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***“Doing What Is Right and Doing It Right”*: A Mapping Review of Athletes' Perception
of Anti-Doping Legitimacy**

Toby Woolway

Faculty of Science, Engineering and Computing, Kingston University London, UK

Lambros Lazuras

Sheffield Hallam University, UK

Vassilis Barkoukis

Aristotle University Thessaloniki, Greece

Andrea Petróczi*

Faculty of Science, Engineering and Computing, Kingston University London

Penrhyn Road, Kingston-upon-Thames, Surrey KT1 2EE, UK

* Corresponding author

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***“Doing What Is Right and Doing It Right”*: A Mapping Review of Athletes' Perception of Anti-Doping Legitimacy**

Abstract

Background: The creation of the World Anti-Doping Agency in 1999 and the first implementation of the Anti-Doping Code in 2004 established institutional and legal level legitimacy for the anti-doping movement. Subsequently, a distinct line of research examining athletes' perceptions of anti-doping has emerged. This study aims to review the literature on legitimacy via athletes' perceptions of the underpinning values, fairness and effectiveness of anti-doping rules and procedures.

Methods: A systematic mapping review with computerised literature search of seven databases (EBSCOHost, PubMed, Ingenta, ScienceDirect, SCOPUS, SPORTDiscuss and Google Scholar) was used, followed by hand-search of reference lists and relevant journals. Based on Tyler's (2006) psychological components of legitimacy (*proper*, *just*, and *appropriate*), a bespoke conceptual map and analytical framework was developed and employed for retrospective categorisation.

Results: Thirty-nine studies representing 15,434 participants met the inclusion criteria. About half of eligible studies discussed legitimacy components without identifying them as such.. Identification of studies for legitimacy concepts faced considerable ambiguity in measures and interpretation, particularly in distinguishing between elements of being '*just*' and '*appropriate*'. Single focus on one aspect was rare but only 11 of the 39 studies included all three elements of perceived legitimacy. Overall, athletes agreed that anti-doping is '*doing the right thing*' to protect clean sport but their views differed on whether the existing anti-doping system is effective and implemented fairly (i.e., '*doing anti-doping in a right way*'). Owing

to the ad hoc measurements and diverse methodology, quantitative meta-analysis was not feasible.

Conclusion: Legitimacy is an important concept in anti-doping. Attention to globally equal and fair implementation of testing and sanctioning is warranted. Legitimacy perceptions can be improved by better communication from anti-doping organisations to highlight progress with detection, greater transparency and explicit support for athletes who were victims of doping. Future research requires standardised conceptual framework and measures.

Keywords: doping control, sport, World Anti-Doping Code, WADA, fairness, doping test

Introduction

Over the last decade the world of sport has witnessed some of the largest doping scandals in its history (Ingle, 2019). High-profile examples include Lance Armstrong and the USPS cycling team (USADA, 2011), the ban of the Russian Olympic team from the 2016 Summer Olympics in Rio de Janeiro requiring clean athletes to compete under a neutral flag (Duval, 2017), and the UK Parliamentary Committee for Digital, Media, Culture and Sport condemning Bradley Wiggins and Team Sky in 2018 for misusing the Therapeutic Use Exemption (TUE) system (Digital, Culture, Media and Sport Committee, 2018).

Adding to the complexity of the doping problem, anti-doping is not a singular strategy but a multifaceted system. Elements of this anti-doping system have received criticism over the past two decades. These included testing accuracy (Pitsch, 2009) and scientific integrity (Pielke & Boye, 2019); infringement on personal privacy (Hanstad & Loland, 2009; Houlihan, 2004), conflicts for physicians (Dikic et al., 2013; Hoberman, 2002), health risks owing to the gaps left in regulation (Camporesi & McNamee, 2014), and problems arising from globalisation and international harmonisation (Kayser & Smith, 2008). Some critiques of the anti-doping system went further and argued that an effective anti-doping system only requires political will (e.g., Berry, 2008; Maennig, 2014; Pielke, 2018). However, in reality, any anti-doping programme has to respond to a dynamic and interdependent system and must overcome significant methodological and logistical challenges.

In response to the emerging challenges over time, continuous developments have been made in anti-doping research. These include improved testing procedures (Bowers & Bigard, 2017), non-analytical approaches (e.g., Ponzetto et al., 2019; Saugy & Leuenberger, 2020) and policy changes (e.g., the whereabouts system; Houlihan et al., 2019; MacGregor et al., 2013), as well as increasing the potential to reduce the use of prohibited performance-enhancing (and -enabling) substances and/or methods (Houlihan et al., 2019). Whilst

organisational strategies and policy are constantly improved upon to underpin institutional level legitimacy (Read et al., 2019), anti-doping controls and education operate at the athlete level, and it is these individuals who the anti-doping rules and measures affect. Despite this, the perceived legitimacy of anti-doping organisations and their rules is one still relatively underdeveloped area in anti-doping research.

Athletes are voluntarily deferent and dependent upon National Governing Bodies (NGBs), National Anti-Doping Organisations (NADOs), and international organisations (e.g., International Olympic Committee, WADA, and International Sport Federations) in order to compete within their chosen sport (Overbye, 2016). Additionally, the unique aspect of anti-doping policies, and many sporting rules in fact, lies in the international aspect of sport competition and thus the global harmonisation of the rules across the globe (c.f., Henning & Dimeo, 2018; Overbye, 2016). There is also an irresolvable contradiction between the striving for success and the ideas of ‘fair play’, especially when it comes to performance enhancement (Bette & Schimank, 2006; Petróczi, Norman & Brueckner, 2017; Christiansen & Møller, 2016). Furthermore, competitive sport boasts multiple stakeholders (e.g., athletes, clubs, governments and general public), each with conceivably different dimensions of what is *proper*, *effective* or *just* (Read et al., 2019).

WADA’s vision to create “a world where all athletes can compete in a doping-free sporting environment” (WADA, 2019) has significantly impacted the world of sport since its creation in 1999. This impact has heavily burdened the athlete, with the introduction of invasive testing procedures, the introduction of the Whereabouts reporting system, and the ever-present potential for anti-doping rule violation (ADRV) via contamination and the Therapeutic Use Exemption (TUE) system. Focusing on those most affected by anti-doping rules, Gleaves and Christiansen (2019) offer a narrative review on how athletes feel about various components of the anti-doping system. This review suggests that athletes generally

accept and support the current anti-doping framework but see problems in the implementation of anti-doping policies across all sport and nations, including testing and sanctioning (Gleaves & Christiansen, 2019). Additionally, athletes believe there to be an infringement on privacy and right to private life and express the desire to have input into anti-doping policies and practices (Gleaves & Christiansen, 2019). This perspective highlights the importance of *perceived legitimacy* on the athletes' sense of duty and obligation to obey the rules and practices of WADA (and other Anti-Doping Organisations; ADOs) and thus to the success of these bodies in establishing doping free sport (Read et al., 2019).

Perceived legitimacy as a psychological concept

To govern and control its members, and ensure compliance, the anti-doping system depends upon athletes perceiving anti-doping rules and organizations as legitimate. Perceived legitimacy is a critically important concept because it can influence an individual's level of acceptance and compliance with an organisation and its rules (Tyler, 2006). Indeed, authorities are effective when their rules and actions are perceived to be legitimate by the people that are most affected by them (Jost & Major, 2001).

Theories and models of perceived legitimacy (e.g., Tost, 2011; Tyler, 2006) suggest the process of legitimation develops from judgement formation, through reassessment, to a point where perceptions of legitimacy are used and shape actions and reactions (Tost, 2011). In these theories, it is the individual who perceives organisations, form legitimacy judgements, and then acts upon these judgements producing macro-level effects (Tyler, 2006). Tyler (2006) proposed that the psychological concept of legitimacy occurs when an authority and its actions are seen as *proper*, *just*, and *appropriate*. Central to the development of legitimacy is a perception of the authority as *proper*; that it is perceived as having the right to dictate laws, its values are valid and shared with those ruled (Tyler, 2006). For example,

one foundation of anti-doping legitimacy is the shared values between the public, the rule-makers (e.g., WADA) and athletes that clean sport is important, and thus it is worth protecting (Overbye, 2016). This legitimacy may derive from judgements regarding the procedures of exercising authority. Hence it is not the actual fairness of decisions and processes, but the belief that they are fair, applied without discrimination and in a courteous, respectful manner (Henning & Dimeo, 2018).

The second component of legitimacy is the belief that the rules implemented are *appropriate* (Tyler, 2006). In the doping context, this is the belief that anti-doping measures are effective to control the use of prohibited substances or methods (Overbye, 2016). Finally, the third component of legitimacy is the perception that the process is *just*, implying that anti-doping rules, procedures and sanctions are applied in a fair and respectful manner, and applied to all athletes equally (Tyler, 2006).

Perceived legitimacy, and in turn power, is an integral factor of the rule orientated anti-doping system (Read et al., 2019). One avenue for legitimation may exist through institutional justification that anti-doping organisations (WADA, NADOs) are motivated by shared values and beliefs in '*doing what is right*' (or *normative legitimacy*) because doping itself is against the spirit and ideals of sport. This *normative legitimacy* considers what anti-doping organisations plan to achieve and whether this outcome justifies the existence of the organisation (Hinsch, 2008). A second, and perhaps the most influential factor on athlete perceptions of legitimacy is whether the procedures undertaken by these organisations are legitimate; are they '*doing it in the right way*'? This is *procedural legitimacy* or how the anti-doping rules are enforced by the organisations that are entrusted with enforcing these rules (Hinsch, 2008). This differentiation may lead an athlete to view the purpose of anti-doping as legitimate, yet the process of anti-doping as illegitimate (Qvarfordt et al., 2016). It is these

interactions between athlete perceptions of legitimacy and anti-doping rules, organisations, and procedures where a gap in the literature exists.

Stakeholders' (i.e., athletes, governing bodies, the public) true perceptions of the legitimacy of anti-doping organisations and procedures, and WADA specifically as the custodian of the Anti-Doping Code, are only revealed when an event challenges the *status quo* (Read et al., 2019). One such recent event has been the investigation into the systemic-level doping in Russia. Read and colleagues (2019) argue that the International and National Olympic Committees and International Sport Federations feel that WADA's functions should be limited to its regulatory capacity. In contrast, national anti-doping agencies, government representatives and athletes pressure WADA to do more to tackle doping use in sport and address doping in sport at all levels. WADA is therefore in a precarious position, balancing between satisfying expectations from multiple stakeholders, whilst constantly challenged by the need for global harmonisation.

Aims

Thus, the aim of the present study is to map out and categorize the extant literature on the perceived legitimacy of anti-doping policies or their elements (e.g., testing selection, protocol, Whereabouts requirements, results management, or anti-doping education) among competitive elite athletes. The key concept we focus here is the *perception of legitimacy*, not the actual legal or institutional legitimacy, because the two are not necessarily the same or even aligned (Gowthorp, Greenhow & O'Brien, 2016). The conceptual map of *perceived legitimacy* of anti-doping testing and organisations utilising Tyler's (2006) three components of legitimacy (*proper*, *just*, and *appropriate*) to categorise and present the current research specific to anti-doping legitimacy was endorsed. The mapping review is expected to provide the foundation for further literature reviews and empirical studies on this topic, as well as

policy recommendations for improving and/or restoring the perceived legitimacy of anti-doping policies among athletes.

Method

Systematic Mapping Review

Systematic mapping review studies provide a categorical structure for classifying published research articles and results (Dicheva et al., 2015). Whilst similar to systematic reviews with regards to search study selection strategies, a systematic mapping study employs broader inclusion criteria, intends to map out research topics, and structure a research area (Petersen, Vakkalanka, Kuzniarz, 2015).

Systematic mapping or scoping studies are designed to ‘map rapidly the key concepts underpinning a research area and the main sources and types of evidence available’ (Mays, Roberts & Popay, 2001, p.194). An initial literature search was conducted to assess the feasibility of conducting a systematic mapping review (Arksey & O’Malley, 2005). Following proposed protocol for scoping reviews (Arksey & O’Malley, 2005) and systematic mapping studies (Petersen et al., 2015), we identified and collated a set of articles that empirically investigated athletes’ perceptions of at least one aspect of anti-doping rules and procedures to map and categorise the existing research evidence on anti-doping legitimacy perception among athletes.

Mapping framework

The concept map of normative and procedural legitimacy of anti-doping is depicted in Figure 1. In this figure, we mapped various conceptualisation of ‘legitimacy as psychological concept’ (e.g., Donovan, Jalleh & Gucciardi, 2015; Tost, 2011; Tyler, 2006) into a unified framework, based on the underpinning influence and fairness in the process and fairness of the outcome.

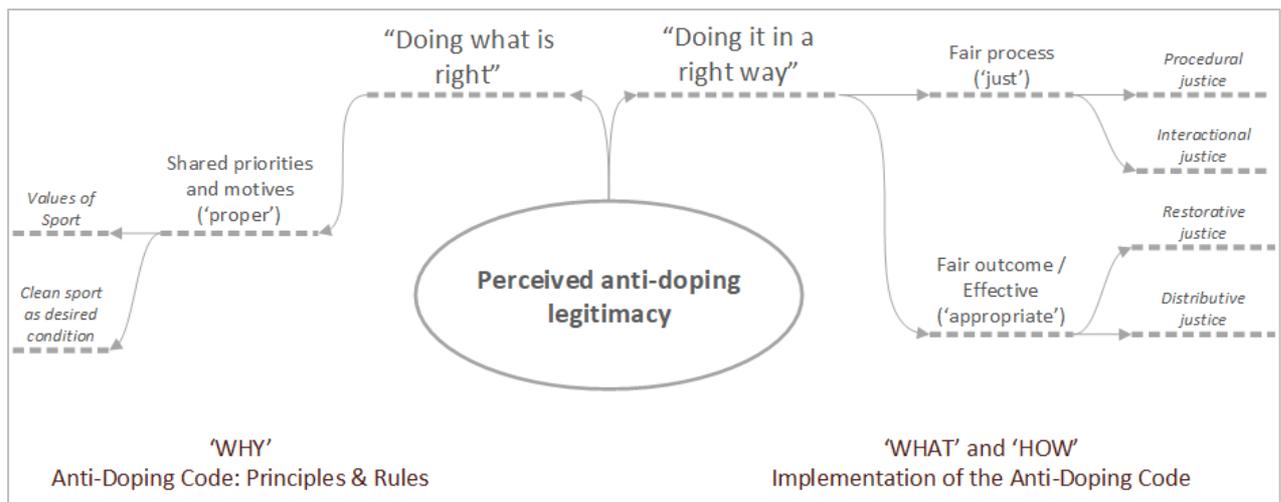


Figure 1: Concept map of anti-doping legitimacy components

The normative status of the anti-doping rules (e.g., the World Anti-Doping Code) is derived from the agreement among the stakeholders - athletes, coaches, athlete support personnel, sport organisations, sport governing bodies, fans, spectators and sponsors - that clean sport is worthy of and in need of protection against doping and therefore control of performance-enhancing substances and/or methods is warranted. Having normative legitimacy via this shared goal, the other equally important element is how the anti-doping rules are enforced by the organisations with specific authority and power entrusted with being the custodian of these rules (e.g., World Anti-Doping Agency). Implementation of the anti-doping rules is governed and globally harmonised by the International Standards, which are technical documents that details (1) the list of prohibited substances, (2) procedures for testing and investigation, (3) laboratories, (4) therapeutic use exemptions (TUEs), (5) protection of privacy and personal information, (6) code compliance by signatories, and from 2021, (7) education (WADA, 2021). The final, critical element of the picture are the organisations responsible for the day-to-day execution of the procedures outlined in the technical documents, the national and regional anti-doping organisations (NADOs and RADOs, international sport federations (IFs) and, since 2018, the Independent Testing Agency (ITA).

Search Strategy

The literature search was conducted in two waves. First, a computerised literature search of electronic databases (EBSCOHost, PubMed, Ingenta, ScienceDirect, SCOPUS, SPORTDiscuss and Google Scholar) was conducted using the search terms anti-doping AND either legit* (for legitimate, legitimacy and legitimation) OR perception, athlete, policy and judgement. In the second wave, we extended the search terms by including keywords reflecting distinct components of normative and procedural legitimacy, guided by the concept map presented in Figure 1. These keywords were: anti-doping AND athlete AND either attitude, view, opinion or perception AND either deterrence (of anti-doping measures), testing, effectiveness, sanction, whereabouts, whistleblowing, education, ‘values of sport’ or ‘spirit of sport’. Studies on athletes’ attitudes toward doping use, knowledge of anti-doping rules, deterrence factors (e.g., health, morality, fear of sanctions) and motivators were excluded unless connection to legitimacy components (i.e., justness, fairness, effectiveness) were explicitly made in the data. Only empirical studies (regardless of the methodology) were included. All studies which were identified through the various search methods were included in the review. Where the search identified a study reported in a language other than English, an English language version was obtained. Theoretical, conceptual papers and analysis of legal cases or aspects were excluded. The initial computerised searches were conducted by two of the authors, following which the remaining authors were included in the appraisal and data extraction of the included papers. If there was agreement by three or more authors on how to categorise a paper, this was accepted. When only half of the authors believed a study could be categorised into *proper*, *just* or *appropriate* a further discussion was held, and when only one author categorised a paper into a legitimacy factor this study was excluded from this category. There was agreement on at least one category for each included research study. There is no clear distinction between the three categories of

legitimacy used to present the findings of this review. Judgements were made based on what questions were asked and what results were presented. This categorisation was often ambiguous and based on the individual judgements of the authors.

A hand-search of the reference lists of identified articles, relevant journals and those publishing journals of identified articles was conducted to identify any articles missed during the electronic database search. Publicly available research reports for grant funding bodies (e.g., WADA, IOC), and research degrees (PhD, MRes) were included. Surveys conducted by anti-doping organisations and governing bodies were also added. The search and selection process is shown in Figure 2. Eligible articles published before March 2020 are included.

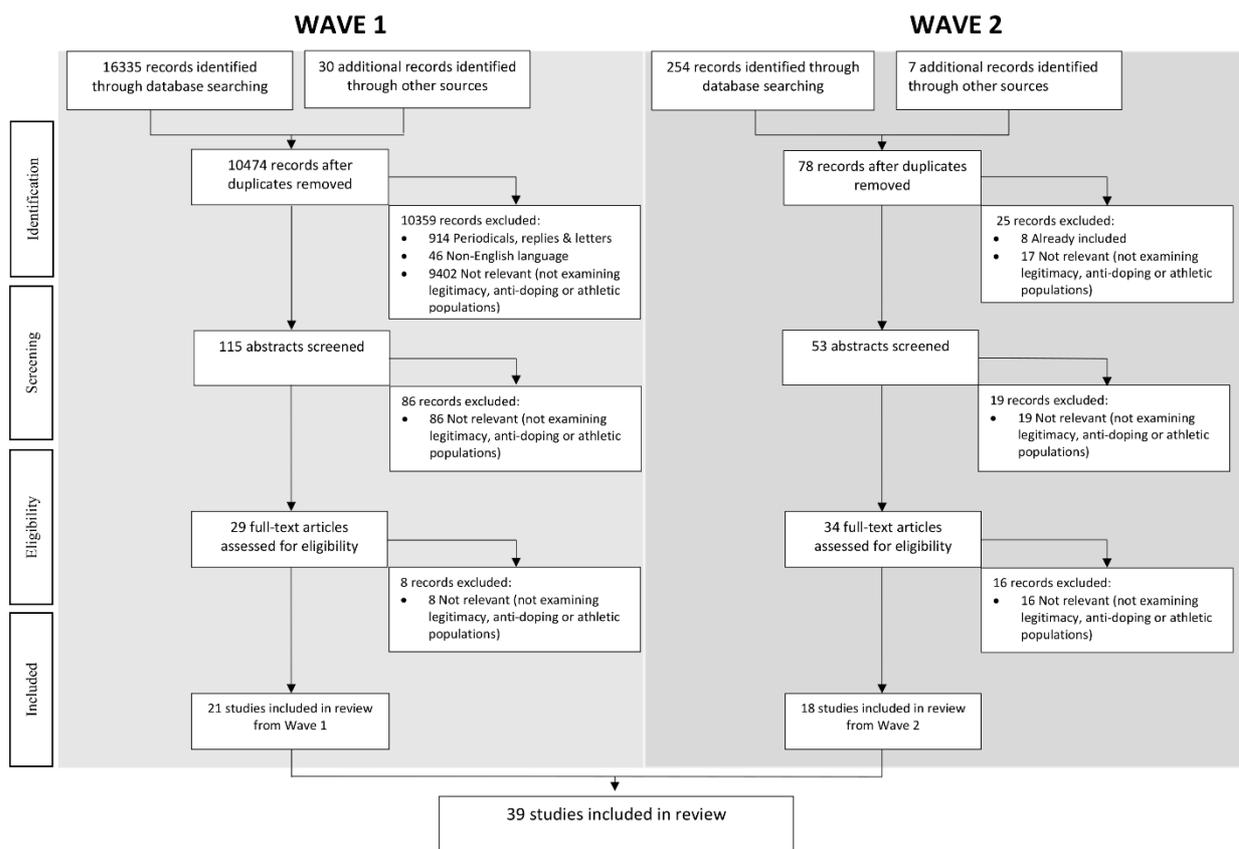


Figure 2: Flowchart of the literature review process

Data analysis

Following the literature search, Tyler's (2006) three components of legitimacy (*proper, just* and *appropriate*) were retrospectively used to provide a framework by which to discuss the studies and their findings. The authors agreed upon definitions for each which were then applied for this categorisation. For the categorisation, anti-doping rules and regulations were perceived to be:

1. '*proper*' when athletes participating in the study explicitly expressed their views on anti-doping rules and its underpinning values. At the operational level, this legitimacy component answered the question: *why* are we doing it? Example questions to guide the assessments were: "*Are anti-doping rules justified on some important values, e.g., values of sport or health of the athletes?*", "*Are anti-doping rules in place to protect athletes and integrity of sport?*";
2. '*just*' when athletes participating in the study expressed their views on anti-doping processes as outlined in the WADA Anti-Doping Code (e.g., sample collection, results management, whereabouts, etc.). For assessment, this legitimacy aspect answered the question: *what* do we do and *how* does it protect clean sport? Example questions to guide the assessments were: "*Are all athletes subject to testing equally?*", "*Is the responsibility for anti-doping shared among stakeholders fairly?*", "*Are rule-breakers punished?*", "*Is punishment for anti-doping rule violation proportionate?*", "*Are costs and burden of doping control shared fairly among stakeholders?*", "*Are athletes supported for complying with anti-doping rules?*";
3. '*appropriate*' when athletes participating in the study expressed their views on the effectiveness of the anti-doping measures. At the operational level, this legitimacy component answered the question: *is it* [anti-doping] *working*? Example questions to guide the assessments were: "*Do anti-doping rules effectively do the job (i.e., catching*

rule-breakers)?”, “Is testing robust against manipulation and false positives?”, “Are athletes supported via education to prevent anti-doping rule violations?”.

For a study to be categorised in any of the legitimacy component, evidence had to be present in the data. Where inferences were only made by the researchers in the discussion (as opposed to directly by the study participants in the data), the study was not included.

For each individual study, 0 was entered if the study did not fit into category or 1 if the study fits into category. Classifications were then collated and results shared among the authors for revision and discussion. A study had to score with three out of four raters to be placed in a legitimacy category. Inter-rater reliability analysis was conducted following the initial independent rater assessments and following discussion and revisions to assessments. Inter-rater agreement between authors' judgement on whether the included studies could be categorised into *proper*, *just* or *appropriate* was expressed with Fleiss' kappa coefficient at both time points.

Results

Search Results

The systematic electronic search yielded 16,589 potential records. Thirty-seven additional papers were identified through hand-searching of reference lists and relevant journals. After removing duplicates, 10,552 records were reviewed by reading the title. Records were excluded if they were not relevant (studies on athletes' attitudes toward doping use, knowledge of anti-doping rules, deterrence factors and motivators), were periodicals or letters, or were not published in English. Following this stage, the abstracts of 168 papers were retrieved and reviewed, after which 86 studies were excluded as not relevant to athlete perceptions of anti-doping legitimacy. The resulting 63 full-text articles were assessed for

relevance. Amongst this research, only thirty-nine records studied anti-doping legitimacy perceptions of athletes and thus were selected for inclusion in the current review.

Characteristics of Selected Studies

Thirty-nine studies, including 31 research articles, two conference abstracts and six research reports, were selected for inclusion as research on the perceived legitimacy of anti-doping organisations and testing. Thirty of these studies utilised quantitative methodology (Al Ghobain, 2019; Donovan et al., 2015; Bourdon et al., 2014; Canadian Centre for Ethics in Sport (CCES), 2013; de Hon, Eijs & Havenga, 2011; Duiven, de Hon & Netherlands ADA, 2015; Dunn et al., 2010; Efverstrom et al., 2016a; Elbe & Overbye, 2014; Gebert, Lamprecht & Stamm, 2017; Global Athlete, 2020; Gucciardi, Jalleh, & Donovan, 2011; Hanstad & Loland, 2009; Hanstad, Skille & Thurnston, 2009; Jalleh, Donovan, & Jobling, 2013; Judge et al., 2010; Moston, Engelberg & Skinner, 2015a; Nolte et al., 2014; Orr et al., 2010; Overbye, 2016; Overbye, 2017; Overbye et al., 2014; Overbye & Wagner, 2013; Overbye & Wagner, 2014; Sas-Nowosielski & Świątkowska, 2007; Scharf, Zurawski & Ruthenberg, 2018; Striegel, Vollkommer & Dickhuth, 2002; USADA, 2017; Valkenburg, de Hon & van Hilvoorde, 2014; Westmattelmann et al., 2018) and nine used a qualitative approach to data collection and analysis (Bloodworth & McNamee, 2010; Efverstrom et al., 2016b; Engelberg, Moston & Skinner, 2015; Erickson, Backhouse & Carless, 2017; Henning & Dimeo, 2018; Kegelaers et al., 2018; Kirby, Moran & Guerin, 2011; Massucci, Butryn, & Johnson, 2019; Qvarfordt et al., 2019). The legitimacy factor studied by method is summarised in Table 1.

Table 1. Methods used in studies

Methods used in studies	Total	Focus	Number of studies
Cross-sectional surveys	30	Proper	14
		Just	21
		Appropriate	28
Qualitative interviews	9	Proper	4
		Just	5
		Appropriate	7

The included studies were conducted internationally in Australia, Belgium, Brazil, Canada, Denmark, France, Germany, India, Netherlands, Norway, Poland, South Africa, Switzerland, the USA and the UK. The frequency of study location and number of participants per nationality is presented in Table 2.

Table 2. Location of studies and number of participants by country

Country	Number of studies	Number of participants
Australia	7	4886
Denmark	6	3625
International	5	802
Germany	3	770
Netherlands	3	1301
USA	2	1126
Norway	2	472
Switzerland	1	588
Poland	1	830
Saudi Arabia	1	408
Canada	1	90
United Kingdom	1	40
USA & Canada	1	12
France, Belgium & Switzerland	1	69
South Africa	1	346
UK & USA	1	28
Ireland, Scandinavia & USA	1	5
Belgium	1	36

The reviewed studies included journal articles, conference abstracts, NADO and WADA research reports and independent research reports. Most of the included studies

(79%) were disseminated as peer-reviewed research articles. The exact frequency of each study type is presented in Table 3.

Table 3. Type of research studies included

Type of research	Number of studies
Journal article	31
Conference abstract	2
NADO research	4
WADA report	1
Independent research report	1

In the studies that reported gender, fifty-nine percent of participants were male, with 8009 out of the 13487 reported participants. The participants were all identified as being of ‘elite-status’, however the definition of this elite status varied from high school level competitors to Olympic and International level athletes. The key characteristics and outcomes of the included empirical studies are summarised in the Appendix.

Anti-doping legitimacy components

Almost all included studies (n = 35) were related to fairness in the outcomes of anti-doping and thus considered as ‘*appropriate*’ in terms of legitimacy component. Two-thirds of the studies (n = 26) assessed perceptions of the anti-doping processes (‘*just*’). Surprisingly, less than half of the included studies (n = 18) included the underpinning values and normative component (‘*proper*’) of legitimacy perception. Of the included studies, the majority touched upon more than one legitimacy component. Only eleven studies included all three components of anti-doping legitimacy. The highest proportion of the 39 studies (n = 14) included data on anti-doping being *just* and *appropriate*. The numbers of studies in single- and joint categories are shown in Figure 3.

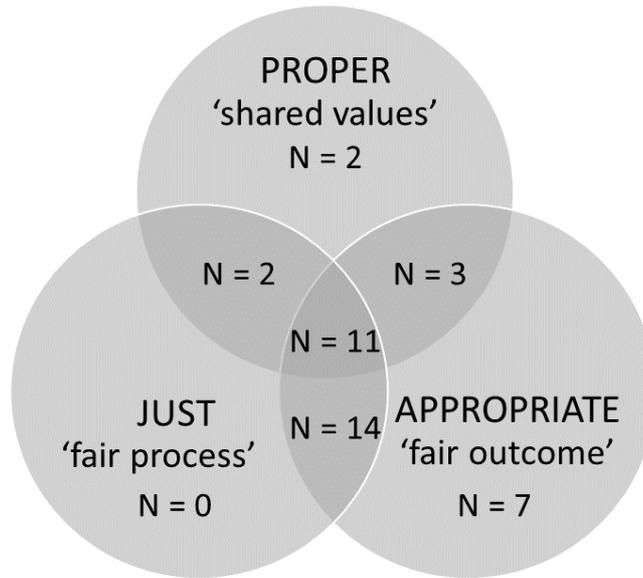


Figure 3: Overview of the included studies with single vs. multiple anti-doping legitimacy components

Inter-rater reliability

All four authors rated each of the included 39 papers independently and results were collated once all assessments were made. Based on the initial assessment, individual Fleiss' kappa was run for each of the three categories. Fleiss' kappa for *proper* showed that there was fair agreement between the authors' judgements, $K = .261$ (95% CI, .256 to .265, $p < .0005$). For *just*, Fleiss' kappa showed that there was fair agreement between the authors' judgements, $K = .296$ (95% CI, .292 to .300, $p < .0005$). Finally, for *appropriate*, Fleiss' kappa showed that there was fair agreement between the authors' judgements, $K = .294$ (95% CI, .290 to .299, $p < .0005$).

After discussion and revision, Fleiss' kappa for *proper* showed that there was moderate agreement between the authors' judgements, $K = .473$ (95% CI, .467 to .479, $p < .0005$). For *just*, Fleiss' kappa showed that there was moderate agreement between the

authors' judgements, $K = .400$ (95% CI, .396 to .404, $p < .0005$). Finally, for *appropriate*, Fleiss' kappa showed that there was fair agreement between the authors' judgements, $K = .354$ (95% CI, .350 to .358, $p < .0005$).

Main Outcomes

Proper

Justified procedures. Seventeen of the included studies in this review examined whether athletes perceived anti-doping testing and procedures as justified and shared the values of the anti-doping system (Bloodworth & McNamee, 2010; Bourdon et al., 2014; de Hon et al., 2011; Duiven et al., 2015, Efverstrom et al., 2016a; Engelberg et al., 2015; Erickson et al., 2017; Hanstad & Loland, 2009; Hanstad, et al. 2009; Henning & Dimeo, 2018; Nolte et al., 2014; Orr et al., 2010; Overbye & Wagner, 2014; Sas-Nowosielski & Swiatkowska, 2007; Scharf et al., 2018; Striegel et al., 2002; USADA, 2017; Valkenburg et al., 2014). These studies were from the USA (2), the UK, Poland, Denmark, Norway, Australia, the Netherlands (2), South Africa, Germany (2) and an International sample (2).

Student-athletes from the UK and USA reported that PED use is fundamentally wrong, and it's 'not what sport is about' (p. 49, Erickson et al., 2017) and South African high school athletes agreed that PED use was morally wrong (84%; Nolte et al., 2014). Young British athletes felt social and moral expectations to be a significant deterrent (Bloodworth & McNamee, 2010). Ninety-eight percent of German athletes accepted the system as a necessity (Striegel et al., 2002), with 80% of international athletes agreeing that anti-doping activities are essential and accepted the legitimacy of the rules themselves (Efverstrom et al., 2016a), and 93% of American athletes supporting the purpose of their National Anti-Doping Agency (USADA, 2017). An international sample of athletes reported that their beliefs relating to anti-doping were reflected in the existence and purpose of anti-doping bodies (Henning &

Dimeo, 2018) and 68% of Australian athletes considered an effective drug testing program as important for their sport (Orr et al., 2010). Polish athletes reported a positive attitude towards doping control system (Sas-Nowosielski & Swiatkowska, 2007). Eighty-one percent of Dutch athletes never had doubts about the integrity of doping controls, which was a 13% increase over a five-year period (Duiven et al., 2015). However, Duiven and colleagues (2015) reported comments from elite-status athletes who questioned the integrity of the doping system external to the Netherlands. Additionally, a sample of Australian bodybuilders who had committed anti-doping violations, favoured a system whereby each sport is self-governing, and an over-arching organisation does not exist (Engelberg et al., 2015). Conversely, athletes in other sports were still in favour of a central anti-doping system (Engelberg et al., 2015). More than half of Dutch athletes supported the principle of out of competition testing (de Hon et al., 2011).

With regards to the Whereabouts system, a third of Dutch athletes believed the system to have a negative influence on the pleasure derived from being an athlete (Valkenburg et al., 2014) and less than 20% find it necessary to file Whereabouts information in their sport (de Hon et al., 2011). Norwegian athletes reported considerable scepticism and raised objections when asked about the justification of the Whereabouts system (Hanstad & Loland, 2009). However, the majority of German female (88%) and male (86%) athletes believed that out of competition testing, enforced via the Whereabouts system protected sport from doping (Scharf et al., 2018). Additionally, a high percentage of Danish, French, Belgian and Swiss athletes considered the Whereabouts system as necessary (Bourdon et al., 2014; Overbye & Wagner, 2014). Forty-three percent of Norwegian athletes agreed that the whereabouts information system made a contribution to a “cleaner” sport (Hanstad et al., 2009).

Just

Treating athletes equally and fairly. Athletes' perceptions of fairness within the anti-doping system was the focus of nine studies included in this review (Al Ghobain, 2019; Donovan et al., 2015; Elbe & Overbye, 2014; Engelberg et al., 2015; Hanstad et al., 2009; Judge et al., 2010; Qvarfordt et al., 2019; Scharf et al., 2018; Valkenburg et al., 2014; Westmattmann et al., 2018). These studies were conducted with participants from Australia (2), Norway, Germany (2), the Netherlands, Saudi Arabia, an international sample and the USA.

With regard to their own NADO, 70% of Saudi athletes believed that the Saudi Anti-doping Committee treated all athletes equally (Al Ghobain, 2019) with the majority of Australian athletes agreeing in relation to their NADO (Donovan et al., 2015). Sixty-eight percent of US athletes reported a belief that the current protocols for testing were fair (Judge et al., 2010). Ninety-eight percent of Danish athletes believed that it is fine to be tested for doping (Elbe & Overbye, 2014). However, a group of Australian bodybuilders who had previously committed anti-doping violations believed the anti-doping system is hypocritical and unfair (Engelberg et al., 2015). Norwegian athletes raised concerns on the fairness of the Whereabouts system (Hanstad et al., 2009). Additionally, German athletes agreed that they felt that leaving Whereabouts information was an intrusion into their privacy (Scharf et al., 2018). An international sample of athletes highlighted the limited opportunities that some athletes face, in relation to education and information, and a scepticism over the true representative nature of athlete committees (Qvarfordt et al., 2019).

With specific regard to the Whereabout system, Valkenburg et al. (2014) found that 30% of Dutch athletes believed that whereabouts requirements are a violation of privacy, 26% agreed that organisations interfere too much in their private life and 43% agreed that the time requirements limit their freedom. Westmattmann and colleagues (2018) found that

doubts regarding privacy issues (i.e., where data are stored, how they are used and who has access) may lead to a mistrust in the ADAMS system as a whole.

Therapeutic Use Exemptions. One study included in the current review specifically focused on athletes' perceptions of the TUE system (Overbye & Wagner, 2013). This study included 645 Danish athletes who had completed a web-based survey. Fifty-one percent of these athletes believed that some TUEs were obtained without genuine medical need. Athletes themselves who had previously obtained a TUE were more likely to distrust the system (66%) compared to those who never had a need for a TUE (46%).

Harmonization. The harmonization of anti-doping agencies, testing and efforts on an international scale was the focus of thirteen studies included in the current review (Bloodworth & McNamee, 2010; Bourdon et al., 2014; de Hon et al., 2011; Duiven et al., 2015; Efverstrom et al., 2016a; Efverstrom et al., 2016b; Gebert et al., 2017; Global Athlete, 2020; Hanstad & Loland, 2009; Henning & Dimeo, 2018; Overbye, 2016; Overbye & Wagner, 2014; USADA, 2017). These studies explored the perceptions of athletes from the UK, the USA, the Netherlands, Norway, France, Belgium, Switzerland (2), Denmark (2) and international samples (4).

Danish athletes reported that the testing in other countries was not extensive enough (73% agreed) and that these tests are conducted in an unprofessional manner that makes cheating the system possible (46% agreed; Overbye, 2016). Despite being in favour of anti-doping, a small international sample of athletes expressed scepticism about the ability of the system to harmonize international efforts (Henning & Dimeo, 2018). One potential explanation for these beliefs is that athletes also perceived that doping control is downgraded in other countries in order to achieve success. Similarly, American athletes believed that anti-doping programs other to theirs were less effective or not effective (28% and 6% respectively, 49% did not know; USADA, 2017) and Swiss athletes believed it to be untrue

that those using doping in other countries had a high risk of being caught compared to their own country (47% versus 13% respectively; Gebert et al., 2017). Dutch athletes expressed doubts about the integrity of doping controls outside the Netherlands (Duiven et al., 2015) and British athletes made extensive references to a belief that testing procedures were less stringent in some other countries than in the UK (Bloodworth & McNamee, 2010). Athletes from an international sample reported higher levels of trust in their NADO (32% completely and 55% mostly) than in the international anti-doping system (15% completely and 45% mostly) with 23% having experienced conflicts caused by different NADO policies between countries (Global Athlete, 2020). Additionally, Dutch Olympic athletes and professional footballers favoured better harmonisation within the anti-doping system (de Hon et al., 2011).

With specific regard to the Whereabouts system, athletes trust in the system was low regarding its operation in other countries (Overbye & Wagner, 2014) and 44% believed that the Whereabouts system did not work in all countries (Efverstrom et al., 2016a). Fifty-eight percent of French speaking athletes perceived the application of the Whereabouts system to be unequal between countries and sports (Bourdon et al., 2014) and Norwegian athletes in the national registered testing pool reported that the system was unfair as it was not implemented for all athletes (Hanstad & Loland, 2009). British athletes reported scepticism of the utilisation of the Whereabouts system abroad in response to interactions with fellow athletes from other countries who had declared that they were not required to submit Whereabouts information (Bloodworth & McNamee, 2010). In addition, Efverstrom and colleagues (2016b) reported perceptions of athletes who believed that their National Anti-Doping Agency did not provide equal opportunities to be compliant and access knowledge and education. Particularly, these athletes highlighted that accessing such systems as Whereabouts and the technology required for this were difficult within their country.

Sanctions. The fairness of the sanction and hearing process was the focus of seven studies included in this review (Al Ghobain, 2019; Dunn et al., 2010; Engelberg et al., 2015; Hanstad & Loland, 2009; Jalleh et al., 2013; Moston et al., 2015a; USADA, 2017). These studies were conducted in Saudi Arabia, Norway, Australia (4) and the USA. Jalleh and colleagues (2013) examined athlete satisfaction with the possibility of receiving a fair hearing from their National Anti-Doping Agency following a positive test (1.88), before any sanctions (1.88) and in the Court of Arbitration for Sport (1.82) on a four-point Likert-type scale (1 Very satisfied – 4 Very Dissatisfied). In addition, 55% of USA athletes agreed or strongly agreed that the USADA anti-doping management and adjudication processes were fair (USADA, 2017). Sixty-seven percent of Saudi elite male athletes were satisfied that there would be a fair-hearing session for athletes testing positive for a banned substance (Al Ghobain, 2019). Additionally, athletes believed that sanctions for being caught were of the appropriate severity (Dunn et al., 2010). However, Australian bodybuilders, who had previously committed anti-doping violations, believed the sanctioning process to be hypocritical and unfair (Engelberg et al., 2015). Norwegian athletes questioned the fairness of sanctions for violations associated with the Whereabouts system and suggested that there should be separation between ‘oversights’ in updating information and actual doping cases (Hanstad & Loland, 2009).

Selection process. Two studies, conducted in Denmark and an international sample focused on the selection process for anti-doping testing (Efverstrom et al., 2016; Overbye, 2016). Eighty-two percent of surveyed 261 athletes agreed that selection for anti-doping testing in competition was fair, with 74% also agreeing to its fairness out-of-competition (Efverstrom et al., 2016). Overbye (2016) reported that 33% of 645 Danish athletes disagreed that the number of anti-doping tests were appropriate, citing that the same athletes were tested repetitively, the wrong athletes were tested, and that the tests were too frequent.

Appropriate

Suitability. The suitability of testing protocols and their infringement upon athlete lifestyle was examined by seven of the included studies (Bourdon et al., 2014; Elbe & Overbye, 2014; Hanstad & Loland, 2009; Orr et al., 2010; Qvarfordt et al., 2019; Scharf et al., 2018; Valkenburg et al., 2014). These studies were conducted in France, Belgium, Switzerland, Denmark, Germany, the Netherlands and an international sample.

Sixty-one percent of Australian athletes believed that one to three anti-doping tests a year would be an appropriate amount (Orr et al., 2010). Scharf et al. (2018) found that German male (70%) and female (72%) agreed that they felt constantly watched by the need to enter their whereabouts, and that approximately half of athletes felt the whereabouts system was an intrusion into their privacy (females 51%; males 52%). The majority of athletes felt that the time commitments of anti-doping limit their freedom (Valkenburg et al., 2014) and that the whereabouts system infringes too much on their private life (Bourdon et al., 2014; Hanstad & Loland, 2009). Elbe and Overbye (2014) found that Danish athletes felt it is a violation of personal integrity for someone to watch urination for anti-doping requirements, and thus doping controls are an invasion of privacy. An international sample of athletes perceived that limited information regarding doping and a lack of leeway relating to anti-doping exist, thus putting the anti-doping system at risk (Qvarfordt et al., 2019).

Effectiveness. Fourteen of the included studies assessed perceptions of the effectiveness of anti-doping organisations and testing procedures to prevent the use of doping within their sport (Bourdon et al., 2014; CCES, 2013; Donovan et al., 2015; Dunn et al., 2010; Global Athlete, 2020; Gucciardi et al., 2011; Hanstad & Loland, 2009; Henning & Dimeo, 2018; Kegelaers et al., 2018; Massucci et al., 2019; Moston et al., 2015a; Overbye, 2017; Overbye & Wagner, 2013; Overbye & Wagner, 2014; Striegel et al., 2002). These studies reported the perceptions of athletes from Australia (4), Canada (2), Germany, the

USA, France, Belgium (2), Switzerland, Norway, Denmark (2) and an international sample (2).

Sixty-three percent of Australian athletes agreed or strongly agreed that the current anti-doping regime was effective (Moston et al., 2015a). Seventy-eight percent of athletes in an international sample found their NADO to be efficient at combatting doping in their country (24% extremely efficient and 54% somewhat efficient; Global Athlete, 2020). Conversely, Overbye and Wagner (2014) reported that participants trust in the anti-doping system's ability to catch doped athletes was low, and that this distrust increased with experience of the whereabouts system. Additionally, 51% of athletes believed that athletes within their sport received TUEs without a medical need (Overbye & Wagner, 2013). A larger number of international athletes agreed that their NADO worked transparently (58%) than those who believed WADA worked transparently (30%; Global Athlete, 2020). In the same study, 79% of athletes believed there should be governance reform to include an equal representation of sport federations, governments, NADOs and athletes on the WADA Foundation Board. French speaking athletes reported only partial trust in the anti-doping systems capability to detect doping (Bourdon et al., 2014). In addition, North American triathletes were dubious of testing effectiveness based on a lack of testing and a perception that doped athletes were testing clean (Massucci et al., 2019) and Australian athletes were unsure as to the accuracy of anti-doping testing (Donovan et al., 2015).

Belgian athletes perceived the chance of being caught as low due to few controls and knowledge of when the controls would occur (Kegelaers et al., 2018) however 75% of Danish athletes believed that the likelihood of testing positive would act as a deterrent (Overbye, 2017). Similarly, 76% of Australian athletes believed that testing is an effective deterrent to doping (Dunn et al., 2010). The majority of Canadian athletes believed their NADO to be doing a good job (85%) and maintaining the integrity of clean sport (78%) but

that the deliberate dopers were always one step ahead of the doping controls (CCES, 2013). Only 43% of Norwegian athletes agreed that the whereabouts system has made a contribution to reducing doping (Hanstad & Loland, 2009). Henning and Dimeo (2018) reported that athletes question the ability of the anti-doping system to effectively deter athletes from doping. German athletes favoured improved methods of detection over more severe punishments in order to improve the effectiveness of the anti-doping system (Striegel et al., 2002).

Sanctions. Seven studies discussed the effectiveness of sanctions as doping prevention (Dunn et al., 2010; Engelberg et al., 2015; Kegelaers et al., 2018; Kirby et al., 2011; Moston et al., 2015a; Overbye et al., 2014; Westmattelmann et al., 2018). With a focus on the effectiveness of sanctions as deterrents to doping, Overbye et al. (2014) found that despite 78% of athletes regarding a ban as a deterrent, potential social, self-imposed and financial consequences are greater deterrents to doping. Additionally, Belgian athletes identified that possible sanctions including suspension and the end of one's athletic career as possible 'anti-pull factors, however a lack of heavy sanctions was also cited as a potential 'push' factor by two of the participants (Kegelaers et al., 2018). Three-fifths of Australian athletes agreed that the current punishments for being detected with a banned substance was appropriate (Dunn et al., 2010). Additionally, the majority of Australian athletes, excluding bodybuilders, who had previously committed anti-doping violations believed that there should be stricter and more stringent sanctions for all drug violations (Engelberg et al., 2015). The bodybuilders in this sample believed that there should be less punitive sanctions than those currently in place (Engelberg et al., 2015). In another sample of Australian athletes, low percentages were particularly sceptical of the certainty of legal and material sanctions resulting from anti-doping violations (Moston et al., 2015a). However, German athletes considered improvements in diagnostics to be the most effective anti-doping deterrents with

fines and leniency programs to be the least effective (Westmattelmann et al., 2018). When discussing their experiences of doping, four of five athletes who had doped, reported that being caught was only a minor concern (Kirby et al., 2011)

Robustness. Seven studies in the current review investigated the security of testing (Al Ghobain, 2019; Donovan et al., 2015; Duiven et al, 2015; Gebert et al., 2017; Jalleh et al., 2013; Massucci et al., 2019; Overbye, 2016; USADA, 2017). These studies were conducted in the USA (2), Canada, Saudi Arabia, Australia (2), Switzerland and Denmark.

Seventy-seven percent of athletes either agree or strongly-agree that the USADA anti-doping testing is secure (USADA, 2017), with Australian athletes reporting that they believed that the security of ASADA testing was very secure (1.48 on a 1 'very secure' to 4 'not secure', Jalleh et al., 2013; 95% very or quite secure, Donovan et al., 2015), and 85% of Swiss athletes believe that the way in which Anti-doping Switzerland carry out doping control and testing to be secure (Gebert et al., 2017). Almost three quarters of elite Saudi male athletes believed that drug-testing procedures were secure (72%; Al Ghobain, 2019). Only 15% of Danish elite athletes agreed that testing was so unprofessional that it would be possible to cheat (Overbye, 2016). Eighty-one percent of elite-status athletes never had any doubts about the integrity of a doping control (Duiven et al., 2015). However, Massucci and colleagues (2019) suggest that athletes may suppress their concerns about integrity and robustness of the testing process.

Education. Six studies focussed on athletes' views on anti-doping education (de Hon et al., 2011; Efverstrom et al., 2016b; Nolte et al., 2014; Orr et al., 2010; Qvarfordt et al., 2019; Westmattelmann et al., 2018). Fifty-nine percent of South African high school athletes disagreed that there was enough being done in South Africa to educate athletes regarding the implications of using prohibited substances or methods (Nolte et al., 2014). Comparatively, low percentages of Australian athletes considered they were kept informed of the drug testing

procedures and performance enhancing substances (Orr et al., 2010). Qvarfordt and colleagues (2019) found that some athletes believe that there is a lack of information and education regarding anti-doping regulations. Dutch Olympic athletes and professional footballers favoured the provision of more educational opportunities relating to anti-doping (de Hon et al., 2011). For German cyclists and track and field athletes, education programs were perceived as moderately effective in keeping athletes from doping, and less effective than control or punishment measures (Westmattmann et al., 2018). An international sample of athletes reported perceptions that highlighted the differing access to knowledge and education across contexts, cultures, languages and technology access (Efverstrom et al., 2016b).

Discussion

The current mapping review aimed to map out and categorize the extant literature on athletes' perceptions of legitimacy of anti-doping policies or constituents, and provide foundations for future reviews, empirical studies and policy recommendations for improving and/or restoring the perceived legitimacy of anti-doping policies and organisations. Following the literature search and an initial review of the included papers, Tyler's (2006) three components of perceived legitimacy (*proper*, *just* and *appropriate*) were applied retrospectively to provide a categorising framework. The findings of the studies included in this review indicated that Tyler's (2006) model of legitimacy can be applied in the context of anti-doping policies. This suggests that perceived legitimacy of authority can be used to better comprehend athletes' perceptions of legitimacy of anti-doping policies. However, it is important to note that other legitimacy frameworks and theories may be suitable to apply to the perceptions of the anti-doping system. Furthermore, anti-doping authorities should take

this into account and aim to develop fair procedures and favourable outcomes in order to increase athletes' perceptions of legitimacy (Van der Toorn et al., 2011).

The studies included in this review explore the perceptions of differing aspects of the anti-doping system, from the Whereabouts system (Scharf et al., 2018) and the obtaining of TUEs (Overbye & Wagner, 2013) to athletes' perceived legitimacy of the anti-doping system (Efverstrom et al., 2016a). Despite athletes' perceived legitimacy of the anti-doping system, its organisations and their rules not always being the focus of the studies included in this review, it is possible to link the beliefs identified and perceptions of whole-system legitimacy. It is the formation of these judgements regarding individual aspects of the anti-doping system, which may lead an athlete to perceive an ADO or its rules as *doing what is right* and that they are *doing it in the right way*. These micro-level perceptions of legitimacy are assessed and reassessed until they are used and shape actions and reactions producing macro-level effects (Tost, 2011; Tyler, 2006). Therefore, the included studies which investigated individual aspects of the anti-doping system are utilised to determine athletes' perceptions of legitimacy of those specific areas and taken together to analyse perceived legitimacy of the system as a whole.

Interestingly, the findings of the review suggest consistent findings with respect to athletes' perceptions of anti-doping policies as *proper* (c.f., Bourdon et al., 2014; Henning & Dimeo, 2018). The vast majority of the athletes suggested that the anti-doping policies are justified (Henning & Dimeo, 2018; USADA, 2017). Importantly, the participants in the reviewed studies viewed the anti-doping policies as a necessary and essential aspect of the effort to maintain sport clean (Efverstrom et al., 2016a; Elbe & Overbye, 2014). However, certain studies (Engelberg et al., 2015; Global Athlete, 2020) identified a perception that NADOs work more transparently than the centralised WADA system (Global Athlete, 2020) and that self-governing sports bodies would alleviate any poor perceptions of the anti-doping

system caused by an over-arching organisation (Engelberg et al., 2015). When considered together, this evidence provides strong support for the legitimacy of anti-doping authorities and their efforts (policies and testing) towards achieving clean sport. It suggests that the majority of athletes perceive the existence of anti-doping organisations (i.e., WADA, NADOs) as '*doing what is right*' however there is an extent to which international anti-doping organisations are viewed as legitimate. Perhaps particularly insightful are the findings by Engelberg and colleagues (2015) as the perceptions of those who have committed anti-doping rule violations, may be particularly valuable when considering how to increase perceptions of legitimacy, as it is these individuals who are likely to have a greater understanding of the positive test and sanctioning process (Engelberg et al., 2015).

Conversely to Engelberg et al.'s (2015), bodybuilders who advocated self-governing sports, Gleaves and Christiansen (2019) found that athletes express general satisfaction with WADA, and its ambitions to homogenise anti-doping effort. Considering that perceptions of authority's legitimacy increases subordinates' sense of duty and obligation to obey (Skitka et al., 2009), anti-doping authorities should further promote this global view of doping as immoral action and capitalise athlete views in increasing the legitimacy of anti-doping policies. However, organisations should consider their approach to each sport, environment and setting in an individualistic manner as evidence suggests differing views may exist, and generalising that *all* athletes perceive legitimacy may discount these athletes.

Consistent findings existed across the majority of studies which assessed aspects of the anti-doping system considered to influence perceptions of the *just* nature of this system. The majority of athletes reported trust in their national anti-doping authorities but were sceptical about whether anti-doping authorities and procedures were harmonised internationally (c.f. Duiven et al., 2015). In one study, Danish athletes also reported low levels of trust with the TUE system (Overbye & Wagner, 2013). Whilst some athletes'

perceptions may be influenced through interactions with other athletes (c.f. Bloodworth & McNamee, 2010), these findings regarding harmonisation may be attributed to a lack of knowledge of anti-doping activities in other countries. Additionally, the presence of doping incidences from other countries in the news may have an impact. Large doping cases (i.e., the RUSADA scandal) receive vast international media attention potentially resulting in scepticism of the integrity of anti-doping authorities. In turn, athletes may generalise and form false beliefs that anti-doping policies are not harmonised internationally (see Skitka et al., 2009). Therefore, global anti-doping authorities (e.g., WADA, IOC, iNADO) should better promote the activities of local and regional anti-doping authorities and invest in the support of the global anti-doping movement.

Results of the reviewed studies demonstrate that athletes have diverging views on the *appropriate* nature of the anti-doping system. The majority of athletes reported feeling that procedures (Whereabouts, number of tests, etc.) are an intrusion on their lives (c.f. Scharf et al., 2018). A higher number of studies reported that athletes reported mistrust, were dubious and voiced concerns over the effectiveness of the anti-doping system to catch violations than those who believed it to be effective (c.f., Massucci et al., 2019; Moston et al., 2015a). These findings imply that athletes trust the anti-doping policies and organizations, but they do not believe it is *'done the right way'* and, therefore, its effectiveness is limited. This is also corroborated by previous evidence suggesting that athletes hold wrong beliefs about the prevalence of doping (e.g., Barkoukis et al., 2013; Lazuras et al., 2010; Moston, Engelberg, & Skinner, 2015b; Uvacsek et al., 2011). This inconsistency between the perceived legitimacy of anti-doping rules and organizations may result in a lack of compliance with the anti-doping system. In particular, Donovan et al. (2002) suggested that the more perceived inequity between athlete and their competitors, the greater the likelihood that they will dope. Therefore, athletes will stop supporting a system that is robust but not effective. To address

this issue anti-doping authorities should work on increasing awareness about doping prevalence and promote the results of the anti-doping authorities to the community of athletes.

It is important to anti-doping bodies (i.e., WADA, NGBs and NADOs) to strengthen athletes' perceptions of legitimacy towards the anti-doping policies, as an effective anti-doping system is dependent upon being perceived as legitimate (Donovan et al., 2002). The findings suggest that there is still much work to be done for anti-doping bodies to be perceived as legitimate. The two predominant factors that appear to effect perceptions of legitimacy are international harmonization and the overall effectiveness of the system. Allen and colleagues (2015) suggested that the development of a harmonized anti-doping system has progressed significantly under the auspices of WADA, yet this review indicates that this opinion has not developed amongst the global base of athletes. This incongruence between actual organisational standards and the implemented version experienced when competing is critical for decision makers to understand. Whilst athletes may not question the purpose of anti-doping rules (*doing the right thing*), perceived legitimacy may be compromised by the way rules are applied in practice (*doing it in the right way*; Qvarfordt, 2019). Particularly, better transparency regarding procedures and outcomes may strengthen legitimacy perceptions. Without paying attention to these potential differences, anti-doping organisations may cause a larger de-legitimation among athletes (Efverstrom et al., 2016a; Overbye, 2016; Qvarfordt, 2019; USADA, 2017).

Twenty-five of the studies included in this review utilised quantitative methodologies, however, none developed or used a standardised anti-doping legitimacy specific measure. Legitimacy when directly measured was not the main focus of the majority of these studies, with a small number of items relating to legitimacy included as sections within larger surveys. However, in 2015, specific legitimacy focussed questions were offered in the

WADA survey pack for Anti-Doping Organisations (Donovan et al., 2015), with one included study utilising these items (Al Ghobain, 2019). Given the date of publication of this survey resource and the studies included in this review, its apparent lack of use is understandable. However, a lack of utilising one standardised measure exists, meaning that comparison and synthesise of research findings is problematic. Developing such a measure - which may be validated and utilised internationally to provide more applicable and effective findings and feedback on the anti-doping system – is warranted.

Additionally, six of the included studies utilised qualitative measures to elicit athlete perceptions of anti-doping efforts and the legitimacy of the organisations who govern and control the anti-doping system. Qualitative results were found to be consistent with the quantitative findings.

Tyler (1990) suggested that an authority's legitimacy is influenced by three dimensions of justice; a) distributive justice (the fairness of the outcomes of a system), b) procedural justice (the fairness of the process) and c) interactional justice (the fairness of the interpersonal treatment). However, a further dimension of justice, restorative justice, and the aspects of the anti-doping system which may contribute, is missing from the literature on anti-doping legitimacy. This restorative justice is the process involving primary stakeholders in determining how best to repair the harm done by an offense. This process has been highlighted by athletes as a significant one which is missing from the current anti-doping procedures (Gleaves & Christiansen, 2019). Thus, further research including restorative justice as part of the legitimacy of the anti-doping system is called for.

An additional direction for future research should be to investigate the role of anti-doping education in improving legitimacy perceptions. In particular, what athletes believe of current anti-doping education efforts and how they believe this could be improved. Gatterer and colleagues (2020) suggested that “concrete guidelines defining multifaceted, values-

based education, and best practice examples” (p. 228) be developed to assess the potential benefits and effectiveness of such an approach to anti-doping education. This is particularly important as Westmattmann and colleagues (2018) found that despite education programs being perceived to be moderately effective at keeping athletes from doping, they are less effective than control or punishment measures. A shift from deterrence to education may increase the athletes’ perceptions of legitimacy and effectiveness, in addition to actual effectiveness of anti-doping organisations.

From the history of anti-doping, the continuity in problem identifications and changes in policies and procedures to address the problems is evident. Applying the ‘wicked problem’ concept (Rittel & Webber, 1974), or rather its contemporary version of problematicity and political distance (Turnbull & Hoppe, 2019), this ever-evolving improvement process will likely characterise anti-doping in the years to come (Kazlauskas, 2014; Viret, 2019), continuously influencing legitimacy perceptions along the way. A wicked problem, characterised as a plausible description by Rittel and Webber (1974) of problematic situations policy makers often confronted, has no definite endpoint. Problems are wicked because they are difficult or impossible to solve owing to incomplete information, contradictory and changing requirements which are often (1) difficult to recognize and (2) not even apparent until after a solution is put in place. Thus, the term ‘wicked’ in this context refers to doping being resistant to definite resolution and having tendencies for emerging new issues once an anti-doping measure is put in place. Turnbull and Hoppe (2019) operationalise ‘wicked problems’ as a continuum of higher and lower degree of ‘problematicity’ or ‘structuredness’ of problems and substitute the ‘wicked’ label with a more practically relevant ‘*political distance*’. The latter, they argue, is “a second, inherent dimension of policy problems, ...characterized as the distance between actors in terms of ideas/values, institutions and interests, pursued through practices” (Turnbull & Hoppe, 2019, p333). The distance between

stakeholders in a policy process (e.g., athletes, organisations with vested interest in sport, and organisations tasked with anti-doping) is born out of differences in values, economic and political interests, institutional authority and diverse types of implementation practices. The political distance in doping problem is tangible in doping and anti-doping, emphasised by the increasingly vocal interest groups and the emergence of alternative anti-doping systems. Political distance, and any change therein, has a direct impact on perceived legitimacy of implemented policies. Therefore, athletes' and stakeholders' perceptions – in theory – should be good indicators of how newly implemented measures and improvements to the existing policies and procedures are perceived as *proper, just and appropriate*.

Limitations

We acknowledge that this mapping review is most likely not as comprehensive as it could be for multiple reasons. Firstly, the literature search was limited to studies in the public domain and published or written in English. Whilst the field could certainly benefit from a broader international scope and capturing cross-cultural nuances, we did not feel competent in making a qualitative assessment for legitimacy categories in other languages. Secondly, as we described in the method section, we faced considerable difficulties in both identifying and categorising empirical research. The former was due to the fact that almost half, 18 of the 39 eligible studies were not tagged for legitimacy therefore database search in titles, abstracts and keywords failed to identify them. Among the included studies, two were conference abstracts and six were research reports (four NADO reports, one WADA research project report and one independent report by Global Athletes). These presented a great deal of variety in terms of reported details and methodological rigour, which must be acknowledged as a limitation to the findings of this review. Because the included studies defined 'elite athlete' in various ways, ranging from high school competitors to Olympic level athletes,

generalisability of the findings for the elite athlete population is compromised to some degree. In due course, when research on anti-doping legitimacy perceptions has gained sufficient mass, separating studies by competitive level will afford a more nuanced analysis.

With a few exceptions, those studies that identified with anti-doping legitimacy did not differentiate between the different legitimacy components. The latter required developing a conceptual framework and definition and applying these simultaneously. Thirdly, anti-doping rules and processes present a complex system, with no objective and measurable indicators for effectiveness. Even studies that included all three anti-doping legitimacy components did not capture the full spectrum of reasons for, implementation and perceived effectiveness of the anti-doping rules and regulations, nor made that assessment in situational context.

Conclusion

Legitimacy is an important concept in anti-doping. Athletes' and stakeholders' perceptions of legitimacy indicate the degree by which the implemented measures, policies and procedures are perceived as proper, just and appropriate. The findings of this review identify how athletes' perceptions of the anti-doping rules and organisations can contribute to their perceived legitimacy of the anti-doping system. Despite the importance of legitimacy and the twenty years since WADA was established, there is still a sparse amount of bespoke research in this area. Further research should be conducted to develop a better understanding of the relationships between perceived legitimacy and compliance (i.e., intentions to dope or be a 'clean' athlete), normative obedience (as support for anti-doping via demanding rule compliance from others) and advocacy (i.e., championing clean sport). To facilitate this process, valid and reliable survey tools which examine legitimacy are required.

From the athletes' views presented here, an obvious strategy for improved perception of systemic anti-doping legitimacy is making it more effective and equal, ensuring that not only the rules and regulations are harmonised at the global level but that their implementation is harmonised as well. Furthermore, there is a need for better communication from organisations responsible for anti-doping to highlight progress with detection and introducing greater transparency in testing and selection for testing. Mechanisms to support athletes who were victims of doping along with direct support for 'clean' athletes to manage doping control requirements, would further enhance positive perception of anti-doping legitimacy. This mapping review also highlighted the ambiguity that surrounds legitimacy perception as a psychological concept, particularly for distinguishing between being 'just' and being 'appropriate'. Moving forward, results from this review will help formulating survey questions for empirical studies as well as data analysis from qualitative interviews within a sound theoretical framework for anti-doping legitimacy perceptions. This, in turn, will facilitate meta-analysis and meta-synthesis of anti-doping legitimacy perception of athletes' and their entourage in the future.

Finally, the outcome of this systematic mapping review left doubt that the legitimacy perception concept is benefitting from receiving growing attention in anti-doping research. We consider this review as a start rather than a conclusion. Future studies will benefit from a clearer understanding of each anti-doping legitimacy components as well as contextual and cross-cultural limitations in surveys; and will assist devising more targeted and specific research tools for studying antidoping legitimacy perceptions.

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APPENDIX

Study details included in the mapping review, presented in chronological order

Study	Participants	Design	Country	Methods	Measure of legitimacy perception	Source of legitimacy ^a	Inter-rater agreement	Key findings	Legitimacy components
Striegel, Vollkommer & Dickhuth, 2002 Journal article	101 athletes subject to national and international anti-doping tests	Quantitative	Germany	Paper and pencil survey	Measures regarding athletes' views of anti-doping and sanctions	PRP APR	100% 100%	Athletes believed anti-doping measures were needed and favoured improved methods of detection	'justified procedures' 'effectiveness of anti-doping procedures'
Sas-Nowosielski & Świątkowska, 2007 Journal article	830 national level athletes from team and individual sport (68.3% males)	Quantitative	Poland	Paper and pencil survey	45 items about knowledge on athletes' rights and responsibilities, doping control procedures, prohibited substances and methods and their side effects.	PRP	100%	Athletes displayed limited knowledge of the doping control procedures, although they held positive attitudes towards the	'justified procedures'

					20 items measuring attitudes towards the doping control system			doping control system	
Hanstad & Loland, 2009 Journal article	236 athletes in the Anti-Doping Norway RTP	Quantitative	Norway	Web-based survey	Items measuring opinions about the whereabouts system	PRP JST APR	75% 100% 100%	Athletes questioned the justification and fairness of the whereabouts system	‘justified procedures’ ‘harmonisation’ ‘fairness in sanctions’ ‘suitability of anti-doping procedures for addressing the problem’ ‘effectiveness of anti-doping procedures’
Hanstad, Skille & Thurnston, 2009 Journal article	236 top level athletes (64.3% males)	Quantitative	Norway	Web-based survey	Items measuring opinions about the anti-doping system	PRP JST	75% 100%	Athletes agreed that doping is a threat to sports. They raised concerns on the fairness of the whereabouts system	‘justified procedures’ ‘treating athletes equally and fairly’

Bloodworth & McNamee, 2010 Journal article	40 talented athletes from team and individual sports (55% males)	Qualitative	United Kingdom	Focus Groups	Open discussions relating to perceptions of doping and anti-doping	PRP JST	75% 75%	Athletes gave extensive reference to what they believed to be a greater doping problem in other countries than their own	‘justified procedures’ ‘harmonisation’
Dunn, Thomas, Swift, Burns & Mattick, 2010 Journal article	974 elite athletes (75.6% males)	Quantitative	Australia	Paper and pencil survey	Items measuring level of endorsement for current penalties	JST APR	100% 100%	The majority of athletes agreed that the current sanctions for being detected were appropriate	‘fairness in sanctions’ ‘effectiveness of anti-doping procedures’ ‘threat of sanctions as prevention’
Judge, Bellar, Craig & Gilreath, 2010 Journal article	240 track and field athletes (59% males)	Quantitative	United States of America	Web-based survey	Items measuring drug testing attitudes	JST APR	100% 75%	The majority of athletes did not believe that protocols were fair, and that drug testing was not catching all athletes who dope	‘treating athletes equally and fairly’

Orr, Grassmayr, Macniven, Grunseit & Bauman, 2010 Conference Abstract	262 athletes from individual and team sports (53% male)	Quantitative	Australia	Survey	Items measuring athletes' knowledge, attitudes, intentions and behavior of anti-doping policy, drug testing and anti-doping education	PRP APR	75% 100%	Majority considered drug testing as important and that they were not informed of the drug testing procedure	'justified procedures' 'suitability of anti-doping procedures for addressing the problem' 'education'
de Hon, Eijs & Havenga, 2011 Conference Abstract	432 elite athletes and professional footballers	Quantitative	Netherlands	Web-based survey	Items measuring athlete attitudes toward anti-doping testing	PRP JST APR	75% 75% 75%	Less than 20% consider whereabouts necessary in their sport although more than 50% support the principle of OOC testing	'justified procedures' 'harmonisation' 'education'
Gucciardi, Jalleh, & Donovan, 2011 Journal article	670 Olympic, international, national and state level (42% males)	Quantitative	Australia	Mail survey	3 items measuring how secure, serious and effective the anti-doping procedures are in Australia	APR	100%	No effect of perceptions of legitimacy on doping attitudes. Legitimacy was correlated	'effectiveness of anti-doping procedures'

								with morality, benefit appraisal and reference group opinion	
Kirby, Moran & Guerin, 2011 Journal article	5 male athletes who had doped for performance enhancement	Qualitative	Ireland, Scandinavia and USA	Semi-structured interviews	Questions relating to the deterrents and potential changes of the anti-doping system	APR	100%	Being caught was only a minor concern and there were many contradictory suggestions to improve anti-doping policies	‘threat of sanctions as prevention’
CCES, 2013 NADO research	90 registered testing pool athletes	Quantitative	Canada	Survey	3 items measuring perceptions of the effectiveness of anti-doping	APR	75%	Athletes reported that the CCES did a good job and protected the integrity of clean sport. However, they reported that the CCES was always one step behind dopers	‘effectiveness of anti-doping procedures’
Jalleh, Donovan, & Jobling, 2013	1237 Olympic, international, national and	Quantitative	Australia	Mail survey	5 items measuring testing security	JST APR	75% 100%	Legitimacy significantly	‘fairness in sanctions’

Journal article	state level (48.74% males)				and fair testing and appeal procedures			predicted PES attitudes	‘robustness of the anti-doping system’
Overbye & Wagner, 2013 Journal article	645 international level and nationally elite athletes (59% males)	Quantitative	Denmark	Web-based survey	5 items on athlete perceptions of the Therapeutic Use Exemption system	JST APR	75% 75%	Half of the athletes believed that some TUEs were obtained without a need. Those who received a TUE tended to distrust the TUE system more than those who had not	‘Therapeutic Use Exemption’ ‘effectiveness of anti-doping procedures’
Bourdon, Schoch, Broers & Kayser, 2014 Journal article	69 elite athletes	Quantitative	France, Belgium, Switzerland	Web-based survey	28 measuring opinions, attitudes, trust and experiences with the anti- doping system	PRP JST APR	75% 100% 100%	Athletes perceived the anti-doping system (i.e., ADAMS, TUE, Whereabouts) as necessary. However, they raised concerns and displayed low trust to the	‘justified procedures’ ‘harmonisation’ ‘suitability of anti-doping procedures for addressing the problem’

								anti-doping system	‘effectiveness of anti-doping procedures’
Elbe & Overbye, 2014 Journal article	400 elite athletes of team and individual sports (60.8% males)	Quantitative	Denmark	Web-based survey	7 items on participants experiences with doping control	JST APR	75% 100%	Athletes approve doping controls but sometimes experience negative emotions and feel a threat to their personal integrity	‘treating athletes equally and fairly’ ‘suitability of anti-doping procedures for addressing the problem’
Nolte, Steyn, Fletcher & Kruger, 2014 Journal article	346 high-school athletes (60% male)	Quantitative	South Africa	Survey	Items relating to morality and education of doping	PRP APR	75% 100%	Using PEDs is morally wrong and not enough education is being done in South Africa	‘justified procedures’ ‘education’
Overbye & Wagner, 2014 Journal article	645 international level and nationally elite athletes (59% males)	Quantitative	Denmark	Web-based survey	4 items on the fairness and effectiveness of the whereabouts system	PRP JST APR	100% 100% 100%	The whereabouts system is considered necessary. Low trust on the global functioning of the whereabouts system	‘justified procedures’ ‘harmonisation’ ‘effectiveness of anti-doping procedures’

Valkenburg, de Hon & van Hilvoorde, 2014 Journal article	129 elite athletes (41% males)	Quantitative	Netherlands	Paper and pencil survey	Items measuring athletes opinions about the whereabouts system	PRP JST APR	75% 75% 100%	Athletes supported the anti-doping system. However, they raised concerns about the whereabouts system, such as intruding athletes' privacy	'justified procedures' 'treating athletes equally and fairly' 'suitability of anti-doping procedures for addressing the problem'
Duiven, de Hon & Netherlands ADA, 2015 NADO research	740 elite status athletes	Quantitative	Netherlands	Web-based survey	Randomised response method to questions about doping controls	PRP JST APR	75% 75% 75%	The majority of athletes never have doubts about the integrity of a doping control. Comments suggest concerns of anti-doping integrity outside of the Netherlands	'justified procedures' 'harmonisation' 'robustness of the anti-doping system'
Engelberg, Moston & Skinner, 2015a Journal article	18 athletes who had committed anti-doping	Qualitative	Australia	Semi-structured interviews (9 face to face;	Topics included factors influencing the	PRP JST APR	100% 75% 100%	Bodybuilders saw the sanction process as	'justified procedures'

	violations (83% males)			9 online written)	decision to dope and perceptions of the sanction process			hypocritical and unfair, and that anti-doping organisations should leave sports to self-govern. Other athletes believed the system, although fallible, was fair and supported stricter sanctions.	‘treating athletes equally and fairly’ ‘fairness in sanctions’ ‘threat of sanctions as prevention’
Moston, Engelberg, & Skinner, 2015a Journal article	488 elite athletes competing at state level or above from team and individual sports (79.3% males)	Quantitative	Australia	Web-based and paper and pencil surveys	Items measuring athletes’ perceptions of certainty of detection and anti-doping policy	APR	75%	Athletes reported mixed views on the certainty of detection, with the majority viewed the current anti-doping regime as effective	‘fairness in sanctions’ ‘effectiveness of anti-doping procedures’

Overbye, Elbe, Knudsen & Pfister, 2014 Journal article	645 international and national level athletes from team and individual sports (59% male)	Quantitative	Denmark	Web-based survey	4 items measuring the deterrent effects of legal, social, financial and self-imposed sanctions	APR	100%	The ban and social sanctions emerged as the most important deterrent of doping	‘threat of sanctions as prevention’
Donovan, Jalleh & Gucciardi, 2015 Journal article	1,237 Olympic, international, national and state level (48.74% males)	Quantitative	Australia	Mail Survey	4 items on the equality, security and accuracy of anti-doping testing	JST APR	100% 100%	Athletes perceive the NADO to be fair and secure, however are unsure as to the accuracy of anti-doping testing	‘treating athletes equally and fairly’ ‘effectiveness of anti-doping procedures’ ‘robustness of the anti-doping system’
Efverstrom, Ahmadi, Hoff, & Backstrom, 2016a Journal article	261 elite athletes involved in athletics, basketball, ski and volleyball (54% male)	Quantitative	International sample	Online survey	6 items on the shared values, appropriateness and effectiveness of the doping control and whereabouts procedures	PRP JST APR	75% 100% 75%	Athletes a) accept the legitimacy of the rules, b) raised concerns about the legitimacy of the way the rules are enforced, c) privacy, lack of efficiency and equal	‘justified procedures’ ‘harmonisation’ ‘selection process’

								conditions were identified as threats of legitimacy	
Efverstrom, Backstrom, Ahmadi, & Hoff, 2016b Journal article	13 elite athletes from athletics, basketball, ski and volleyball (54% male)	Qualitative	International sample	Semi-structured interview	Interview guide on perceptions of equity, experiences of different anti-doping elements, and the athletes influence in anti-doping settings.	JST APR	100% 100%	Implementation of anti-doping procedures in different contexts causes inequalities and injustice. This negatively influences legitimacy	‘harmonisation’ ‘education’
Overbye, 2016 Journal article	645 international level and nationally elite athletes (59% males)	Quantitative	Denmark	Web-based survey	6 items on the appropriateness of the doping control procedures	JST APR	75% 100%	National doping control procedures were found appropriate, but not those in other countries. Athletes asking for an effective system were less satisfied with the existing anti-	‘harmonisation’ ‘selection process’ ‘robustness of the anti-doping system’

								doping procedures	
Erickson, Backhouse & Carless, 2017 Journal article	28 student athletes (46% male)	Qualitative	UK & USA	Semi-structured interviews	Interviews structured around attitudes towards whistleblowing	PRP	75%	Athletes believe that using PEDs is not what 'sport is about'	'justified procedures'
Gebert, Lamprecht & Stamm, 2017 NADO research	588 athletes who had been subject to Anti-doping Switzerland controls in the previous 36 months (65% male)	Quantitative	Switzerland	Web-based survey	5 items measuring perceptions of security and equality of anti-doping procedures	JST APR	100% 100%	Athletes reported that doping was less likely to be caught in other countries than their own. The majority of athletes report the doping controls to be secure	'harmonisation' 'robustness of the anti-doping system'
Overbye, 2017 Journal article	645 international and national level athletes from team and individual sports (59% male)	Quantitative	Denmark	Web-based survey	2 items measuring the deterrent effect of the doping control system	JST APR	75% 100%	Athletes did not perceive doping controls as deterrent to doping use	'effectiveness of anti-doping procedures'

USADA, 2017 NADO research	886 current and former registered testing pool athletes (56.3% males)	Quantitative	USA	Survey	6 items on athlete perceptions of the US anti-doping system	PRP JST APR	100% 100% 75%	National doping control procedures were found proper and appropriate. Athletes believed there to be differences in testing within foreign NADOs	‘justified procedures’ ‘harmonisation’ ‘fairness in sanctions’ ‘robustness of the anti-doping system’
Henning & Dimeo, 2018 WADA report	24 national and international level athletes in athletics, badminton, cycling, fencing, field hockey, swimming	Qualitative	Australia, Brazil, Denmark, India, South Africa, U.S., U.K.	Interviews via Skype	Semi-structured interviews covering NADOs and processes and regulations.	PRP JST APR	100% 100% 100%	Athletes were in favour and supportive of anti-doping. They were sceptical of the ability to harmonize international efforts and to effectively deter athletes from doping.	‘justified procedures’ ‘harmonisation’ ‘effectiveness of anti-doping procedures’
Kegelaers, Wyllemna, De Brandt, Van	36 current and former elite	Qualitative	Belgium	Multiple qualitative methods (i.e.	Interview questions focusing on the	APR	100%	Athletes described low chances of	‘effectiveness of anti-doping procedures’

Rossem & Rosier, 2018 Journal article	athletes (53% males)			face-to-face & focus group interviews, biographical analysis)	incentives and deterrents of doping utilising the 'push pull anti-push anti-pull' framework			being caught as push factors, anti-doping policies and personal values as anti-push factors and sanctions as anti-pull factors	'threat of sanctions as prevention'
Scharf, Zurawski & Ruthenberg, 2018 Journal article	523 athletes from individual and team sports (48.4%)	Quantitative	Germany	Web-based survey	Items relating to the intrusion of the ADAMS (Whereabouts) system into private life and protecting sport	PRP JST APR	75% 75% 75%	The majority of athletes believe that out of competition whereabouts protected sport, but are not favourable of the intrusive nature whereabouts system	'justified procedures' 'treating athletes equally and fairly' 'suitability of anti-doping procedures for addressing the problem'
Westmattmann, Dreiskämper, Strauß, Schewe & Plass, 2018 Journal article	146 top cycling and athletics athletes (48% males)	Quantitative	Germany	Web-based survey	14 items measuring the effectiveness of anti-doping procedures	JST APR	100% 100%	Athletes reported that anti-doping procedures were moderately effective	'treating athletes equally and fairly' 'threat of sanctions as prevention'

									‘education’
Al Ghobain, 2019 Journal article	408 male elite Saudi football players	Quantitative	Saudi Arabia	Questionnaire	Social Science Research Package. 4 items measuring legitimacy perceptions	JST APR	100% 100%	Majority of athletes believed the NADO to treat athletes equally, procedures were secure, offered a fair-hearing session for positive tests and TUEs were not thoroughly evaluated	‘treating athletes equally and fairly’ ‘fairness in sanctions’ ‘robustness of the anti-doping system’
Massucci, Butryn, & Johnson, 2019 Journal article	12 female professional world-class triathletes	Qualitative	USA and Canada	Semi-structured interview	Interview guide on perceptions and experiences of anti-doping efforts in triathlon	APR	100%	Anti-doping procedures have been improved but are not considered effective	‘effectiveness of anti-doping procedures’ ‘robustness of the anti-doping system’

Qvarfordt, Ahmadi, Bäckström, & Hoff, 2019 Journal article	13 elite athletes registered in the testing pool in athletics, basketball, skiing and volleyball (54% male)	Qualitative	International sample	Semi-structured interview	Interview guide on perceptions of anti-doping policy and procedures	JST APR	75% 100%	Athletes perceive limited information and a lack of leeway, yet an obligation to be dutiful to the anti-doping system. This complex situation puts the system at risk.	‘treating athletes equally and fairly’ ‘suitability of anti-doping procedures for addressing the problem’ ‘education’
Global Athlete, 2020 Independent research report	491 athletes who were/had competed at Olympic, Paralympic. International and National level	Quantitative	International sample from 48 countries	Web-based survey	Items relating to own NADO, other NADOs and WADA	JST APR	100% 100%	The majority of athletes feel that WADA does not work transparently, requires further reform and have less trust in international anti-doping programs than national ones	‘harmonisation’ ‘effectiveness of anti-doping procedures’

Notes:

^a Proper: normative; shared values [PRP], Just: process focused; rules are applied fairly and equally [JST], Appropriate: outcome focused; suitable and effective [APR]

