability to confront athletes regarding doping issues and establish  
3 the purpose (e.g., understand the athletes' respective, offer appropriate solutions) for the  
4 confrontation. In turn, efficacy regarding legitimacy is also important, relating to belief in a  
5 coach's ability to establish valid grounds for establishing a confrontation. Such grounds are  
6 whether the athlete has violated a rule and whether the infringed rule is relevant. Next,  
7 coaches need to be confident they have the personal resources (i.e., time, energy, and  
8 information) required to cope effectively with the cognitive and emotional demands involved  
9 in confrontations (see Reznik, Roloff, & Waite Miller, 2010). The fourth sub-dimension is  
10 intimacy, pertaining to coaches' confidence in their ability to confront athletes without  
11 appearing judgmental, which could threaten the coach-athlete relationship. Finally, expected  
12 outcomes relate to coaches' beliefs in their ability to confront athletes despite the possibility  
13 of both positive (e.g., cessation of intention to dope) and negative (e.g., weakening of the  
14 coach-athlete relationship) outcomes. These five lower-order dimensions sit under the  
15 overarching DCE construct, which represents the extent to which coaches believe in their  
16 abilities to effectively confront athletes regarding doping and offer appropriate solutions  
17 (Sullivan et al., 2015).

18       Based upon the nature of the five sub-dimensions, it is possible to identify some  
19 possible antecedents of coach DCE beliefs. For example, coaches are likely to have elevated  
20 levels of legitimacy beliefs if they have reliable information on the issue tied to a  
21 forthcoming player confrontation (Newell & Stutman, 1991; Sullivan et al., 2015). If a coach  
22 has dependable evidence that an athlete has violated an anti-doping rule, it is legitimate to  
23 confront the athlete on this issue. Also, coaches' personal resources beliefs are likely to be  
24 higher if they are well educated on doping issues, as this should increase their abilities to  
25 clearly communicate and defend their position (see Reznik, Roloff, Waite, & Miller, 2010).

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1 Further, adequate space within coaches' workloads should underpin the time element of  
2 personal resources. A final example antecedent of DCE may be empathy, which could be  
3 important in bolstering intimacy beliefs. The ability to understand and experience an athlete's  
4 possible responses to being confronted should promote coaches' confidence in the ability to  
5 provide support for the athlete and avoid the confrontation being viewed as a personal attack  
6 (see Malis & Roloff, 2007). Despite the importance of understanding factors that may  
7 influence coaches' DCE beliefs, researchers to date have not examined possible antecedents  
8 of these beliefs.

9         There are also several possible outcomes of coach DCE beliefs. For instance,  
10 heightened levels of initiation should lead to more effective openings to confrontations,  
11 increasing the likelihood that confronted athletes will fully understand the purpose of the  
12 confrontation (Newell & Stutman, 1991; Sullivan et al., 2015). Next, coaches with elevated  
13 levels of legitimacy should be more likely to initiate a confrontation (Malis & Roloff, 2007;  
14 Reznik & Roloff, 2009). Similarly, coaches who are low in expected outcomes may be more  
15 likely to avoid confrontations if they anticipate negative outcomes stemming from them (see  
16 Caughlin & Afifi, 2004). However, as with possible antecedents, researchers have not thus  
17 far examined coaches' perspectives on possible outcomes of DCE beliefs.

18         Although researchers have not yet examined direct outcomes of coach DCE beliefs,  
19 athlete attitudes towards doping have been examined as a possible outcome of athlete  
20 perceptions of coach DCE beliefs. Weak-to-moderate negative associations have been  
21 observed between athletes' perceptions of their coaches on all five dimensions of DCE and  
22 their attitudes towards doping (Sullivan & Razavi, 2017). Thus, as levels of perceived coach  
23 DCE are higher, athletes show less positive attitudes towards doping. Based upon the revised  
24 coaching efficacy model (see Boardley, 2018), it is possible athlete perceptions of coach  
25 DCE are influenced by observations of relevant coaching behaviors. For instance, heightened

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1 athlete perceptions of coach DCE may result from athletes frequently observing coach  
2 behaviors that explicitly deter use of performance enhancing drugs (Sullivan et al., 2015).  
3 Such behaviors reflect negative coach attitudes toward doping, attitudes that may be come to  
4 be internalized by athletes. Thus, in the absence of more direct evidence, the findings of  
5 Sullivan and Razavi (2017) provide indirect support for the possibility that elevated levels of  
6 coach DCE may be linked with desirable outcomes for coach behavior.

7         Although the DCE model proposed by Sullivan et al. (2015) has clear potential to  
8 inform understanding of belief systems that underpin coaching behaviors relevant to doping,  
9 to date researchers have not qualitatively examined this model. As a result, we have little  
10 understanding of how coaches perceive the different components of DCE. Thus, one aim of  
11 the current research was to investigate the nature of DCE beliefs from the perspective of  
12 coaches. Also, researchers have thus far not investigated factors that may influence and stem  
13 from DCE beliefs. It is therefore possible there are important factors beyond those proposed  
14 by Sullivan et al. (2015) that could be added to the model. Thus, a second aim was to identify  
15 and examine possible antecedents and outcomes of DCE beliefs through qualitative  
16 interviews with coaches. In doing so, we sought to identify which antecedents are most  
17 salient and which outcomes are most prominent, from the perspective of coaches.  
18 Specifically, we conducted interviews with high-level coaches as we believed such coaches  
19 to be well positioned to comment on factors relevant to doping due to the relevance of this  
20 issue at the elite level.

21         A further limitation in current research is that the potential impact of S&C coaches on  
22 athlete doping has largely been neglected. Instead, studies designed to investigate the effect  
23 of coaching on athlete doping have exclusively focused on technical (i.e., head) coaches.  
24 However, S&C coaches may be well placed to influence athlete doping, with some research  
25 even suggesting S&C coaches are potential suppliers of doping substances (Engelberg et al.,

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in press). This is likely due to coaches working predominantly in gymnasias, environments in which doping is uniquely prevalent (Boardley, Smith, Mills, Grix, & Wynne, 2017; Sjöqvist, Garle, & Rane, 2008). Because S&C coaches generally interact with athletes in environments in which doping is more pervasive than other sport training environments, S&C coaches may be ideally situated to confront and guide athletes on doping issues. Thus, research investigating coach influences on doping should consider the potential influence of S&C coaches alongside that of technical coaches. When addressing the main aims of the study, we examined the perspectives of both technical and S&C coaches accordingly.

## Method

### Participants

Twenty-one coaches participated in the study ( $n_{\text{male}} = 15$ ,  $n_{\text{female}} = 6$ ;  $n_{\text{technical}} = 11$ ,  $n_{\text{S&C}} = 10$ ). Coaches' ages ranged from 27 to 72 years ( $M = 38.1$ ); they worked at a regional ( $n = 8$ ), national ( $n = 7$ ), or international ( $n = 6$ ) level in either athletics ( $n = 5$ ), rugby ( $n = 13$ ), or both sports ( $n = 3$ ). These sports were selected because relatively high percentages of adverse analytical findings have been reported for their athletes (World Anti-Doping Agency, 2013) and they utilize both technical and S&C coaches. See Table 1 for details for each coach.

### Interview Schedule

Interviews were based on a protocol aimed at identifying themes relating to the five dimensions of DCE defined by Sullivan et al. (2015). Specifically, the interview protocol opened with introductory comments, definitions of key terms (e.g., performance enhancing drugs, doping) to be used during the interview, and a brief discussion of the interviewee's coaching history. Following this, open-ended questions on doping in general (e.g. "In general, what do you think are the main reasons athletes in your sport use performance enhancing drugs?"; "What are your thoughts regarding the morality of using performance enhancing drugs?"), were posed, followed by more targeted questions regarding DCE beliefs

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1 (e.g., “What things are likely to influence a coach’s abilities to ask an athlete if they have  
2 used performance enhancing drugs?”; “How confident are you in your ability to confront an  
3 athlete about doping whilst avoiding personal criticism?”; “How confident are you in your  
4 ability to establish the reason for confronting an athlete about doping?”). The interview then  
5 closed with an opportunity for the interviewee to discuss any further topics believed to be  
6 relevant to the topics discussed during the interview.

### 7 **Procedures and Interviewer**

8 Participants were recruited by contacting UK governing bodies for the two sports, as well as  
9 the English Institute of Sport and asking them to provide potential participants with details of  
10 the study and the contact details for members of the research team. Existing contacts within  
11 the research team were also used to recruit participants. Finally, several clubs were contacted  
12 directly using publicly available contact information to recruit participants. Once contact was  
13 made, all potential participants were fully informed regarding the aims of the research and  
14 what participation would involve, as well as what would be done with the data collected.  
15 Upon receipt of participant consent, semi-structured interviews were conducted face-to-face  
16 and in private by a research associate who followed a pre-determined schedule. Interviews  
17 were recorded using a Dictaphone and lasted 28 to 52 minutes ( $M = 37$  minutes). Interviews  
18 were subsequently transcribed verbatim by the research associate.

19 The research associate was an experienced qualitative interviewer, and also had  
20 considerable experience in sport and in the field of anti-doping. Specifically, he had  
21 competed to a high level in both individual and team sports, and had also worked for several  
22 years as an anti-doping educator for a major National Anti-Doping Organization. Factors  
23 such as these potentially influence status in athletic subcultures and therefore may affect  
24 acceptance within them (see Woodward, 2008). The interviewer’s sport experience and

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familiarity with the research topic allowed him to be easily accepted and trusted by interviewees, increasing the likelihood of participants responding openly and honestly.

### **Data Analysis**

Study data were largely analyzed using deductive reasoning with directed content analysis, appropriate when examining a specific model using qualitative data (Hsieh & Shannon, 2005). This involved the application of operational definitions (see introduction for definitions) for the five dimensions of DCE when content-analyzing the data. The second author content analyzed the data by reading each transcript and highlighting all text that appeared to represent one of the dimensions of DCE; highlighted passages were then coded according to the predetermined codes (see Hsieh & Shannon 2005). Although data were largely analyzed using deductive reasoning, inductive coding was also used when relevant data could not be coded directly into one of the five DCE dimensions. This latter approach allowed for discovery of novel – as opposed to purely confirmatory – observations, as well as allowing us to identify antecedents and outcomes of DCE beliefs.

The unit of coding used throughout data analysis was the complete response to a question. This unit of coding was chosen to ensure that each response was coded whilst taking into account each entire response, therefore preventing loss of context which may have occurred if we had coded individual sentences. To ensure relevant sections were consistently being identified and linked to the relevant definition/s, the first author coded five of the interviews previously coded by the second author. The first and second authors then met to compare findings, and were in agreement that relevant sections were consistently being identified and linked to the relevant definition/s.

### **Results**

In the following sub-sections, we present the results for each of the pre-determined categories, based upon the DCE model proposed by Sullivan et al. (2015). The numbers that



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1 follow exemplar quotes refer to the interviewee number (see Table 1). Within each sub-  
2 section, discussion of the sub-dimension itself is followed by any antecedents or outcomes of  
3 it. Where appropriate, square brackets [] have been used to add additional words or phrases to  
4 clarify quotes.

### 5 **Initiation**

6 Confidence in the ability to effectively initiate a confrontation is considered crucial when  
7 confronting someone on sensitive topics, as only when the target recognizes the confronter's  
8 purpose does the conversation become a confrontational episode (Newell & Stutman, 1991).  
9 For this reason, it is important that coaches can successfully communicate their intent when  
10 confronting athletes regarding issues relating to doping.

11 In general, coaches were confident in their ability to effectively communicate their  
12 purpose when confronting potential doping. For many, one purpose centered on finding out  
13 why an athlete would want to dope. For instance, TC3 said, 'the whole thing with me is  
14 what's driving you [the athlete]'. Although it would be easy to assume what is driving the  
15 athlete to dope would be obvious (i.e., performance enhancement), coaches were generally  
16 aware this was not necessarily the case, showing awareness that some drugs can be taken to  
17 enhance image rather than performance. This was evidenced by TC8 when she commented,  
18 'they might not be doing it for rugby reasons'.

19 Another key purpose for some coaches was to highlight the risks that doping can pose  
20 for athletes. For example, TC6 said his aim would be to 'highlight the risks of it, the potential  
21 consequences...'. The underlying implication being that, by making salient the potential  
22 risks, a coach can deter an athlete from doping. The objectives of other coaches were aligned  
23 with this underlying aim. For instance, TC4 explained that for him, 'that player has to leave  
24 the room with an understanding that a) he doesn't need to go down that route, and b) what the  
25 alternatives are'. Consistent with purposes highlighted to this point, S&C4 suggested she

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1 would, 'try to understand why they felt that [the need to dope], and try to sort of convince  
2 them that this was not a good idea'.

3         Regarding possible antecedents, there was evidence that for some coaches personal  
4 morality was a key factor motivating the desire to initiate a confrontation. Specifically, TC2  
5 explained 'I think you got a moral obligation to yourself haven't you [to initiate a  
6 confrontation]'. That doping was viewed as morally abhorrent by some coaches was also  
7 evidenced by TC11 and TC6, respectively, who stated 'I genuinely detest it...I just can't  
8 stand cheats' and 'I'm totally against it...it's cheating isn't it'. Aligned with these views, the  
9 unfair competitive advantage stemming from doping would encourage confronting possible  
10 doping for TC2, '...because I think of the boys who lost medals as a result of it [others  
11 doping]'. Thus, being morally opposed to doping may be a strong motivating factor for  
12 developing confidence in the ability to initiate doping confrontations for some coaches.

### 13 **Legitimacy**

14 As well as being confident in their ability to effectively initiate a confrontation, it is also  
15 important coaches believe they are capable of establishing legitimate grounds for a  
16 confrontation. Given there is only really a single basis for initiating a doping confrontation  
17 (i.e., evidence of potential doping), discussion of this sub-dimension centered largely on  
18 antecedents and outcomes of the belief, rather than the belief itself. In terms of antecedents,  
19 the primary contributor to this belief appeared to be the degree of evidence relating to  
20 possible doping. Highlighting its perceived importance, one coach went as far as to make a  
21 clear distinction between situations in which an athlete is suspected of a doping violation and  
22 a situation where someone is known to be doping, with legitimacy beliefs likely to be far  
23 stronger in the latter situation than the former. When making this distinction, S&C9  
24 suggested that when doping was only suspected, 'I dunno how I'd approach that  
25 conversation.... I'm not sure that it'll be something I feel comfortable confronting an athlete

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1 about...’, whereas in the latter situation [known to be doping] he ‘... wouldn’t have any  
2 problems...’. As such, coaches’ legitimacy beliefs may be stronger when they have clear  
3 evidence of an athlete doping, and a key outcome of such legitimacy beliefs may be the  
4 likelihood of the coach actually initiating a confrontation.

### 5 **Personal Resources**

6 Beyond legitimacy, confidence in having the personal resources (i.e., time, energy, and  
7 information) to cope effectively with the cognitive and emotional demands involved in  
8 confrontations may also be important for coaches’ DCE beliefs. There were clear differences  
9 among coaches on the degree to which they believed they possessed such resources. Again –  
10 as with legitimacy beliefs – the main foci during interviews were the likely antecedents and  
11 outcomes of the belief rather than the nature of the belief itself.

12 In terms of antecedents relating to informational resources, anti-doping education was  
13 important for several coaches. Such education allows coaches to learn information about anti-  
14 doping (e.g., different types of doping rule violations) that may be critical during doping  
15 confrontations. However, whilst several coaches identified the importance of anti-doping  
16 education, there was clear evidence this didn’t necessarily translate to coaches engaging with  
17 sufficient education to develop adequate knowledge on doping. For instance, coaches were  
18 not consistently aware of important resources for coaches and athletes (e.g., Informed Sport  
19 or Global DRO), mixed up the two, or did not know where to source or find out about such  
20 information. It would seem questionable whether coaches lacking in such basic information  
21 would have the informational resources necessary to cope effectively with a challenging  
22 doping confrontation.

23 Some coaches acknowledged a desire to enhance their knowledge on anti-doping, but  
24 then implicated a lack of time to sufficiently engage with relevant education programs to

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1 satisfy this desire. For instance, when discussing informational personal resources he would  
2 like to develop, S&C3 said,

3 ...nutrition is something that, from my personal perspective I need to know  
4 more about and obviously the whole banned substance thing, I mean that's  
5 continually evolving as well.

6 However, despite acknowledging the importance of developing such knowledge, he then  
7 indicated he may not be able to develop such knowledge because of the danger of 'spreading  
8 yourself too thin', suggesting 'it's a time constraint type thing'. Thus, it seems a perceived  
9 lack of time may inhibit effective engagement with anti-doping education for some coaches.  
10 Related to this, some coaches who had received anti-doping education demonstrated limited  
11 continued engagement with it, which may again limit their informational resources. For  
12 instance, S&C1 described '...we took umm, the...was it the UK Anti-Doping Agency test?'  
13 before going on to admit '... I need to do it again actually'. The implication here being  
14 engagement with anti-doping education was not viewed as a priority.

15 Providing another possible explanation for inadequate anti-doping education in  
16 coaches, TC3 suggested a lack of financial investment was also an issue,

17 I don't think there is enough money invested in education in the UK; I  
18 certainly don't think it's in athletics... I think more money needs to be  
19 invested in the education of coaches... There should be almost like CPD  
20 [continued professional development]; it should form part of your license to  
21 be able to be involved in that world.

22 Thus, whilst some coaches appeared to have the informational personal resources to confront  
23 athletes on doping issues, more financial investment may be needed to ensure consistency  
24 across the community of coaches with respect to capacity to confront doping.

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1 For those coaches who did feel suited to confront athletes on doping issues, personal  
2 experience also appeared to be an important source of personal resource beliefs. For instance,  
3 TC10 believed her international career in rugby would make her the obvious choice to  
4 confront athletes on doping issues, stating ‘...I think that’s why it would be me [the one to  
5 speak to athletes] ...because I used to play internationally’. The implication being that her  
6 background as an international-level player gave her skills that would help her cope  
7 effectively during a doping confrontation. Similarly, S&C10 suggested he possessed the  
8 knowledge and expertise to cope effectively during doping confrontations, stating ‘I feel  
9 comfortable enough that if the situation did come about... the correct course of action would  
10 be taken’. Here, having established networks was of particular importance, ensuring ‘you  
11 know the right connections and the people’. Thus, past experiences as an athlete and  
12 established networks may also be important antecedents of coaches’ beliefs around personal  
13 resources.

14 In terms of possible outcomes, coaches with weak personal resource beliefs described  
15 a tendency to outsource responsibility for confronting athletes on doping issues to other  
16 members of staff. For example, a technical coach from rugby reported ‘I’d pass the buck. I’d  
17 just get the S&C Coach in’ (TC11). Similarly, another technical coach – TC6 – said, ‘...I’d  
18 have to go through the S&C’. Interestingly though, despite some technical coaches  
19 suggesting S&C coaches are better placed to confront doping than them, several S&C  
20 coaches themselves described how they would pass the issue on to others. For example,  
21 S&C10 explained that if he was told of someone who was considering doping, he would  
22 ‘probably go through the channels that are appropriate, direct to my line manager....’ Thus,  
23 lack of belief in the personal resources required to cope effectively with doping  
24 confrontations may increase the likelihood a coach will pass doping-related issues on to  
25 others rather than deal with them personally.

**Intimacy**

As well as feeling capable of coping with the demands of confrontations, coaches' belief in their ability to confront an athlete without appearing judgmental and the confrontation being viewed as a personal attack is also potentially important. For instance, elevated intimacy beliefs are thought to increase the likelihood that coaches will look to assist athletes regarding doping issues, regardless of whether such assistance is requested or not (Sullivan et al., 2015). This is because the abilities that likely underpin such beliefs should ensure coaches feel able to confront an athlete without fear of threatening the coach-athlete relationship.

Levels of intimacy efficacy were generally high, and those who had strong intimacy beliefs openly discussed some of the approaches and interpersonal skills that may underpin such beliefs. This was seen with TC10, who explained how 'it's just the environment that you create...I would definitely bring it up with a player just to say, "can I help in any way?"'. Going on to provide actual examples of how she would approach confrontations, TC10 stated how she would ask questions such as 'What can we do or put in place to help you get over it [the desire to dope]?''. Similarly, TC11 stated he'd '... probably approach it from a personable side....', and S&C4 pointed out how he would, 'help them and try to understand why they felt that'. Along similar lines, TC8 suggested, 'I think you gotta open up a two-way communication with the person...?'.

A number of the approaches described above highlight the potential importance of a possible antecedent of intimacy beliefs that emerged through the interviews, that of empathy. In particular, the ability to demonstrate empathy during a doping confrontation seemed of importance, as showing understanding of the factors that could lead an athlete to consider doping was thought to prevent the coach-athlete relationship being undermined during a confrontation episode. For instance, S&C2 suggested 'I think it's important to empathize about their reasoning [why they wish to dope], try and understand what they want to gain

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1 from it'. As far as we can generalize from our respondents, it did seem female coaches  
2 described the need for empathy and understanding more than males did. However, this was  
3 also seen with some male coaches. Thus, empathy appeared to be an important antecedent of  
4 intimacy beliefs.

5 One further antecedent of intimacy beliefs was the strength of pre-existing coach-  
6 athlete relationships. This was seen with both technical and S&C coaches believing that  
7 having established strength in coach-athlete relationships means you can discuss sensitive  
8 topics more easily with an athlete without the confrontation being seen as a personal attack.  
9 For instance, S&C6 put forward that '.... a big part of the role is creating relationships with  
10 the players... we've got good, strong relationships with them'. Similarly, a female coach  
11 (TC10) related how she knows many players inside out, including their personal lives and  
12 following them on social media, thus 'I think it's knowing your players...you create that  
13 personal relationship'. Thus, it is possible having existing strength in the coach-athlete  
14 relationship may bolster intimacy beliefs in advance of a confrontation as it makes it easier to  
15 maintain a strong connection during the confrontational episode.

### 16 **Expected Outcomes**

17 Finally, expected outcomes relate to coaches' beliefs in their ability to confront athletes  
18 regardless of the possible outcomes, be those positive or negative. Such outcomes can include  
19 cessation or persistence of doping, strengthening or weakening of the coach-athlete  
20 relationship, and improved understanding of the viewpoints of both partners within the  
21 coach-athlete dyad (Sullivan et al., 2015). Across the sample levels of expected outcome  
22 beliefs fluctuated markedly, and perhaps unsurprisingly it was primarily the possible negative  
23 outcomes stemming from confrontations that had the potential to undermine such beliefs. For  
24 instance, S&C2 illustrated a degree of reticence around initiating a doping confrontation if  
25 there was potential for trust to be undermined. Specifically, she suggested if this occurred,

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1 'they're not gonna confide in you again about anything'. That is, confrontations could lead to  
2 athlete trust in the coach being undermined, thus leading to a weakened coach-athlete  
3 relationship associated with a lack of openness in the future. Similar in some ways, TC3  
4 expressed concern that doping confrontations could negatively impact the coach-athlete  
5 relationship by undermining the coach's trust in the athlete. Specifically, he described how  
6 following a confrontation he may remain suspicious of the athlete,

7 ...the problem for me is if that conversation isn't an open conversation....

8 isn't open and honest.... I would be pretty wary, and I will be having a very

9 close watch on those people...

10 Thus, the degree of potential damage to trust within the coach-athlete relationship appears to  
11 undermine expected outcome beliefs.

12 An associated but distinct theme also emerged exclusively amongst S&C coaches,  
13 expressing how negative outcomes may also stem from not confronting suspected doping and  
14 such possibilities only strengthen their resolve to confront suspected doping. Specifically,  
15 several S&C coaches described how not addressing doping could have negative implications  
16 for the coach and/or team in terms of employment and reputation damage. For instance,  
17 S&C7 described,

18 ...we don't want to be affiliated with anybody that's either doping or had got

19 the stigma around them in terms of you know being caught for something...

20 Consistent with this view, S&C5 expressed how,

21 ...it puts your job on the line, puts the club you know and everyone else's job

22 on the line as well...

23 Further, and along similar lines, S&C8 explained,

24 I wouldn't on a professional level allow myself to be put in a position where I

25 was seen to be condoning the use of [drugs]...



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1 Finally, in terms of possible reputation damage, S&C2 described how,

2 I have a good reputation as a coach. I have no reason to compromise that...

3 why would I want to be working with somebody that would ultimately bring

4 that down?

5 Thus, although several coaches expressed reticence around expected outcome beliefs

6 because of the potential for damage to the coach-athlete relationship, others considered

7 potential negative outcomes stemming from doping confrontations were worth the risk when

8 compared against the possible detrimental outcomes stemming from not acting. In general,

9 preserving the coach-athlete relationship was of greater importance to technical coaches,

10 whereas avoiding potential reputation damage was a priority for S&C coaches.

## 11 Discussion

12 The current study provided an in-depth investigation of the DCE model in 21 high-level

13 technical and S&C coaches from rugby and athletics, contributing important information on

14 coach perceptions of DCE as well as potential influences and outcomes of DCE sub-

15 dimensions. In doing so, this work makes a number of important contributions to the

16 literature. First, our analyses provided the first qualitative accounts of the five dimensions of

17 DCE proposed by Sullivan et al. (2015). Next, by identifying key antecedents of DCE we

18 have identified possible ways that coach DCE beliefs can be enhanced. Further, the outcomes

19 of DCE beliefs that we discovered highlight the potential importance of developing coach

20 DCE beliefs. Finally, we identified several aspects of the DCE model that could potentially

21 be developed and/or improved. Each of these contributions is discussed in more detail over

22 the ensuing paragraphs.

### 23 Strength of DCE Beliefs

24 In terms of the levels of coaches' efficacy beliefs, beliefs relating to initiation and intimacy

25 were most consistent, which may be because the foundations for such beliefs are less

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1 situation dependent than for the other three beliefs. Regarding initiation, most coaches were  
2 generally confident they could clearly articulate the purpose/s they would outline when  
3 initiating confrontations. The main purposes espoused included understanding why athletes  
4 may be considering doping, highlighting the risks of doping, and changing athletes' minds  
5 about choosing to dope. Consistent with these findings, research has found coaches have an  
6 aspiration to influence athletes' doping-related decisions (Ntoumanis, Brooke, Barkoukis, &  
7 Gucciardi, 2015), and view negative health consequences as a strong deterrent to doping  
8 (Backhouse & McKenna, 2012).

9         With respect to intimacy, the majority of coaches recognized and felt confident in the  
10 interpersonal skills that underpin intimacy beliefs. Such skills include the ability to  
11 communicate effectively, and form and maintain positive binds with athletes both inside and  
12 outside of sport (Bowes & Jones, 2006). Given the coaches interviewed were of a high  
13 standard, it is perhaps unsurprising that most coaches felt confident in their interpersonal  
14 skills given such skills are considered a key component of effective and expert coaching (see  
15 Côté & Gilbert, 2009). The potential importance of coaches having strong intimacy beliefs is  
16 highlighted by research that has shown that strong personal relationships between coaches  
17 and athletes may be an important protective factor against doping (Dimeo, Allen, Taylor,  
18 Dixon, & Robinson, 2012).

19         In contrast to initiation and intimacy, levels of expected outcomes beliefs (i.e.,  
20 coaches' confidence in their ability to confront athletes regardless of possible positive or  
21 negative outcomes) were more variable. A potential negative outcome that concerned several  
22 coaches was the potential for a damaging effect on trust within the coach-athlete relationship.  
23 As a result, some coaches expressed a degree of reticence regarding confronting athletes  
24 because of such potential consequences. However, countering this were the possible negative  
25 consequences that could stem from not confronting possible doping. Namely, these related to

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1 the stigma attached to doping, and the damaging effect of not addressing doping for a coach's  
2 or club's reputation. Such reference to the stigma of doping was a sub-theme that came up in  
3 many interviews and one that has also arisen in previous qualitative research with athletes  
4 (Dimeo et al., 2012). Presently, this stigma appeared to serve a positive self-regulatory  
5 function, as some coaches felt confident they would confront possible doping despite possible  
6 negative consequences because the repercussions of not doing so may be worse. As such,  
7 coaches' expected outcome beliefs may ultimately result from a cost-benefit analysis  
8 regarding the possible consequences of confronting doping versus those stemming from not  
9 doing so.

### 10 **Antecedents of DCE Beliefs**

11 For some dimensions of DCE, data themes related more to antecedents and outcomes of  
12 beliefs rather than on the belief itself. This was the case for legitimacy beliefs, for which  
13 coaches tended to find it hard to categorically determine the strength of their beliefs. This was  
14 largely because they perceived their efficacy beliefs for this dimension to be very situation  
15 dependent. In particular, coaches felt the degree of evidence they had to suspect an athlete  
16 was doping would heavily influence the degree to which they would feel confident in their  
17 ability to establish strong grounds for a confrontation. Given legitimacy relates to whether the  
18 target (i.e., athlete) has broken a rule (see Newell & Stutman, 1991), it is perhaps not  
19 surprising that levels on this dimension would be highly dependent upon the degree of  
20 evidence supporting an anti-doping rule infringement in any particular case. However, given  
21 coaches may still find themselves in situations where they are required to speak with an  
22 athlete about suspected doping without strong evidence, it may be useful to develop  
23 interventions that help coaches deal effectively with such situations. For example, guidance  
24 could be offered on what constitutes a sufficient degree of evidence to support moving  
25 forward with a confrontation, and the best approaches to gathering such evidence. Based

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1 upon our findings, effective evidence gathering would help bolster legitimacy beliefs before a  
1244  
1245 2 confrontation is initiated. Maximizing legitimacy prior to a confrontation is likely important,  
1246  
1247 3 as these beliefs have been positively linked with greater use of direct support mechanisms  
1248  
1249 4 (Reznik & Roloff, 2009) and positive resolutions following confrontations (Newell &  
1250  
1251 5 Stutman, 1988).

1253 6 Consistent with one of our presuppositions, several coaches expressed how the coach-  
1254  
1255 7 athlete relationship could be maintained more effectively (i.e., therefore supporting intimacy  
1256  
1257 8 beliefs) if coaches have high levels of empathy. Specifically, a number of participants  
1258  
1259 9 suggested that when coaches are able to demonstrate their empathy and understanding of the  
1260  
1261 10 athlete's situation, athletes are less likely to view the coach as being judgmental, and consider  
1262  
1263 11 the confrontation a personal attack. In concert with these views, empathy reflects the ability  
1264  
1265 12 to share and experience someone else's feelings, and has been associated with increased  
1266  
1267 13 likelihood of engaging in helping behaviors (Eisenberg, Eggum, & Di Giunta, 2010). This  
1268  
1269 14 finding adds to a burgeoning literature highlighting the potential importance of empathy for  
1270  
1271 15 engagement in appropriate and desirable coaching behaviors (e.g., Matosic, Ntoumanis,  
1272  
1273 16 Boardley, Sedikides, Stewart, & Chatzisarantis, 2017).

1276 17 Strong themes relating to possible antecedents also emerged for personal resource  
1277  
1278 18 beliefs (i.e., whether coaches have the personal resources [i.e., time, energy, and information]  
1279  
1280 19 required to cope effectively with the cognitive and emotional demands involved in  
1281  
1282 20 confrontations; Newell & Stutman, 1991). Interestingly, whilst most coaches acknowledged  
1283  
1284 21 the importance of coaches having a good knowledge and understanding of anti-doping, many  
1285  
1286 22 also suggested they didn't have the time to achieve or maintain such knowledge. Thus, it  
1287  
1288 23 seems limitations in one personal resource (i.e., time) may be contributing to deficits in  
1289  
1290 24 another (i.e., information). Our findings here corresponded with past research showing that  
1291  
1292 25 whilst coaches acknowledge the potential importance of being knowledgeable regarding anti-  
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1 doping, they do not see it as a high priority (e.g., Engelberg & Moston, 2016; Mazanov,  
2 Backhouse, Connor, Hemphill, & Quirk, 2014), to be of personal relevance (Patterson, Duffy,  
3 & Backhouse, 2014), and may even view anti-doping education as a ‘box-ticking exercise’  
4 that is largely a waste of time (Dimeo, Allen, Taylor, Dixon, & Robinson, 2011). Further,  
5 studies that have considered specific aspects of coaches’ knowledge on anti-doping have  
6 identified deficits in knowledge relevant to substances and their effect on performance  
7 (Blank, Leichtfried, Fürhapter, Müller, & Schobersberger, 2014; Fung & Yuan, 2006), as  
8 well as on key anti-doping control systems such as the biological blood passport and the  
9 whereabouts system (Engelberg et al., in press). Thus, governing bodies may need to place an  
10 increased organizational emphasis on anti-doping education to highlight its importance and  
11 relevance, and encourage coaches to prioritize anti-doping education over other  
12 responsibilities by ensuring they have the requisite time, energy, and financial support.

### 13 **Outcomes of DCE Beliefs**

14 Data analysis also identified several possible outcomes of DCE beliefs. One of the  
15 most positive of these was for the athlete to cease doping or desist from considering doping.  
16 This finding provides strong support for Sullivan et al.’s (2015) model given cessation of  
17 doping was one of the primary outcomes proposed in the model. For many coaches, the way  
18 in which they would seek to achieve such outcomes would be to provide athletes with  
19 information on alternatives to doping, such as improved training techniques, appropriate use  
20 of nutritional supplements, and improved dietary support. This was an encouraging finding  
21 given the evidence supporting the efficacy of such approaches. Specifically, effective anti-  
22 doping education programs often include alternatives to doping (Backhouse, McKenna,  
23 Robinson, & Atkin, 2007). An example of this is a school-based anti-doping intervention that  
24 incorporates a module on *nutrition as an alternative to doping* which was found to be  
25 effective in weakening attitudes towards doping in Greek high-school children (Barkoukis,

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1 Kartali, Lazuras, & Tsorbatzoudis, 2016). As such, ensuring coaches are adequately educated  
2 on the most effective alternatives to doping could be an effective means of improving DCE  
3 outcomes.

4 Not all of the proposed outcomes were positive though. With respect to expected  
5 outcomes, coaches who feared confrontations may lead to a breakdown in the quality of the  
6 coach-athlete relationship described being unlikely to confront an athlete if this was an  
7 anticipated outcome. This finding is consistent with the propositions of Sullivan et al. (2015).  
8 This is also consistent with research findings in parent-child and dating relationships, which  
9 have shown people tend to avoid confrontations if they have the potential to result in negative  
10 outcomes (Caughlin & Afifi, 2004). Similarly, with regard to personal resource beliefs,  
11 coaches who didn't feel they had a good level of knowledge on anti-doping were the ones  
12 most likely to 'pass the buck' to others rather than address doping issues themselves.  
13 Furthermore, coaches low in initiation and intimacy beliefs also reported being less likely to  
14 confront athletes regarding potential doping. Regarding intimacy, this is consistent with  
15 research investigating peer interventions and communication that has shown people are more  
16 likely to look to intervene to help others when intimacy between the potential confronter and  
17 confronted is high (Malis & Roloff, 2007; Reznik et al., 2010). Thus, optimizing coaches'  
18 DCE beliefs across the different sub-dimensions of DCE could increase the likelihood  
19 coaches will take personal responsibility for confronting possible doping.

### 20 **Theoretical and Definitional Considerations**

21 Whilst the findings discussed to this point highlight the important contribution of the DCE  
22 model, given it is still in its infancy it may be worthwhile considering some possible revisions  
23 and/or additions to the model that may further heighten its potential contribution in future  
24 work. The first of these relates to whether *confrontation* is the most appropriate term to  
25 represent coach attempts to engage with athletes on issues relating to possible doping. Using

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1 this term with coaches may implicitly suggest coaches should be confrontational in their  
2 style, which is likely to detract from the empathic approach coaches considered most  
3 effective when discussing intimacy presently (see also Ntoumanis et al., 2018). Thus, any  
4 future revisions of the DCE model could potentially include an alternative term, potentially  
5 one more reflective of the empathic and supportive coaching style considered most effective  
6 by the coaches interviewed presently.

7         Along similar lines, another area of the model for possible revision relates to the term  
8 legitimacy. When discussing this sub-dimension during interviews, coaches largely focused  
9 on the evidence base available to establish valid grounds for a confrontation. In contrast,  
10 within the existing doping literature this term relates to whether anti-doping rules and their  
11 implementation are viewed as desirable, proper, and appropriate (e.g., Efverström, Ahmadi,  
12 Hoff, & Bäckström, 2016). Thus, retaining this term within the DCE model could lead to  
13 confusion amongst coaches and researchers given it has an existing meaning in the doping  
14 literature. Researchers looking to further develop the DCE model may therefore wish to  
15 consider adopting an alternative term (e.g., evidence base, valid grounds) for this sub-  
16 dimension.

17         One final possible revision to the DCE model relates to the development of a broader  
18 model that encapsulates more completely the likely antecedents and outcomes of DCE  
19 beliefs. Although Sullivan et al. (2015) proposed some initial precursors (e.g., information on  
20 a forthcoming player confrontation) and consequences (e.g., effective openings to  
21 confrontations) of DCE beliefs, these were largely hypothetical and based upon research  
22 investigating confrontations outside of sport and doping (e.g., Malis & Roloff, 2007; Reznik  
23 & Roloff, 2009). The current findings now provide a starting point for future research  
24 working towards the development of a more complete and empirically supported model. A  
25 worthy aim for such research may be to develop a model more akin to the coaching efficacy

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1 model itself, which includes much broader coverage of the likely antecedents and outcomes  
2 of coaching efficacy (see Boardley, 2018; Feltz et al., 1999) than is currently the case for the  
3 DCE model.

#### 4 **Limitations and future directions**

5 The current research contributes important knowledge on potential coach influences on  
6 doping in sport. As with all research though, there are limitations to the work that should be  
7 acknowledged and considered when interpreting the findings. These limitations do, however,  
8 indicate potential avenues for future investigations aimed at furthering the present research.  
9 For instance, although data analyses identified important outcomes of DCE sub-dimensions,  
10 as only one side of the coach-athlete dyad was examined presently the analyses may not have  
11 captured further relevant outcomes. For instance, given research has highlighted the  
12 importance of athlete perceptions in mediating effects of coach efficacy beliefs on athlete-  
13 and team-level outcomes (see Boardley, 2018), there may be downstream effects of coach  
14 efficacy beliefs that couldn't be identified through coach interviews. As such, future  
15 qualitative research that considers athletes' perceptions of their coaches' DCE could help  
16 paint a more complete picture of the outcomes stemming from DCE beliefs. Also, as our  
17 sampling strategy focused specifically on coaches working in rugby and athletics within the  
18 UK, our findings are delimited to coaches working within these sports in this country. As the  
19 prevalence, nature, and acceptance of doping are likely to differ based upon the physical  
20 demands of specific sports as well as cultural influences, future research examining DCE  
21 beliefs in coaches working within sports with differing physical demands and with  
22 contrasting cultural influences to those in the present study is warranted. Finally, future  
23 qualitative research could examine athletes' impressions of discussions about doping with  
24 coaches who vary in their degree of DCE, or whether athletes differ in their efficacy to  
25 initiate discussions about doping with their coaches.



**Conclusions**

1  
2 By collecting and analyzing qualitative data from high-level technical and S&C coaches  
3 working in rugby and athletics, the current research made several important contributions.  
4 Foremost, the coach interviews identified key antecedents and outcomes for sub-dimensions  
5 of DCE. As well as revealing key antecedents and outcomes, data analyses unearthed some  
6 complexities around them. For example, analyses revealed how at times coaches must weigh  
7 the potential costs (e.g., eroding trust in the coach-athlete relationship) and benefits (e.g.,  
8 protecting the reputation of the coach/club) before deciding whether to initiate a  
9 confrontation. Also, the current work showed that S&C coaches and technical coaches  
10 possess unique perceptions tied to their DCE beliefs. Accordingly, a full understanding of  
11 external influences on doping likely requires examination of the broader athlete-support  
12 network rather than focusing on technical coaches as has largely been the case to date.  
13 Finally, the findings highlight the importance of coach education on anti-doping, in that  
14 coaches view such education as important yet often find other priorities to supersede it. As  
15 such, anti-doping organizations and sport governing bodies are encouraged to support the  
16 development and evaluation of coach-based anti-doping interventions in ways that overcome  
17 barriers to broad coach participation.

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TABLE 1. PARTICIPANT DEMOGRAPHICS.

Code	Age	Sex	Coach Type	Sport	Standard
TC1	40	Male	Technical	Athletics	National
TC2	72	Male	Technical	Athletics	International
TC3	45	Male	Technical	Athletics	International
TC4	33	Male	Technical	Rugby	International
TC5	35	Male	Technical	Rugby	International
TC6	38	Male	Technical	Rugby	International
TC7	38	Female	Technical	Rugby	Regional
TC8	40	Female	Technical	Rugby	Regional
TC9	37	Female	Technical	Rugby	Regional
TC10	33	Female	Technical	Rugby	Regional
TC11	36	Male	Technical	Rugby	National
S&C1	27	Male	S&C	Athletics	National
S&C2	41	Female	S&C	Both	National
S&C3	38	Male	S&C	Both	International
S&C4	35	Female	S&C	Both	National
S&C5	25	Male	S&C	Rugby	Regional
S&C6	37	Male	S&C	Rugby	Regional
S&C7	26	Male	S&C	Rugby	Regional
S&C8	45	Male	S&C	Rugby	National
S&C9	43	Male	S&C	Rugby	Regional
S&C10	36	Male	S&C	Athletics	National

### Conflict of Interest Statement

My co-authors and I do not have any interests that might be interpreted as influencing the research, and APA ethical standards were followed in the conduct of the study.