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# Athletes with intellectual impairments and their support personnel's experience of anti-doping

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**ABSTRACT**

No research has examined the anti-doping experiences of athletes with intellectual impairments. We responded to this gap by interviewing athletes and their support personnel (e.g. parents and coaches) about their experience of anti-doping policy and practice. International athletes ($N$ = 10; 20% female) with intellectual impairments and their support personnel ($N$ = 16; 50% female) volunteered to participate in the study. Using an interpretive paradigm, participants attended an online, semi-structured interview. Data were analysed using reflexive thematic analysis and three higher-order themes were created. First, while athletes had an awareness of anti-doping and believed it was important to stop cheating, they found it difficult to understand more complex anti-doping policies and practices and questioned why they themselves needed to be drug tested. Second, anti-doping education was inaccessible and as a result, many reported negative emotional distress during drug testing and difficulty engaging with educational resources. Finally, a number of best practices were outlined for those with intellectual impairments, including ensuring anti-doping control staff are empathetic and considerate of the athletes' needs, shortening, simplifying and repeating educational sessions over the year, and educating support personnel alongside their athlete to offer help throughout the season. In conclusion, anti-doping policy and practice needs to be adapted and tailored for athletes with intellectual impairments to help increase their understanding of their anti-doping rights and responsibilities.

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Clean sport; intellectual disability; Paralympics; safeguarding; WADA

## Introduction

Intellectual impairment is related to limitations in intellectual functioning (e.g. reasoning, problem solving, memory) and adaptive behaviour (e.g. interacting with others, reading, following directions; Schalock, Luckasson, and Tassé 2021) with prevalence estimated to be between 1% and 2% worldwide (McKenzie et al. 2016). Despite facing significant barriers to participation, such as a lack of qualified coaching, the need for additional funded support personnel, and restricted travel opportunities (Darcy and Dowse 2013; Thomson et al. 2021), many people with intellectual impairments participate in competitive sport. In 2024, more than 6,000 athletes, across over 90 nations, are registered with the international sport organisation for intellectual impairments (VIRTUS), 700+ are

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fully classified Para-athletes and >150 were registered to compete in the three represented sports (i.e. athletics, swimming and table tennis) at the Paris Paralympics.[1]

For those participating in international sport competitions, they are bound by anti-doping policy (i.e. World Anti-Doping Code; WADC 2021). All athletes, as well as their support personnel (e.g. coaches, parents, guardians), are therefore required to follow the anti-doping rules. Even if athletes or their support personnel (e.g., coaches, parents, guardians) are not aware of these, they can still be sanctioned under the 'strict liability' ruling whereby they can fail an anti-doping rule violation regardless of their intent or knowledge (see article 2.1; WADC 2021). As such, a cornerstone of WADC policy is anti-doping education, which aims to ensure that all athletes and their support personnel are aware of and have the decision-making capability to avoid intentionally and unintentionally failing an anti-doping rule violation (WADC 2021).

As part of the WADC, athletes are bound by anti-doping practices, which can be invasive. For example, athletes are subjected to doping control that can be unplanned between 06:00 and 23:00 and involve a doping control officer witnessing the passing of urine (see Article C.4.5, WADC 2021). Given that athletes with intellectual impairments are at an increased risk of interpersonal violence (Tuakli-Wosornu et al. 2020), it is therefore incumbent for the anti-doping community to ensure their safety and well-being is protected. However, despite calls for research to understand athletes with intellectual impairments experience of anti-doping (Hurst and Burns 2021; Qvarfordt et al. 2024), a paucity of research exists. It is currently unknown whether athletes understand their anti-doping requirements, if they are appropriately safeguarded and if they have the capacity and agency to adhere to the WADC.

In this study, we aimed to address this knowledge gap and answer the following research question: what are the experiences of anti-doping policy and practice for athletes with intellectual impairments and their support personnel (e.g. parent, guardian and coach)? Historically, those with intellectual impairments are rarely given the opportunity to express their beliefs and attitudes in research (for more information please see: Bishop et al. 2024; Jones, Ben-David, and Hole 2020; McDonald et al. 2022) and assert agency in their lives over life goals, choices, preferences and decisions. As such, fundamental to answering our research question was to work with those who have an intellectual impairment, and, in turn, facilitate greater understanding of their anti-doping needs. Similarly, we wanted to gain valuable insight from support personnel in how they may assist their athletes in refraining from doping and carrying out their responsibilities as an elite athlete.

## Methodology

### *Philosophical assumptions and study design*

We employed an interpretivist constructivist approach and conducted cross-sectional, semi-structured interviews to understand both athlete and their support personnel perspectives of anti-doping. Our research was framed within an ontological relativism (Creswell and Poth 2016), whereby multiple and subjective realities are assumed, and epistemological constructionism that accepts knowledge is constructed and subjective that is denoted by the meaning participants attribute to their experiences of anti-doping policy and practice. Given our aim to provide a voice for athletes with intellectual impairments, an epistemological constructivist approach was deemed most valued, which places emphasis on what participants say, do and feel and how they make meaning of their own experiences.

### *Recruitment of participants*

We used a criterion-based purposive sampling strategy (Smith and Sparkes 2020) to recruit athletes with intellectual impairments[2] and their support personnel to the study. Eligibility criteria stipulated that athletes were 18 years or older, English-speaking, registered with VIRTUS, competed at an

international competition under the WADC and attended an anti-doping education session or had experienced doping control (e.g. drug tested). Eligibility criteria for support personnel were similar whereby their athlete needed to compete at an international level and had attended an anti-doping education session or experienced doping control.

We recruited athletes and support personnel to the study simultaneously using the following methods. First, calls for participants were advertised on the VIRTUS and our university websites, as well as via social media, such as LinkedIn, Instagram and X. Second, contacts within our own networks (e.g. national and international sport organisations, universities and sport clubs) were informed about the study and forwarded a call for participants. Third, personal contacts to each author were individually contacted and invited to the study. Finally, for participants who completed the study, they were asked to forward the call for participant advertisement onto others who may be eligible for the study. Potential participants were sent an information sheet, outlining eligibility criteria and the nature of the project, including benefits for participation, what was expected, example questions (e.g. 'Could you tell us your first experience of anti-doping education'), that participation was completely voluntary, and that they could withdraw at any time without repercussion. They were also informed, either directly or via their parent/guardian, that for participation in the research they would receive a £50 stipend as compensation for their time. It was also emphasised that the interview would be conducted in English, and it was important that all participants had full comprehension of this language. We followed Braun and Clarke's (2019) alternative recommendations to data saturation and used the pragmatic approach of considering the richness, quality, complexity of our data and if the data was sufficient to confidently answer our research questions. We 'guestimated' a provisional sample size range for each group (8–15), which might attain an appropriate quality of data.

### *Interview guide*

Two semi-structured interview guides (see supplementary material 1) were created by the research team who have experience researching athletes with intellectual impairments. Given the lack of research with athletes who have an intellectual impairment and anti-doping, both guides were exploratory and broad in nature and centred on three main areas: 1) understanding of anti-doping, 2) anti-doping education, and 3) doping control. Distinction between guides revolved around the experience of participants, whereby for athletes, questions were focused on their own experiences and for support personnel, questions centred on how they perceived their athlete to experience it.

### *Data collection*

Ethical approval was gained from the lead author's institutional ethics committee. All interviews were conducted online via Microsoft Teams at a time and location suitable to each participant, which were conducted by the lead researcher. Interviews were conducted between April and June 2023, and interviews lasted between 22 and 38 minutes for athletes and between 46 and 84 minutes for support personnel. To help build rapport with participants prior to questioning, informal conversations were conducted (e.g. favourite athlete, first sport experience, favourite competition). The interviewer competed as an international-level athlete himself and contributed to informal discussions, such as experiences with training regimes and competitions. While the interview guide served as a template for the conversation, questions were open-ended and allowed participants to guide the narrative and flow between topics. The interviewer used probes throughout to expand on responses or provide more detail, such as how they felt during doping control, what they liked/disliked about different parts of anti-doping education or beliefs about anti-doping's importance.

Semi-structured interviews with people who have an intellectual impairment often require facilitation to generate rich data. In line with Sigstad and Garrels (2018) recommendations, the lead researcher therefore ensured extra time was given to responding to questioning, used

simple language throughout and repeated questions if needed. Further, the interviewer used paraphrasing to reframe what participants had already reported, which can help them make corrections and complement their statements. Similarly, and to aid participants in structuring the conversation and better remember what had been asked, he also summarised what was said after each main topic and gave opportunities for the participant to add any further comments. Pilot testing with athletes and feedback from experts in conducting research with intellectual impairments was sought prior to data collection, which helped ensure that questions elicited rich descriptions.

For athletes, they were interviewed first, and their support personnel interviewed immediately after. Athletes had the choice to be alone during interviews, but all preferred to have their support personnel with them. While it was stated at the beginning of the interview that support personnel remain silent so that their athlete could express their own experience and understanding of the question, the interviewer emphasised to athletes that they could seek support from them at any time. All athlete support personnel spoke in each interview, which often related to rephrasing the question for clarity or when confirming/correcting a specific event. For example, when discussing an anti-doping event (e.g. doping control or education session), athletes would turn to their support personnel to confirm that the event they were discussing was correct. If support personnel discussed their own experiences at this time, the interviewer interrupted at an appropriate pause and politely stated that they would have the opportunity to explain this afterwards. Support personnel interviews were conducted on their own with the lead researcher.

### *Data analysis*

All interviews were recorded in Microsoft Teams, transcribed verbatim and uploaded to NVvio 12 (QSR International Pty Ltd). We followed Braun and Clarke's (2019, 2020) reflexive thematic analysis, whereby we used a semantic and inductive iterative approach to analysing the data and provide a descriptive account of athlete experiences of anti-doping. While latent (i.e. implicit and informed by the underlying concepts) and deductive approaches were considered, a semantic and inductive approach was mostly used given the lack of research in this area and to ensure that the voices of the athletes were directly reported.

The lead author first transcribed the interviews as soon data were collected and immersed himself within each transcript by reading each one multiple times and making initial notes and patterns. Initial codes were then generated by identifying key features or points of interest, before each code was considered in relation to others, whereby some were collapsed, reconsidered, or merged with others to identify higher-order themes and lower-order themes within the data. This process was conducted iteratively, which began at the outset of data collection and ended once all interviews were conducted. Afterwards, the lead researcher refined themes in consultation with both co-authors during regular meetings to test how well the themes told the story of the data in line with answering the study's question. In one case, the lead author discussed his initial interpretation of anti-doping education being 'overly complicated' and included a number of lower-order themes related to formatting of information, length of the sessions and tasks used to increase engagement. Co-authors offered alternative perspectives about whether it was more succinct to address this in one lower-order theme that related to the inaccessibility of anti-doping education. Upon reflection and further analysis of data, these initial themes were combined and later labelled 'anti-doping education is complex and overwhelming' and integrated into the higher-order theme 'anti-doping is inaccessible and can cause negative emotional responses'. Final refinements were later considered, including defining and refining themes, how they fit within the overall purpose of the research and ensuring that there are clear boundaries between each theme. Finally, the report was written in a manner that ensured the evidence of each theme was concise, logical, coherent, non-repetitive and provided an accurate account of the story indicated by the data. To avoid deductive disclosure,

individual participant characteristics are not detailed, such as events, accolades, and sport experience, and a pseudonym is given for each participant's name.

## Results

Twenty-six participants (Table 1 for characteristics) volunteered for the study (10 athletes and 16 support personnel). All athletes were actively competing at an international level, with two classed as 'world-class elite', and eight 'successful elite' (Swann, Moran, and Piggott 2015). All had attended anti-doping education and just under half ($n = 4$) had experienced doping control. Support personnel were parents ($n = 9$), guardians ($n = 1$), or coaches ($n = 6$) to the athletes. For all athletes, we interviewed their support personnel, with three additional coaches interviewed who were not connected to any athletes in the study. To guide the reader through our interpretation of the data, we have grouped our themes into higher- and lower-order themes (Table 2). A combination of individual quotes and conversational dialogues is presented, and we refer to both athletes and support personnel as 'participants'.

### *Understanding of anti-doping policy and practice and its importance*

In this higher-order theme, we focus on athletes' understanding and perceived importance of anti-doping. Four lower-order themes were present, which we named: 1) Anti-doping is important to stop cheating, 2) Superficial understanding of anti-doping, 3) Diversity of intellectual impairments and 4) 'Why do I need to be drug tested? I am not a cheat'.

#### *Anti-doping is important to stop cheating*

During interviews it was clear that all participants valued the existence of anti-doping and recognised doping as a form of cheating. Athletes expressed the belief that anti-doping can '*stop people cheating*' and would help keep '*sport fair*' during competition and they valued to '*always play by the rules*'. Importantly, athletes understood the value of doping control as a means in which to detect those who are gaining an advantage.

Support personnel reinforced their athletes' beliefs about the value of anti-doping in protecting the integrity of sport and spoke about how important this was to '*ensure a level playing field*', which can '*keep sport fair*' and '*ensure clean competition*'. As a result of the perceived importance of anti-doping, there was recognition that their athletes would not dope. Breaking the rules and playing fairly was discussed as fundamental reasons why their athletes would refrain from doping, which could result in negative emotions, such as shame and guilt. When discussing this with Sandra (parent), the importance of following rules was valued in all aspects of their life, both within and outside of sport, and that breaking rules to succeed was unacceptable:

Table 1. Participant characteristics.

| Characteristic | Athletes ($n = 10$) | Support personnel ($n = 16$) |
|---|---|---|
| Gender (n) | Female (2), male (8) | Female (8), male (8) |
| Age in years | 23 ± 5 | 54 ± 7 |
| Nationality (n) | China (1), Denmark (2), Great Britain (4), India (1) and New Zealand (2) | Denmark (2), France (1), Great Britain (6), Japan (1), India (1), the Netherlands (1), New Zealand (2) and USA (2) |
| Sport/role (n) | Athletics (5), swimming (4) and cycling (1) | Parent (9), guardian (1) and coach (6) |
| Years competing | 11 ± 5 | *N/A* |

Table 2. Higher- and lower-order themes.

| Higher order | Lower order | Transcript example |
|---|---|---|
| 1. Understanding of anti-doping policy and practice and its importance | Anti-doping is important to stop cheating | 'To ensure fair competition, not just for you, but for your competitors as well' (athlete) |
| | Superficial understanding of anti-doping | 'Just how little and how difficult it is for him to explain. I gotta feeling he knows part of it with drugs but he hasn't gotten the whole sense of it, even though we've been through the education together' (support personnel) |
| | Diversity of intellectual impairments | 'Sometimes it's a love and hate relationship cause some have a ADHD and other character issues as well' (support personnel) |
| | 'Why do I need to be drug tested? I am not a cheat' | 'All they know is drugs is the big thing, drug is drug free sport what have you, that is the big thing. But all of a sudden there's this individual that says, listen, you – Mr intellectually disabled, you have to come with us for a drug test and it is like panic straight away panic because they think they are in trouble' (support personnel) |
| 2. Anti-doping is inaccessible and can cause negative emotional responses | The needs of athletes with intellectual impairments are not considered | 'They are not protected in any way. If they are, if they have a positive doping test. I don't think that no one will take their mental disability into consideration in in that case' (support personnel) |
| | The complexity of anti-doping education | 'I was trying to like you know, trying to get most of it learned, but it's gone out my brain. It's been like a week' (athlete) |
| | Consequences of inaccessible anti-doping policy and practice | 'They just did not understand . . . it was a lot of distress, and it took six hours to get a sample. It was quite dramatic and traumatic . . . It was really, really stressful' (support personnel) |
| 3. Supporting athletes with intellectual impairments | Importance of trained and supportive doping control staff | 'I know they're doing their job and keeping us safe' (athlete) |
| | Creating accessible anti-doping education for those with intellectual impairments. | 'Because of the experience they've experienced it, they've done it multiple times. It was good when the famous athletes came along and talked about stuff. That was a good part of it' (athlete) |
| | Support personnel as anti-doping educators | 'He's not got access to the information to make the choices in the 1st place and then to do the checking that lands on us anyway. So we would just shepherd him through the whole of that process' (support personnel) |

*Sandra*: Ryan (athlete) just doesn't like breaking rules. You know, if that's for two reasons: It's a rule, not broken. That's just rules. You don't break a rule. And secondly also that you know he would be, you know, seem to be taking something means he could have been had a competitive advantage, and he would understand the wrong in that.

### *Superficial understanding of anti-doping*

Athletes were familiar with the anti-doping policies and practices in place and had a broad understanding of their responsibilities (e.g. do not take a banned substance). However, this understanding was limited to the ingestion of drugs and being tested:

Jonathon: Doping is pills and anti-doping is then whatever you do to avoid the athletes' taking pills. When I was competing, I had to pee in a cup and stuff.

Damian: Anti-doping is where you're against the use of performance, PEDs (Performance Enhancing Drugs), in sports. Um . . . and . . . Especially anti-drugs in sports.

**Milo:** They do like testing and they test you and that. They come and do tests and pee tests erm . . . they do bloods as well. It is to stop people from taking like different drugs.

Upon further questioning about doping control, it became clear that some athletes did not differentiate between prohibited and permitted drugs. Instead, they spoke about the need to refrain from taking *all* types of drugs in efforts to avoid committing an anti-doping rule violation. This lack of distinction showed that while athletes were aware of anti-doping being in place to '*catch drug cheats*', it was difficult for them to know which drugs they were and were not permitted to use:

> *Isla (parent)*: He's (Finley, athlete) got it into his head that he can't even take a paracetamol . . . he won't even take a paracetamol because he thinks it could be banned.

Throughout the discussions, the interviewer identified that athletes did not describe other policies and practices that contribute to anti-doping, such as failure to comply with doping control, whereabouts and reporting incidents of doping. It became clear that beyond drug use and doping control, many were not aware of more complex practices, such as checking whether a dietary supplement needed to be batch tested, if a medication was on the Prohibited List or Therapeutic Use Exemptions (TUE). When specifically asked about these, athletes did not recall or specifically remember what they meant and could not articulate their responsibilities. Therefore, athletes' knowledge of anti-doping was evidently related to the use of drugs in sport and doping control, and that other policies and practices beyond these were not remembered or considered.

### *Diversity of intellectual impairments*

During interviews, it was clear that athletes were not a homogeneous group. Differences between athletes were notable in various aspects such as attention, communication, emotional stability, literary skills, comprehension and independence. Support personnel provided further confirmation of this and emphasised that there is large diversity in characteristics, traits and behaviours, which in turn can make it difficult to help them understand anti-doping:

> *Hazel* (parent) You've got such a variety of impairment. So, you've got your autism, which of course is its own spectrum. You've got your Down Syndrome, which is its own spectrum, and then you've got your S14 (para-swimming classification), which are your intellectually impaired, also with its own spectrum. So, as like okay, how best do you address their needs so that they're not, you know, terrified by a procedure that's vitally important to ensure that everybody's competing in the same sort of level, you know?

Given the large variation between athletes, this was recognised as challenging for helping athletes better understand the anti-doping rules that they are expected to follow. As such, many support personnel emphasised the need to consider such diversity when educating athletes about their anti-doping rights and responsibilities.

### *'Why do I need to be drug tested? I am not a cheat'*

Athletes understood that the doping control procedures were in place to '*stop cheating*'. However, there was confusion as to why *they* needed to be drug tested if they were '*not cheats*'. When being selected for a doping control test this created confusion as they knew they had not taken a prohibited substance and questioned why they needed to be tested. In conversation with Michael (coach), he explained that because Milo (his athlete) does not dope, he did not understand why he needed to be drug tested when this is in place to detect those who are doping:

> *Michael (coach)*: So, Milo is pretty aware of the process (drug testing) and is totally aware of the fact that there are things that you shouldn't take because they're not allowed . . . But I wouldn't have said he had a great awareness of it. He was in [a competition] and he won, at that point we discussed anti-doping, [and] his response was '*why? I don't take drugs*'. And so I think he's an athlete that doesn't have a great understanding of the whole situation.

### *Anti-doping is inaccessible and can cause negative emotional responses*

Within this higher-order theme, we recount the perceptions of inaccessibility of anti-doping and the negative emotional responses that can occur. We separated this into three lower-order themes: 1) The needs of athletes with intellectual impairments are not considered, 2) The complexity of anti-doping education and 3) Consequences of inaccessible anti-doping policy and practice

#### *The needs of athletes with intellectual impairments are not considered*

A theme consistent between all participants related to the needs of athletes being rarely considered in the creation, implementation, and delivery of anti-doping. That is, while anti-doping education was described as '*very informative*', '*really good*' and '*fascinating*' in helping support personnel understand *their* anti-doping roles and responsibilities, they reported that it was unsuitable for their athletes. Anti-doping education was suggested to have been created to accommodate all athletes, without addressing the needs for those with intellectual impairments:

*Sophie*: To be honest, the education that the intellectually impaired get is not what they need. It doesn't cover it at all. It doesn't cover. It's supposed to be a one size fits all and isn't.

During anti-doping education sessions, athletes mentioned that they would often attend sessions with other athletes with and without intellectual impairments. Although athletes enjoyed being with others during these sessions, from a learning perspective, having others present hindered how comfortable they felt in the sessions, which in turn affected their engagement and how much information they retained. Having too many athletes in their sessions prevented them from engaging with activities and content, especially during discussion tasks with others, and would frequently experience a loss of concentration and anxiety in engaging with the session. Milo (athlete) explained that when discussions with other athletes began, he would lose concentration given the number of different answers and opinions voiced in the room:

*Interviewer*: You completed the anti-doping session when you had someone chatting to you. Do you remember what this was like?

*Milo*: Yeah, they were alright . . . I didn't seem to have any questions because I was just lost like yeah, I got distracted and that with people talking to me.

*Interviewer*: Okay, would you ask a question during the session because you felt lost?

*Milo*: Erm I didn't want to answer any questions because there were too many people like answering the questions at one time.

Support personnel discussed that while their athletes are expected to attend the anti-doping education sessions, '*their needs are not well understood*' by the anti-doping staff who deliver the sessions. This brought many to indicate that, in its current form, anti-doping education is not fit for purpose for meeting the needs of those with intellectual impairments.

#### *Anti-doping education is complex and overwhelming*

All participants stated that information presented in anti-doping education sessions was too complex to understand. With the number of layers to anti-doping, support personnel recognised their athletes did not fully understand anti-doping. For example, while athletes understood they were not

allowed to take a prohibited substance, they did not know how or why they needed to check the prohibited status of a medication, and if the medication is prohibited, the process in applying for a TUE. As such, when this was delivered in a one-off education session, this made it difficult for athletes to comprehend, which created feelings of being overwhelmed.

Participants spoke about the difficulties in grasping key learning outcomes given the way it was delivered and presented. Often, athletes attended large lectures, akin to a university class, and would sit listening to an anti-doping educator for up to an hour. Support personnel spoke about the large quantities of anti-doping jargon (e.g. strict liability, rule violations, whereabouts), the number of responsibilities they needed to remember (e.g. checking medications, batch testing supplements, reporting doping) and the tasks they were asked to engage with (e.g. order of a drug test, identify the prohibited substance, discussions with other athletes). The following discussion with Finley (athlete) highlights how difficult and overwhelming anti-doping education can be for an athlete with intellectual impairments when there is a lot of information to retain:

*Interviewer*: Could you tell me a little bit about your first memories of anti-doping education?

*Finley*: To be honest, don't take this the wrong way, but they were really, really bad and boring.

*Interviewer*: And why were they really bad and boring for you?

*Finley*: They put up the screen with loads of the writing of it and they talk in front of it, really. And I'm guessing that the people [educators] were expecting people [athletes] to read these outs in their heads. But to me, I was just listening to it really . . . . But you're kind of get through a few words, you get the little bits of it you know what I mean.

*Interviewer*: Yeah, I know what you mean. There is a lot of text on the screen and it can be difficult to follow. Is there anything else about the anti-doping education sessions that you find difficult?

*Finley*: Well, I can't read well, I can't read. I'm getting there, but not that great and the size, you get one paragraph, then it goes next paragraph [and then] to something else. It's hard finding hard to focus on it and pay attention.

Due to the quantity of information presented in sessions, many athletes found it difficult to retain key learning outcomes where it would go '*in one ear, but then gets jumbled up inside before it goes out the other side*'. Support personnel reinforced this and referred to the education as too '*abstract*', '*long*' and '*technical*', as well as '*very challenging*' to comprehend. It therefore became clear that expectations for athletes requiring to know and understand their anti-doping rights and responsibilities was unattainable in its current format.

### *Consequences of inaccessible anti-doping policy and practice*

Given the inaccessibility of anti-doping education, support personnel expressed concerns that their athlete may be more likely to commit an anti-doping rule violation unintentionally. This was in relation to the notion of strict liability, which underpins anti-doping policy whereby an athlete can commit an anti-doping rule violation without intent or knowledge of doing so. As such, support personnel envisioned their athlete being banned from sport for a reason they did not understand or

were aware of. Given the consequences that can follow (e.g. banned from sport for 4-years), support personnel were fearful and anxious of having their athletes comply with anti-doping practice when they do not understand it:

> *Sienna (parent)*: They are not protected in any way. If they are, if they have a positive doping test, I don't think that no one will take their mental disability into consideration in in that case. So that's my biggest worry.

Further to the increased risk of committing an anti-doping rule violation, participants reported negative emotional experiences. Athletes expressed that they were '*scared*', '*nervous*' and '*stressed*' for being selected, with support personnel indicating that it caused '*anxiety*', '*panic*' and '*distress*'. Four issues were associated with the negative emotional response of reporting to doping control. First was a feeling of doing something wrong, which was underpinned by a lack of understanding of why athletes had been selected. William (coach) mentioned that his athletes '*thought they were in trouble*' and Curtis (guardian) explained that it was '*because she would think she's already done something wrong*'. Second, the invasive nature of it was identified as reason that caused negative responses given the requirement of urinating in front of a person unknown to them. Participants reported that the entire procedure was '*uncomfortable*', '*alien' and 'tense'*, and when Sandra (parent) was asked about the negative responses her athlete experienced, she explained that '*the idea that he has to go to the toilet in front of somebody else, is quite embarrassing*'.

Third, some athletes lived alone and were told to not open the door to an unexpected visitor. This is likely to have caused tension between what the athlete had been told *not* to do from their parents and what they were expected *to do* from an anti-doping perspective. As such, irrespective of the decision they made, athletes believed that they were going to do something wrong, which caused feelings of discomfort. Finally, changes of routine were reported to cause negative experiences whereby many athletes wanted routine and structure to their day. Having to unexpectedly report to doping control, either after a competition, training or at home, would often coincide with, for example, training commitments (e.g. warming down) or daily routines (e.g. making dinner). This then resulted in some athletes finding the unpredictability of what was about to happen difficult to cope with as Stefanie (athlete) and her father, Chris, explain:

> *Stefanie*: It was a bit of a shock, actually. I felt like, really like, uncomfortable I did . . . I didn't like any of it the the anti-doping, so that's fine. It was like quite, quite shocking actually . . . and then they said 'We have like come to to give like a drug test' . . . They turned up at my house, something I didn't know. I wouldn't answer the door. If there's somebody at the door, which I don't understand . . . I don't like answering most of them and I just don't answer it so . . . The the first time it took a bit longer because it was my my my first time doing it. Plus, I was like we like, I was quite shocked.

*Chris*: It was quite, uh, traumatic . . . We got back from training . . . and then the anti-doping team turned up, so she found it emotionally difficult and tearful . . . Things that are not planned ahead, she found hard to cope with. So, in lockdown, events have to have been confirmed. She really struggled with [this] because she likes to know what's going on. She's more secure when she knows exactly what's going on and that. She'd like it if I knew when they were coming, it would be better and what she means is to just be prepared for it.

### *Supporting athletes with intellectual impairments*

This higher-order theme relates to ways in which athletes with intellectual impairments can be supported during anti-doping practices, which is separated into three lower-order themes: 1) Importance of trained and supportive doping control staff, 2) Making anti-doping accessible for those with intellectual impairments and 3) Support personnel as anti-doping educators.

### *Importance of trained and supportive doping control staff*

The negative emotional experiences athletes had with doping control were eased with empathy and support from staff who were aware of their needs and impairment. After participants explained their initial reactions to being selected for doping control, many reflected that the staff ensured that the process was made easier with the supportive and empathic approach they showed. After the test, athletes mentioned that they felt '*safe*' with the doping control officer and support personnel commented that they had '*total trust*' in them. While Stefanie (athlete) mentioned she found doping control '*shocking*' and her father, Chris, stating that it was '*traumatic'*, this was overcome by the way in which it was conducted by the staff, who were described as '*really nice people*' and '*very friendly*'. Here, Chris explains that the doping control officers were well aware of the needs of his athlete and that they treated Stefanie with empathy and care to ease the distress that she experienced when being asked to report to doping control:

*Chris*: They're extremely good, extremely competent. They obviously must follow the schedule exactly to the letter, which they do. But to do that in a friendly, supportive sort of, slightly relaxed in one sense of the word, was quite impressive.

Thus, while the process of taking part in doping control can increase anxiety for athletes, the doping control staff were integral for ensuring that they felt safe and eased any distress by being friendly, caring and empathetic.

### *Creating accessible anti-doping education for those with intellectual impairments*

With the anti-doping rules and regulations being difficult to comprehend during education sessions, participants identified several ways to better support their understanding and engagement and make it more accessible to help them better recognise their rights and responsibilities. First, athletes identified that learning from other athletes, rather than it being from an anti-doping educator, helped them '*focus*' on the content as it '*made it more real*'. Support personnel discussed that learning about how other athletes' '*story*' their own experiences can help their athletes better grasp key learning outcomes than when anti-doping information is presented prescriptively from someone who they cannot relate to. Second, education that was experiential, which included '*role playing*', and '*materials that the athletes could hold*' were identified as important to help them better understand the content. Athletes better remembered and readily recalled their experiences of anti-doping when they had been actively involved in it. Third, short sessions (<20 minutes) that are tailored for athletes with intellectual impairments and delivered in small groups were identified as ways in which to better help them. Here, Sophie (coach) explains that separate, smaller group sessions for athletes with intellectual impairments could increase engagement with the content by making them feel more at ease and allow opportunities to express their true self:

*Sophie*: I would say it's important to have them in a separate session because that way they don't feel exposed or vulnerable by the people who do understand and are sitting there fidgeting as they're bored, you know. I think it's important to let them have a session where they're going to be able to come out and say 'I understood all of that. That all made sense. And now I know what I'm going to do'.

### *Support personnel as anti-doping educators*

As a result of the lack of information athletes retained during anti-doping education, many support personnel reported that the sessions received by the athletes were ineffective so took personal responsibility to help their athletes better understand the anti-doping rules. All support personnel attended the education their athletes received, and many took it upon themselves to further inform

their athletes about specific anti-doping issues throughout the season, whether that be at training, in the car to a competition, or at home. Hazel (parent) talked with Damian (athlete) about why he needs to use the informed sport website for checking a dietary supplement at the dinner table, and Michael (coach) informed Milo (athlete) that he would need to go with the doping control officer if he was selected at a competition.

Further, it was recognised that support personnel can work together to collectively help their athlete better recognise and understand their anti-doping rights and responsibilities. As athlete support personnel can include, for example, parents, nutritionists and physiotherapists, they would often lean on one another to educate their athlete about particular topics (e.g. nutritionist mentioning to only use dietary supplements that are batch tested, coaches informing what happens at doping control, parents showing how to check medications) and further reinforce the anti-doping education learning outcomes throughout the season. Here, William (coach) discusses the value of having a team around the athlete who are anti-doping educated and can support them at different times throughout the day:

> *William*: It has to be a collaboration with the coach and the parents. And if you've got a strong enough support team around that athlete and the support team are educated well enough, they can get it through to the athlete or get it across to the athlete. What they can do, what they can't do, what they should do and what they shouldn't do.

## Discussion

Our data highlight a significant disconnect between the intended universality of anti-doping policy and practice and its actual accessibility of athletes with intellectual impairments. Athletes reported that they are aware they should not take a prohibited substance, which can result in an anti-doping rule violation following doping control (e.g. urine test), but did not fully comprehend more complex aspects of anti-doping, whereby they can commit an anti-doping rule violation through other means (e.g. refusing a drug test, taking a prohibited medication). These findings adhere to the theoretical distinction made by Martinelli et al. (2023) between 1) accepting the legitimacy of anti-doping policy, leading to voluntary cooperation, and 2) the behavioural component of compliance underpinned by understanding of anti-doping practices. In short, athletes accepted anti-doping, but did not necessarily understand why.

With a lack of understanding, athletes reported experiencing negative responses during doping control, such as, anxiety, confusion and fear. Reasons for such negative responses were related to, for example, the perception of being classed as a 'cheat', the unexpected nature of the test, change of routine and contravention of social norms (e.g. urinating under observation). Such experiences were likely to have created cognitive dissonance (Etherton, Osborne, and Burroughs 2020; Harmon-Jones and Mills 2019) between what athletes were told not to do (e.g. 'do not open the door to someone you don't know) and what they were expected to do (e.g. 'answer the door to an unknown doping control officer). Resolving dissonance can require mental flexibility, social skills and creative thinking, such as adapting thoughts, positive self-talk or seeking justifications (McGrath 2017), which can be hard for those with intellectual impairments (de Vries and McGlinchey 2023). To help with this, athlete support personnel highlighted the important role doping control staff had in helping them manage their discomfort by recognising it, showing empathy, explaining why it is happening and allowing flexibility, such as allowing them to finish training, warming down, and eating dinner. This data further underscores the requirement of training anti-doping control staff in understanding how to appropriately support athletes with intellectual impairments.

While anti-doping education is implemented to help athletes better understand their rights and responsibilities during anti-doping practice (Woolf 2020), our participants had poor experiences of it, with many reporting that it was too long, complicated and '*text heavy*'. Little adaptation was made to the traditional classroom-based model, and such practices are suggestive of ableism, which refers to the prejudice in favour of non-impaired people and the discrimination against those with

impairments through culturally situated norms for certain abilities (Campbell 2008). The education athletes received is favoured towards those who can understand, interpret and act upon it and underpinned by an ideal that athletes should aspire to in order to participate in sport (e.g. understanding strict liability, being able to check medications and knowing how to apply for a TUE). This unintended consequence of current anti-doping approaches, is therefore likely to have excluded, stigmatised and alienated those who could not grasp the information being presented.

Previous research into educational settings for people with intellectual impairment has demonstrated how the typical cognitive limitations reduce the efficacy of this type of educational model (Owens et al. 2020). Cognitive skills such as attention, memory, speed of processing are linked to learning efficacy and as such, for anti-doping education, a need exists for this to be adapted so that it is effective for athletes with intellectual impairments. Inclusive adaptations are needed and as suggested by participants in our study and elsewhere (Jimoh, Jacob, and Ayomide 2024; Khan et al. 2024; Knight et al. 2019) include, shorter single-topic, sessions (<20 minutes) delivered at a slower pace in small groups, with accessible language, which repeats messages and focuses on interpersonal skills via multiple delivery modes (e.g. experiential exercises, role models from those who have intellectual impairments). As there are several 'invisible' anti-doping expectations placed on athletes (e.g. valuing fair play and honesty, understanding anti-doping rule violations, knowledge of anti-doping rights; Martinelli et al. 2023), athletes with intellectual impairments can be more reliant on learning from observed behaviour, which is incredibly difficult when much of the required behaviour in anti-doping is unobservable. This places further emphasis on accessible educational materials that can help educate athletes about the underpinning reasons for anti-doping, and, importantly, why these are in place.

Although our suggestions above are ideal, we recognise that in practice this is likely to be very difficult for a national anti-doping organisation to implement (Backhouse 2015; Woolf 2020). To help athletes understand their anti-doping rights and responsibilities, support personnel were identified as integral to the process. Support personnel are central to athletes with and without impairments (Mazanov et al. 2015; Patterson, Backhouse, and Duffy 2016; Patterson, Backhouse, and Jones 2023), who can help reinforce messages and guide decision making to their athlete (Barnes, Patterson, and Backhouse 2020). Our data highlighted that support personnel work collaboratively to reinforce key messages to their athletes throughout the year (e.g. in the car, during dinner, at a competition) and take a collective responsibility for their athlete's decisions. Support personnel acting as intermediaries for people with intellectual impairments is common practice within settings such as health care (Chinn 2022; O'Brien and Randjelovic 2024) and provide an experienced resource. As such, we highlight the need for athlete support personnel to be included in the education that their athletes receive so that anti-doping education can be reinforced throughout the year.

### *Reflections*

There are a number of reflections from this study we would like the reader to consider. First, while some interviews were short (the minimum being 22 minutes), this is not unusual for those with intellectual impairments (Hollomotz 2018). Many people with intellectual impairments find it difficult to articulate and recall complex experiences and will answer directly and succinctly, without adding additional supplementary information (Corby, Taggart, and Cousins 2015). Although this may have decreased the amount of data obtained, participants articulated specific and strong views about their experiences, which were further supported and elaborated on by their support personnel. As such, the voice of the athlete was central in the interpretation, representation and recommendations presented in the paper. Second, we offered a financial incentive to participants completing the study. While researchers may not be able to replicate this in future studies, we found that this unlikely affected who and how many participants came forward. Some participants declined payment initially, with others mentioning that they would have completed the study without it. This was reflected in their value of the study's aims, where they stated how important the research was for

them and the community of athletes with intellectual impairments. In short, our participants valued the opportunity to have a platform in which to express their thoughts and experiences, and how anti-doping policy and practice can be improved.

Finally, our data and the recommendations that follow, are not limited to those with intellectual impairments and may be transferable to other athletes (c.f. Smith 2018), who are likely to have similar experiences, such as distress during the doping control procedure, confusion with why they are being selected, and encountering education to be difficult to engage with. Such experiences also relate to notions of naturalistic generalisability (Smith 2018), which resonate with the lead author's experience of delivering anti-doping practice (e.g. doping control and education) where many athletes have discussed the anxiety of doping control and the confusion of strict liability. As such, while we have focused here on helping to improve anti-doping policy and practice for those with an intellectual impairment, our data can be generalisable to other athletes without impairments and highlight potential best practices that can be implemented (e.g. shorter education sessions, empathetic doping control staff).

## Notes

1. While over 4 million athletes with intellectual impairments compete at the Special Olympics, these are not bound by the World Anti-Doping Code (WADC 2021). The mission of the Special Olympics is to increase participation in sport for those with intellectual impairments, whereas the International Paralympic Committee aims to deliver the Paralympic Games for athletes to demonstrate sporting excellence. In this article we focus on those athletes who compete in Paralympic sport.
2. For brevity, we use the term 'athlete' to refer to 'athletes with intellectual impairments' unless stated for emphasis.

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