

A qualitative investigation of coaches' doping confrontation efficacy beliefs

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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 ($n_{\text{male}} = 15$, $n_{\text{female}} = 6$; $n_{\text{technical}} = 11$, $n_{\text{S\&C}} = 10$; $n_{\text{athletics}} = 5$, $n_{\text{rugby}} = 13$, $n_{\text{rugby \& athletics}} = 3$), working at a regional, national, or international level in athletics, rugby, or both sports. Study data were analyzed deductively using content analysis techniques.

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 potential antecedents (e.g., coach education) and outcomes (e.g., likelihood of confronting athletes on doping-related issues) of coach DCE beliefs relevant to one or more of the DCE sub-dimensions. 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. Based on the results of this study, recommendations are posed for revising and expanding the DCE model. Practical recommendations are also offered for coach education.

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

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A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs

Coaches are important social agents in sport, with significant potential to shape athlete outcomes (Côté & Gilbert, 2009). 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 relevant to athlete development is confidence in the ability to confront doping (Sullivan, Feltz, LaForge-Mackenzie, & Hwang, 2015). The world anti-doping code (WADC) defines doping as the engagement in any of ten anti-doping rule violations (ADRV; World Anti-Doping Agency, 2015). However, for the purposes of the current research we focus mainly on ADRV 2.2, which relates to the use or attempted use by an athlete of a prohibited substance or method (World Anti-Doping Agency, 2015). Given its potential for facilitating an unfair advantage over opponents and possible negative health effects, doping constitutes a significant issue in sport (Donovan, Egger, Kapernick, & Mendoza, 2002). 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 and 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, 2019; Laure, Thouvenin, & Lecerf, 2001; Ntoumanis, Barkoukis, Gucciardi, & Chan, 2017; Patterson & Backhouse, 2018). 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 (e.g., coercive, pressuring, and authoritarian

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1 behaviors) and doping intentions and doping behavior (Ntoumanis et al., 2017). It is possible
2 coaches who use controlling behaviors may communicate messages (e.g., win at all costs)
3 through their actions or words that potentially promote justification of doping by athletes.
4 Further, recent research interviewing elite-level coaches from a range of sports found many
5 coaches showed evidence of very poor knowledge on key anti-doping control systems
6 (Engelberg et al., 2019). Importantly, Patterson and Backhouse (2018) found similar deficits
7 in knowledge with a sample of football and rugby coaches, also finding such poor knowledge
8 and understanding led to a perceived lack of self-efficacy to work with players on doping
9 related issues. Thus, whilst the extant literature highlights the considerable potential coaches
10 have to influence athlete doping, it also signifies coaches may not have the knowledge or
11 confidence to effectively address doping issues with athletes. As such, there is a need to
12 better understand the key aspects of coaches' confidence to address doping, as well as
13 important factors that may influence the development of these aspects.

14 A recent model of relevance to coaches' confidence in addressing doping is the
15 doping confrontation efficacy (DCE) model proposed by Sullivan et al. (2015). Two
16 theoretical frameworks were central to the development of this model. The first was the
17 coaching efficacy model proposed by Feltz, Chase, Moritz, and Sullivan (1999). Coaching
18 efficacy represents coaches' belief in their ability to impact the learning and performance of
19 athletes. Given this model does not focus specifically on coaches' confidence in doping
20 confrontation, Sullivan et al. (1999) developed a model of coach efficacy directly centered on
21 coaches' confidence to confront doping. The second guiding model was Newell and
22 Stutman's (1988, 1991) social confrontation model, which conceptualizes confrontations as
23 active discussions between the confronter and the confronted (Newell & Stutman, 1991).
24 Effective confrontations should include discussion of not only the problem (i.e., doping in
25 this case), but also possible causes and solutions. The confronter should also present the

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1 reasons for behavior change and express concern for the confronted, whilst avoiding personal
2 attacks or criticisms (Malis & Roloff, 2007).

3 Given the various components of confrontations proposed in Newell and Stutman's
4 (1988, 1991) guiding framework, Sullivan et al. (2015) proposed DCE as an overarching
5 construct reflected in five lower-order dimensions. The first of these is *initiation*, which
6 refers to coaches' beliefs in their ability to confront athletes regarding doping issues and
7 establish the purpose (e.g., understand the athletes' perspective, offer appropriate solutions)
8 for the confrontation. In turn, efficacy regarding *legitimacy* is also important, relating to
9 belief in a coach's ability to establish valid grounds for establishing a confrontation. Such
10 grounds are whether the athlete has violated a rule and whether the infringed rule is relevant.
11 Next, coaches need to be confident they have the *personal resources* (i.e., time, energy, and
12 information) required to cope effectively with the cognitive and emotional demands involved
13 in confrontations (see Reznik, Roloff, & Waite Miller, 2010). The fourth sub-dimension is
14 *intimacy*, pertaining to coaches' confidence in their ability to confront athletes without
15 appearing judgmental, which could threaten the coach-athlete relationship. Finally, *expected*
16 *outcomes* relate to coaches' beliefs in their ability to confront athletes despite the possibility
17 of both positive (e.g., cessation of intention to dope) and negative (e.g., weakening of the
18 coach-athlete relationship) outcomes. These five lower-order dimensions sit under the
19 overarching DCE construct, which represents the extent to which coaches believe in their
20 abilities to effectively confront athletes regarding doping and offer appropriate solutions
21 (Sullivan et al., 2015).

22 Sullivan et al. (2015) employed several stages to develop and test a measure designed
23 to examine and represent the DCE model. First, they created a comprehensive list of 64 items
24 designed to assess the five dimensions of DCE represented in the social confrontation model
25 (Newell & Stutman, 1988, 1991), with items based upon those used in existing social

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1 confrontation measures. Eight experts then appraised the 64 items for face and content
2 validity. Based on the appraisals the researchers deleted some items and revised others,
3 resulting in a final list of 45 items to take forward for further testing. Sullivan and colleagues
4 (2015) then collected DCE ratings on these items from five hundred and sixty coaches of
5 high-school athletes, using the responses to examine the dimensional structure and select the
6 final measure items. Factor analyses supported the hypothesized 5-factor structure, and the
7 researchers selected 21 items for use in the final measure. Whilst this work supports the
8 proposed DCE model, it was focused on developing a quantitative measure of DCE and not
9 on capturing in-depth perspectives of coaches. As such, qualitative examination of the model
10 with coaches could further enrich our understanding of it. This could be especially helpful in
11 understanding antecedents and outcomes of DCE.

12 Based upon the nature of the five sub-dimensions, it is possible to identify some
13 probable antecedents of coach DCE beliefs. For example, coaches are likely to have elevated
14 levels of legitimacy beliefs if they have reliable information on the issue tied to a
15 forthcoming player confrontation (Newell & Stutman, 1991; Sullivan et al., 2015). If a coach
16 has dependable evidence that an athlete has violated an anti-doping rule, it is legitimate to
17 confront the athlete on this issue. Also, coaches' personal resources beliefs are likely to be
18 higher if they are well educated on doping issues, as this should increase their abilities to
19 clearly communicate and defend their position (see Reznik, Roloff, Waite, & Miller, 2010).
20 Further, adequate space within coaches' workloads should underpin the time element of
21 personal resources. A final example of an antecedent to DCE may be empathy, which could
22 be important in bolstering intimacy beliefs. The ability to understand and experience an
23 athlete's possible responses to being confronted should promote coaches' confidence in the
24 ability to provide support for the athlete and avoid the confrontation being viewed as a
25 personal attack (see Malis & Roloff, 2007). Despite the importance of understanding factors

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1 that may influence coaches' DCE beliefs, researchers to date have not examined possible
2 antecedents of these beliefs.

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

12 Although researchers have not yet examined direct outcomes of coach DCE beliefs,
13 athlete attitudes towards doping have been examined as a possible outcome of athlete
14 perceptions of coach DCE beliefs. Weak-to-moderate negative associations have been
15 observed between athletes' perceptions of their coaches on all five dimensions of DCE and
16 their attitudes towards doping (Sullivan & Razavi, 2017). Thus, as levels of perceived coach
17 DCE are higher, athletes show less positive attitudes towards doping. Based upon the revised
18 coaching efficacy model (see Boardley, 2018), it is possible athlete perceptions of coach
19 DCE are influenced by observations of relevant coaching behaviors (e.g., coach responses to
20 media reports of doping). For instance, heightened athlete perceptions of coach DCE may
21 result from athletes frequently observing coach behaviors that explicitly deter use of
22 performance enhancing drugs (Sullivan et al., 2015). Such behaviors reflect negative coach
23 attitudes toward doping, attitudes that may come to be internalized by athletes. Therefore, in
24 the absence of more direct evidence, the findings of Sullivan and Razavi (2017) provide

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1 indirect support for the possibility that elevated levels of coach DCE may be linked with
2 desirable outcomes for coach behavior.

3 Whilst Sullivan et al.'s (2015) DCE model has clear potential to inform our
4 understanding of factors influencing coach behaviors relevant to doping, to date researchers
5 have not qualitatively examined this model. As a result, we have little understanding of how
6 coaches perceive the different components of DCE. Thus, one aim of the current research was
7 to investigate the nature of DCE beliefs from the perspective of coaches. Also, researchers
8 have so far not investigated factors that may influence and stem from DCE beliefs. It is
9 therefore possible there are important factors beyond those proposed by Sullivan et al. (2015)
10 that could inform the model. Therefore, a second aim was to identify and examine possible
11 antecedents and outcomes of DCE beliefs through qualitative interviews with coaches. In
12 doing so, we sought to identify which antecedents are most salient and which outcomes are
13 most prominent, *from the perspective of coaches*. The WADC (World Anti-Doping Agency,
14 2015) specifies that athlete support personnel should “be knowledgeable of and comply with
15 all anti-doping policies and rules adopted pursuant to the Code and which are applicable to
16 them or the Athletes whom they support” (p. 114). As they work with athletes within testing
17 pools, there is an onus upon high-level coaches to understand and comply with anti-doping
18 policies and rules. As such, we focused our research on coaches working at this level.

19 A further limitation in current research is that the potential impact of S&C coaches on
20 athlete doping has largely been neglected. Instead, studies designed to investigate the effect
21 of coaching on athlete doping have exclusively focused on technical (i.e., head) coaches.
22 However, S&C coaches may be well placed to influence athlete doping, with some research
23 even suggesting S&C coaches are potential suppliers of doping substances (Engelberg et al.,
24 2019). This is likely due to coaches working predominantly in gymnasias, environments in
25 which doping is uniquely prevalent (Boardley, Smith, Mills, Grix, & Wynne, 2017; Sjöqvist,

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1 Garle, & Rane, 2008). Because S&C coaches generally interact with athletes in environments
2 in which doping is more pervasive than other sport training environments, S&C coaches may
3 be ideally situated to confront and guide athletes on doping issues. Thus, research
4 investigating coach influences on doping should consider the potential influence of S&C
5 coaches alongside that of technical coaches. When addressing the main aims of the study, we
6 examined the perspectives of both technical and S&C coaches accordingly.

7 **Methodology**

8 **Philosophical Underpinnings**

9 This research is philosophically grounded in post-positivism. More specifically, whilst
10 adhering to the notion there is some objective reality within the social world, we
11 acknowledge social science is often interpretative which precludes the categorical discovery
12 of such reality (see Fox, 2008). Whilst maintaining there is an objective social reality that
13 could be discerned if sufficiently sophisticated tools were available, we recognize any
14 examination of the social world is inevitably value- and theory-laden, as well as context-
15 dependent. However, we believe through sustained examination of a topic using relevant
16 approaches applied with methodological rigor and scrupulous data analysis, it is possible to
17 derive an approximation to truth. Naturally, it follows that the questions we ask, the way our
18 data is collected and analyzed and the conclusions we draw are inextricably linked to our
19 post-positivist position (see Hay, 2002). Considering our post-positivist position, we use
20 interviews because we believe participant responses provide a window to understanding
21 values of coaches in a context-informed way. Further, our adoption of a primarily deductive
22 approach to data analysis using categories derived from theory also aligns with our post-
23 positive stance.

24 **Participants**

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1 Twenty-one coaches participated in the study ($n_{\text{male}} = 15$, $n_{\text{female}} = 6$; $n_{\text{technical}} = 11$, $n_{\text{S\&C}} = 10$).

2 Coaches' ages ranged from 27 to 72 years ($M = 38.1$); they worked at a regional ($n = 8$),
3 national ($n = 7$), or international ($n = 6$) level in either athletics ($n = 5$), rugby ($n = 13$), or
4 both sports ($n = 3$).¹ See Table 1 for details for each coach. Rugby and athletics were selected
5 because they utilize both technical and S&C coaches, and relatively high percentages of anti-
6 doping rule violations (ADRVs) have been reported for their athletes (World Anti-Doping
7 Agency, 2019). Specifically, between 2013 and 2016 these two sports were consistently in
8 the top ten sports for number of ADRVs and were above the mean for the samples to ADRV
9 ratio (World Anti-Doping Agency, 2019).

10 **Interview Schedule**

11 Interviews followed a protocol developed by the first and second author based upon relevant
12 theory and past research to identify themes relating to the five dimensions of DCE defined by
13 Sullivan et al. (2015). The protocol opened with introductory comments, definitions of key
14 terms (e.g., performance enhancing drugs, doping) to be used during the interview, and a
15 brief discussion of the interviewee's coaching history. Following this, open-ended questions
16 on doping in general (e.g. "In general, what do you think are the main reasons athletes in your
17 sport use performance enhancing drugs?"; "What are your thoughts regarding the morality of
18 using performance enhancing drugs?"), were posed, followed by more targeted questions
19 regarding DCE beliefs (e.g., "What things are likely to influence a coach's abilities to ask an
20 athlete if they have used performance enhancing drugs?"; "How confident are you in your
21 ability to confront an athlete about doping whilst avoiding personal criticism?"; "How
22 confident are you in your ability to establish the reason for confronting an athlete about

¹ Although we sampled specifically from these two sports, the study was not designed to make comparisons between them.

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1 doping?”). The interview then closed with an opportunity for the interviewee to discuss any
2 further topics believed to be relevant to the topics discussed during the interview.

3 **Procedures**

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

17 **Data Analysis**

18 Data were analyzed deductively using content analysis techniques, which are appropriate
19 when examining a specific model using qualitative data (Hsieh & Shannon, 2005). This
20 involved the application of operational definitions (see introduction for definitions) for the
21 five dimensions of DCE when content-analyzing the data. The second author content
22 analyzed the data by reading each transcript and highlighting all text relevant to one of the
23 dimensions of DCE; he then coded each highlighted passage according to the relevant
24 predetermined code (see Hsieh & Shannon, 2005). We also allowed for an ‘other’ category
25 within our data analysis strategy to include any data that we could not code directly into one

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1 of the five DCE dimensions. However, this did not lead to the development of any new
2 themes.

3 **Research Quality**

4 Given our post-positivist philosophical position, we appreciate the influence we will have had
5 on our study. For instance, our collective assumptions, knowledge, skills and experiences will
6 have influenced our research aims, the interview protocol, data analysis, and report writing.
7 To maximize the quality of this qualitative research, we were guided by contemporary views
8 on this issue (Smith & McGannon, 2017). Key aspects of our approach follow below.

9 First, consistent with our deductive approach, we developed a coding frame and set of
10 coding rules to guide data analysis. Specifically, the unit of coding used throughout data
11 analysis was the complete response to a question. This unit of coding was chosen to ensure
12 each response was coded whilst considering the entire response. This was to prevent any loss
13 of context which may have occurred if we had coded individual sentences. Next, an
14 experienced qualitative interviewer with experience in sport as an athlete and anti-doping
15 practitioner conducted all interviews to encourage a strong and trusting relationship between
16 interviewer and interviewee (see Woodward, 2008). Also, early in the coding process, the
17 first author independently coded five of the interviews coded by the second author. Both
18 authors then met to compare findings, and agreed relevant sections were consistently being
19 identified and linked to the relevant definition/s. We employed this process to confirm there
20 was general agreement between the two researchers on how they were identifying sections of
21 text and linking them to definitions, and not for the purposes of establishing inter-rater
22 agreement (see Smith & McGannon, 2017). Finally, the first author presented this work at an
23 international conference attended by leading scholars. This allowed us to share our findings
24 and deliver and defend them through critical engagement with an informed audience.
25 Audience responses supported the credibility and plausibility of our approach and findings.

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

Initiation

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

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

Another key purpose for some coaches was to highlight the risks that doping can pose for athletes. For example, TC6 said his aim would be to 'highlight the risks of it, the potential consequences...'. The underlying implication being that, by making salient the potential risks, a coach can deter an athlete from doping. The objectives of other coaches were aligned

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1 with this underlying aim. For instance, TC4 explained that for him, ‘that player has to leave
2 the room with an understanding that a) he doesn’t need to go down that route, and b) what the
3 alternatives are’. Consistent with purposes highlighted to this point, S&C4 suggested she
4 would, ‘try to understand why they felt that [the need to dope] and try to sort of convince
5 them that this was not a good idea’.

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

16 **Legitimacy**

17 As well as being confident in their ability to effectively initiate a confrontation, it is also
18 important coaches believe they can establish legitimate grounds for a confrontation. Given
19 there is only really a single basis for initiating a doping confrontation (i.e., evidence of
20 potential doping), discussion of this sub-dimension centered largely on antecedents and
21 outcomes of the belief, rather than the belief itself. In terms of antecedents, the primary
22 contributor to this belief appeared to be the degree of evidence relating to possible doping.
23 Highlighting its perceived importance, one coach went as far as to make a clear distinction
24 between situations in which an athlete is suspected of a doping violation and a situation
25 where someone is known to be doping, with legitimacy beliefs likely to be far stronger in the

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1 latter situation than the former. When making this distinction, S&C9 suggested that when
2 doping was only suspected, ‘I dunno how I’d approach that conversation... I’m not sure that
3 it’ll be something I feel comfortable confronting an athlete about...’, whereas in the latter
4 situation [known to be doping] he ‘... wouldn’t have any problems...’. As such, coaches’
5 legitimacy beliefs may be stronger when they have clear evidence of an athlete doping, and a
6 key outcome of such legitimacy beliefs may be the likelihood of the coach initiating a
7 confrontation.

8 **Personal Resources**

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

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

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1 informational resources necessary to cope effectively with a challenging doping
2 confrontation.

3 Some coaches acknowledged a desire to enhance their knowledge on anti-doping, but
4 then implicated a lack of time to sufficiently engage with relevant education programs to
5 satisfy this desire. For instance, when discussing informational personal resources he would
6 like to develop, S&C3 said, ‘...nutrition is something that, from my personal perspective I
7 need to know more about and obviously the whole banned substance thing, I mean that’s
8 continually evolving as well.’ However, despite acknowledging the importance of developing
9 such knowledge, he then indicated he may not be able to develop such knowledge because of
10 the danger of ‘spreading yourself too thin’, suggesting ‘it’s a time constraint type thing’.

11 Thus, it seems a perceived lack of time may inhibit effective engagement with anti-doping
12 education for some coaches. Related to this, some coaches who had received anti-doping
13 education demonstrated limited continued engagement with it, which may again limit their
14 informational resources. For instance, S&C1 described ‘...we took umm, the...was it the UK
15 Anti-Doping Agency test?’ before going on to admit ‘... I need to do it again actually’. The
16 implication here being engagement with anti-doping education was not viewed as a priority.

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

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

24 Therefore, whilst some coaches appeared to have the informational personal resources to
25 confront athletes on doping issues, this was not consistently the case across the sample of

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1 coaches we interviewed. Responses from some coaches suggest that a lack of financial
2 investment may explain this.

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

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

Several approaches described above highlight the potential importance of a possible antecedent of intimacy beliefs that came up during some 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, 'I think it's knowing your players...you create that personal
13 relationship'. Thus, it is possible having existing strength in the coach-athlete relationship
14 may bolster intimacy beliefs in advance of a confrontation because 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, leading to a weakened coach-athlete relationship
3 associated with a lack of openness in the future. Similar in some ways, TC3 expressed
4 concern that doping confrontations could negatively impact the coach-athlete relationship by
5 undermining the coach's trust in the athlete. Specifically, he described how following a
6 confrontation he may remain suspicious of the athlete, '...the problem for me is if that
7 conversation isn't an open conversation.... isn't open and honest.... I would be pretty wary,
8 and I will be having a very close watch on those people...'. Thus, the degree of potential
9 damage to trust within the coach-athlete relationship appears to undermine expected outcome
10 beliefs.

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

17 ...we don't want to be affiliated with anybody that's either doping or had got
18 the stigma around them in terms of you know being caught for something...

19 Consistent with this view, S&C5 expressed how, '...it puts your job on the line, puts the club
20 you know and everyone else's job on the line as well...'. Further, and along similar lines,
21 S&C8 explained, 'I wouldn't on a professional level allow myself to be put in a position
22 where I was seen to be condoning the use of [drugs]...'. Finally, in terms of possible
23 reputation damage, S&C2 described how, 'I have a good reputation as a coach. I have no
24 reason to compromise that... why would I want to be working with somebody that would
25 ultimately bring that down?'. Thus, although several coaches expressed reticence around

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1 expected outcome beliefs because of the potential for damage to the coach-athlete
2 relationship, others considered potential negative outcomes stemming from doping
3 confrontations were worth the risk when compared against the possible detrimental outcomes
4 stemming from not acting. In general, preserving the coach-athlete relationship was of greater
5 importance to technical coaches, whereas avoiding potential reputation damage was a priority
6 for S&C coaches.

7 **Discussion**

8 The current study provided an in-depth investigation of the DCE model in 21 high-level
9 technical and S&C coaches from rugby and athletics, contributing important information on
10 coach perceptions of DCE as well as potential influences and outcomes of DCE sub-
11 dimensions. In doing so, this work makes several important contributions to the literature.
12 First, our findings support the relevance of all five dimensions of DCE to coaching practice in
13 athletics and rugby. Next, we identified key antecedents and outcomes of coach DCE beliefs
14 relevant to one or more of the DCE sub-dimensions. In doing so, we have identified possible
15 ways that coach DCE beliefs can be enhanced and highlighted the potential importance of
16 doing so given the important behavioral outcomes that appear to stem from such beliefs. For
17 instance, coach education was viewed as a key antecedent of DCE, and lower levels of DCE
18 were linked with a reduced likelihood of confronting athletes on doping-related issues.
19 Finally, we identified several aspects of the DCE model that could potentially be developed
20 and/or improved. Each of these contributions is discussed in more detail over the ensuing
21 paragraphs.

22 **Strength of DCE Beliefs**

23 In terms of the levels of coaches' efficacy beliefs, beliefs relating to initiation and intimacy
24 were most consistent, which may be because the foundations for such beliefs are less
25 situation dependent than for the other three beliefs. Regarding initiation, most coaches were

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1 generally confident they could clearly articulate the purpose/s they would outline when
2 initiating confrontations. The main purposes espoused included understanding why athletes
3 may be considering doping, highlighting the risks of doping, and changing athletes' minds
4 about choosing to dope. Consistent with these findings, research has found coaches have an
5 aspiration to influence athletes' doping-related decisions (Ntoumanis, Brooke, Barkoukis, &
6 Gucciardi, 2015), and view negative health consequences as a strong deterrent to doping
7 (Backhouse & McKenna, 2012). With respect to coaches aspiring to influence athletes'
8 doping related decisions, this may be motivated by feelings of disdain towards doping or –
9 for S&C coaches in particular – a desire to protect the coach's/club's reputation. Coaches in
10 the present study reported such feelings, as have coaches in previous studies. For example,
11 coaches have described how they are against doping, considering it cheating, unfair, and
12 disadvantageous toward others (e.g., Engelberg & Moston, 2016; Mazanov, Hemphill,
13 Connor, Quirk, & Backhouse, 2015; Patterson & Backhouse, 2018).

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

24 In contrast to initiation and intimacy, levels of expected outcomes beliefs (i.e.,
25 coaches' confidence in their ability to confront athletes regardless of possible positive or

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1 negative outcomes) were more variable. A potential negative outcome that concerned several
2 coaches was the potential for a damaging effect on trust within the coach-athlete relationship.
3 As a result, some coaches expressed a degree of reticence regarding confronting athletes
4 because of such potential consequences. However, countering this were the possible negative
5 consequences that could stem from not confronting possible doping. Namely, these related to
6 the stigma attached to doping, and the damaging effect of not addressing doping for a coach's
7 or club's reputation. Such reference to the stigma of doping was a sub-theme that came up in
8 many interviews and one that has also arisen in previous qualitative research with athletes
9 (Dimeo et al., 2012). Presently, this stigma appeared to serve a positive self-regulatory
10 function, as some coaches felt confident they would confront possible doping despite possible
11 negative consequences because the repercussions of not doing so may be worse. However, at
12 times there was a suggestion that clubs were likely to try and deal with any instances of
13 suspected doping 'in-house', rather than risking reputational damage by reporting such
14 instances to the anti-doping authorities. Patterson and Backhouse (2018) reported similar
15 responses to suspected doping in past work with football and rugby coaches. As such,
16 coaches' expected outcome beliefs might ultimately result from a cost-benefit analysis
17 regarding the possible consequences of confronting doping versus those stemming from not
18 doing so.

19 **Antecedents of DCE Beliefs**

20 For some dimensions of DCE, data themes related more to antecedents and outcomes of
21 beliefs rather than on the belief itself. This was the case for legitimacy beliefs, for which
22 coaches tended to find it hard to categorically determine the strength of their beliefs. This was
23 largely because they perceived their efficacy beliefs for this dimension to be very situation
24 dependent. In particular, coaches felt the degree of evidence they had to suspect an athlete
25 was doping would heavily influence the degree to which they would feel confident in their

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1 ability to establish strong grounds for a confrontation. Given legitimacy relates to whether the
2 target (i.e., athlete) has broken a rule (see Newell & Stutman, 1991), it is perhaps not
3 surprising that levels on this dimension would be highly dependent upon the degree of
4 evidence supporting an anti-doping rule infringement in any particular case. However, given
5 coaches may still find themselves in situations where they are required to speak with an
6 athlete about suspected doping without strong evidence, it may be useful to develop
7 interventions that help coaches deal effectively with such situations. For example, guidance
8 could be offered on what constitutes a sufficient degree of evidence to support moving
9 forward with a confrontation, and the best approaches to gathering such evidence. Based
10 upon our findings, effective evidence gathering would help bolster legitimacy beliefs before a
11 confrontation is initiated. Maximizing legitimacy prior to a confrontation is likely important,
12 as these beliefs have been positively linked with greater use of direct support mechanisms
13 (Reznik & Roloff, 2009) and positive resolutions following confrontations (Newell &
14 Stutman, 1988).

15 Consistent with one of our presuppositions, several coaches expressed how the coach-
16 athlete relationship could be maintained more effectively (i.e., therefore supporting intimacy
17 beliefs) if coaches have high levels of empathy. Specifically, several participants suggested
18 that when coaches can demonstrate their empathy and understanding of the athlete's
19 situation, athletes are less likely to view the coach as being judgmental and to consider the
20 confrontation a personal attack. In concert with these views, empathy reflects the ability to
21 share and experience someone else's feelings and has been associated with increased
22 likelihood of engaging in helping behaviors (Eisenberg, Eggum, & Di Giunta, 2010). The
23 present finding adds to a burgeoning literature highlighting the potential importance of
24 empathy for engagement in appropriate and desirable coaching behaviors (e.g., Matosic,
25 Ntoumanis, Boardley, Sedikides, Stewart, & Chatzisarantis, 2017).

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1 Data analysis also identified strong themes relating to possible antecedents for
2 personal resource beliefs (i.e., whether coaches have the personal resources [i.e., time,
3 energy, and information] required to cope effectively with the cognitive and emotional
4 demands involved in confrontations; Newell & Stutman, 1991). Interestingly, whilst most
5 coaches acknowledged the importance of coaches having a good knowledge and
6 understanding of anti-doping, many also suggested they did not have the time to achieve or
7 maintain such knowledge. Thus, it seems limitations in one personal resource (i.e., time) may
8 be contributing to deficits in another (i.e., information). This finding adds to a burgeoning
9 literature base that suggests coaches lack the time to develop their knowledge on doping
10 prevention (Engelberg & Moston, 2016; Mazanov et al., 2015; Patterson & Backhouse,
11 2018). Our findings here correspond with research showing that whilst coaches acknowledge
12 the potential importance of being knowledgeable regarding anti-doping, they do not see it as
13 a high priority (e.g., Engelberg & Moston, 2016; Mazanov, Backhouse, Connor, Hemphill, &
14 Quirk, 2014; Patterson & Backhouse, 2018), do not see it to be of personal relevance
15 (Patterson, Duffy, & Backhouse, 2014), and may even view anti-doping education as a ‘box-
16 ticking exercise’ that is largely a waste of time (Dimeo, Allen, Taylor, Dixon, & Robinson,
17 2011). Further, research considering aspects of coaches’ knowledge on anti-doping have
18 identified deficits in knowledge relevant to prohibited substances/methods and their effect on
19 performance (Blank, Leichtfried, Fürhapter, Müller, & Schobersberger, 2014; Engelberg &
20 Moston, 2016; Patterson & Backhouse, 2018), as well as on key anti-doping control systems
21 such as the biological blood passport and the whereabouts system (Engelberg et al., 2019).
22 Therefore, governing bodies may need to place an increased organizational emphasis on anti-
23 doping education to highlight its importance and relevance and encourage coaches to
24 prioritize anti-doping education over other responsibilities by ensuring they have the requisite
25 time, energy, and financial support.

Outcomes of DCE Beliefs

Data analysis also identified several possible outcomes of DCE beliefs. One of the most positive of these was for the athlete to cease doping or desist from considering doping. This finding provides strong support for Sullivan et al.'s (2015) model given cessation of doping was one of the primary outcomes proposed in the model. For many coaches, the way in which they would seek to achieve such outcomes would be to provide athletes with information on alternatives to doping, such as improved training techniques, appropriate use of nutritional supplements, and improved dietary support. This was an encouraging finding given the evidence supporting the efficacy of such approaches. Specifically, effective anti-doping education programs often include alternatives to doping (Backhouse, McKenna, Robinson, & Atkin, 2007). An example of this is a school-based anti-doping intervention that incorporates a module on *nutrition as an alternative to doping* which was found to be effective in weakening attitudes towards doping in Greek high-school children (Barkoukis, Kartali, Lazuras, & Tsorbatzoudis, 2016). As such, ensuring coaches are adequately educated on the most effective alternatives to doping could be an effective means of improving DCE outcomes.

Not all the proposed outcomes were positive though. Coaches who feared confrontations may lead to a breakdown in the quality of the coach-athlete relationship described being unlikely to confront an athlete if this was an anticipated outcome. This finding is consistent with the propositions of Sullivan et al. (2015). This is also consistent with research findings in parent-child and dating relationships, which have shown people tend to avoid confrontations if they have the potential to result in negative outcomes (Caughlin & Afifi, 2004). Similarly, regarding personal resource beliefs, coaches who didn't feel they had a good level of knowledge on anti-doping were the ones most likely to 'pass the buck' to others rather than address doping issues themselves. Furthermore, coaches low in

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1 initiation and intimacy beliefs also reported being less likely to confront athletes regarding
2 potential doping. Regarding intimacy, this is consistent with research investigating peer
3 interventions and communication that has shown people are more likely to look to intervene
4 to help others when intimacy between the potential confronter and confronted is high (Malis
5 & Roloff, 2007; Reznik et al., 2010). Thus, optimizing coaches' DCE beliefs across the
6 different sub-dimensions of DCE could increase the likelihood coaches will take personal
7 responsibility for confronting possible doping.

8 **Theoretical and Definitional Considerations**

9 Whilst the findings discussed to this point highlight the important contribution of the DCE
10 model, given the model's infancy it may be worthwhile to consider some possible revisions
11 and/or additions to the model that may heighten its potential contribution in future work.

12 First, given several coaches questioned our use of the term *confrontation*, it is worth
13 considering adopting a different term to represent coach attempts to engage with athletes on
14 issues relating to doping. Using this term with coaches may implicitly suggest that coaches
15 should be confrontational in their style, which is likely to detract from the empathic approach
16 coaches considered most effective (see also Ntoumanis et al., 2018). Accordingly, any future
17 revisions of the DCE model could potentially include an alternative term, potentially one
18 more reflective of the empathic and supportive coaching style considered most effective by
19 the coaches interviewed presently. A more appropriate term may be akin to doping
20 intervention efficacy, as this still reflects confidence in the ability to intervene, but without
21 the possible negative connotations of the term confrontation.

22 Along similar lines, another area of the model for possible revision relates to the term
23 legitimacy. When discussing this sub-dimension during interviews, coaches largely focused
24 on the evidence base available to establish valid grounds for a confrontation. In contrast,
25 within the existing doping literature this term relates to whether anti-doping rules and their

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1 implementation are viewed as desirable, proper, and appropriate (e.g., Efverström, Ahmadi,
2 Hoff, & Bäckström, 2016). As such, retaining this term within the DCE model could lead to
3 confusion amongst coaches and researchers given it has an existing meaning in the doping
4 literature. Researchers looking to develop the DCE model may therefore consider adopting an
5 alternative term (e.g., evidence base, valid grounds) for this sub-dimension.

6 One final possible revision to the DCE model relates to the development of a broader
7 model that encapsulates more completely the likely antecedents and outcomes of DCE
8 beliefs. Although Sullivan et al. (2015) proposed some initial precursors (e.g., information on
9 a forthcoming player confrontation) and consequences (e.g., effective openings to
10 confrontations) of DCE beliefs, these were largely hypothetical and based upon research
11 investigating confrontations outside of sport and doping (e.g., Malis & Roloff, 2007; Reznik
12 & Roloff, 2009). The current findings now provide a starting point for future research
13 working towards the development of a more complete and empirically supported model. A
14 worthy aim for such research may be to develop a model more akin to the coaching efficacy
15 model itself, which includes much broader coverage of the likely antecedents and outcomes
16 of coaching efficacy (see Boardley, 2018; Feltz et al., 1999) than is currently the case for the
17 DCE model. For instance, antecedents within the DCE model have tended to focus on
18 personal influences on coach DCE such as doping knowledge, doping education, evidence of
19 athlete doping, and empathy. In contrast, the coaching efficacy model includes broader social
20 and environmental influences such as community support and competitive success (Boardley,
21 2018; Feltz et al., 1999). A revised DCE model that included both personal and
22 social/environmental influences on DCE would provide a more holistic picture of the
23 contributory factors influencing coach DCE beliefs. Similarly, within the DCE model the
24 proposed outcomes predominantly focus on coach behaviors such as the effectiveness of
25 openings to confrontations and the likelihood a coach will initiate a confrontation. In contrast,

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1 the revised coaching efficacy model considers how changes in coach behavior may then have
2 consequent impacts at the team and athlete level, including athlete competence and collective
3 efficacy (Boardley, 2018). Thus, future iterations of the DCE model could benefit from
4 inclusion of both proximal (i.e., coach-focused) and distal (i.e., athlete- and team-focused)
5 outcomes.

6 **Limitations and future directions**

7 The current research contributes important knowledge on potential coach influences on
8 doping in sport. As with all research though, there are limitations that should be
9 acknowledged and considered when interpreting the findings and that indicate potential
10 avenues for future research. For instance, because only one side of the coach-athlete dyad
11 was examined the analyses may not have captured further relevant outcomes of DCE sub-
12 dimensions. Given that research has highlighted the importance of athlete perceptions in
13 mediating effects of coach efficacy beliefs on athlete- and team-level outcomes (see
14 Boardley, 2018), there may be downstream effects of coach efficacy beliefs that couldn't be
15 identified through coach interviews. As such, future qualitative research that considers
16 athletes' perceptions of their coaches' DCE could help paint a more complete picture of the
17 outcomes stemming from DCE beliefs. Such research could add depth of understanding on
18 possible processes explaining quantitative links between athletes' perceptions of coach DCE
19 and athletes' doping attitudes (see Sullivan & Razavi, 2017). Also, as our sampling strategy
20 focused specifically on coaches working in rugby and athletics within the UK, our findings
21 are delimited to coaches working within these sports in this country. As the prevalence,
22 nature, and acceptance of doping are likely to differ based upon the physical demands of
23 specific sports as well as cultural influences, future research examining DCE beliefs in
24 coaches working within sports with differing physical demands and unique cultural
25 influences is warranted. Such work could provide evidence that supports or refutes

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1 transferability (see Smith, 2018). Upcoming work could also examine whether DCE differs
2 across coach levels and experience.

3 **Conclusion**

4 By collecting and analyzing qualitative data from high-level technical and S&C coaches
5 working in rugby and athletics, the current research made several important contributions.

6 Foremost, the coach interviews identified key antecedents and outcomes for sub-dimensions
7 of DCE. As well as revealing key antecedents and outcomes, data analyses unearthed some
8 complexities around them. For example, analyses revealed how at times coaches must weigh

9 the potential costs (e.g., eroding trust in the coach-athlete relationship) and benefits (e.g.,
10 protecting the reputation of the coach/club) before deciding whether to initiate a

11 confrontation. Also, the current work showed that S&C coaches and technical coaches
12 possess unique perceptions tied to their DCE beliefs. Accordingly, a full understanding of
13 external influences on doping likely requires examination of the broader athlete-support
14 network rather than focusing on technical coaches as has largely been the case to date.

15 Finally, the findings highlight the importance of coach education on anti-doping, in that
16 coaches view such education as important yet often find other priorities to supersede it. As
17 such, anti-doping organizations and sport governing bodies are encouraged to support the
18 development and evaluation of coach-based anti-doping interventions in ways that overcome
19 barriers to broad coach participation.

20

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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