

An Empirical Investigation of Sport Values, Moral Attitudes, & Clean Sport Behaviour

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Executive Summary

WADA's International Standard for Education (2021) recognise values-based education (VBE) as an essential component of clean sport education efforts to promote clean sport sporting environments and instigate the spirit of sport, especially in younger generations of athletes and the general public. Recent social science research has shown that general values are associated with higher doping likelihood. Such values reflect general tendencies that either serve self-interest or are focused on communal well-being and acting in ways that benefit one's social group. Nevertheless, there is limited research on the effects of sport-specific values that have been previously associated with adaptive and maladaptive behavioural outcomes in sport, such as cheating.

The present study used the Values & Moral Attitudes Model (Lee et al., 2008) as a guiding theoretical framework to better understand how different values dimensions are related to either negative (self-reported Anti-Doping Rule Violations and doping likelihood) or positive clean sport behavioural outcomes (likelihood to report doping misconduct), and whether this relationship is influenced by sport-specific moral attitudes (acceptance of cheating, acceptance of gamesmanship, and keeping winning in proportion) and anticipated moral emotions towards doping.

The study was conducted in three countries with 435 participants, including adult high-performing athletes (in the UK and Greece) and adolescent student-athletes (in Cyprus). The results provided novel and important insights about sport-specific values and their interplay with moral attitudes, moral emotions, and clean sport behavioural outcomes. Key highlights include:

- Discouraging/retaliating against reporting to authorities (WADC Article 2.11) was consistently reported ADRV across the three countries that participated in the study, with prevalence ranging between 5.1-12.7%.
- Roughly 1 in 4 athletes in the UK and Greece, and 1 in 3 athletes in Cyprus said they knew other athletes who had committed ADRVs, and those who said so reported significantly higher levels of self-committed ADRVs.
- Likelihood to report doping misconduct by other vs. own coaches and fellow athletes was higher in the UK and Greece, indicating a social identity effect.
- Likelihood to report misconduct was higher for athletes than coaches in Cyprus, independent of their identity as in-group or out-group, indicating a power status effect.
- Sport-specific values are indirectly associated with doping likelihood, via the effects of moral attitudes (acceptance of cheating and gamesmanship) and moral motions towards doping.

On the basis of the present findings, we recommend that VBE interventions can be improved by targeting sport-specific moral, competence, and status values; moral attitudes in sport; and doping-specific moral emotions.

PART A. Introduction

Values are generally defined as beliefs that motivate and guide behaviour and reflect what is important for a person (Bardi & Schwartz, 2003). Different people may express different values – what is important to one person may be unimportant and personally irrelevant to another (Bardi & Schwartz, 2003; Schwartz et al., 2012). Schwartz’s Values Model (1992) is one of the most influential theories of values, and distinguishes values based on the two key bipolar dimensions: self-enhancement – self-transcendence, and openness to change – conservation. Values closer to self-enhancement reflect goals and actions that benefit the self (e.g., personal achievement: being ambitious and successful), whereas values in the self-transcendence spectrum reflect goals and actions that benefit others, and transcend the self (e.g., benevolence: being honest and loyal; Bardi & Schwartz, 2003). However, values can be context-specific and be defined based on the context wherein they are expressed and guide behaviour (Lee, Whitehead, & Balchin, 2000; Whitehead, Telfer, & Lambert, 2013).

1.1. Sport-Specific Values, Moral Attitudes, & Behavioural Outcomes

In their Values & Moral Attitudes Model, Lee et al. (2000) distinguished between three types of sport-specific values: moral (reflecting fairness and sportspersonship), competence (reflecting personal achievement and self-improvement), and status values (reflecting winning and outperforming others). Subsequent research (e.g., Lee, Whitehead, Ntoumanis, & Hatzigeorgiadis, 2008; Ntoumanis & Standage, 2009; Lucidi, Zelli, Mallia, Nicolais, Lazuras, & Hagger, 2017) showed that moral and competence values were associated with adaptive motivational profiles, such as focusing on self-improvement (task orientation) and prosocial sport behaviour (e.g., commitment to sport and respect for rules and conventions). On the other hand, status values were associated with ego-oriented

achievement goals (e.g., motivation to outperform others) and antisocial sport behaviour, such as cheating and gamesmanship, which involves using different tactics to throw off the opponent.

Social science research on doping has only recently examined the role of values and mostly focused on the general values described in Schwartz's (1992) model (i.e., self-enhancement vs. self-transcendence; openness to change vs. conservation dimensions). Relevant studies showed that athletes with higher scores on self-enhancement values also scored higher in doping likelihood, whereas self-transcendence and conservation values were negatively associated with doping likelihood (Ring, Kavussanu, & Gürpınar, 2020; Ring, Kavussanu, Gürpınar, Whitehead, & Mortimer, 2022). This research provides the foundation for further investigating values and their association with doping-related outcomes. It is worth examining if the Values & Moral Attitudes Model (Lee et al., 2008) can be used to examine the association between sport-specific values, moral attitudes, and doping-related outcomes. Notably, the Values & Moral Attitudes Model (Lee et al., 2008) provides an important addition to the extant research on values and doping-related outcomes because it recognises the value-expressive function of attitudes: one of the key functions of attitudes is that they express our values (Maio & Olson, 1995; Vollum & Buffington-Vollum, 2010).

A meta-analysis of 12 datasets showed that the effect sizes of the associations between the general moral values derived from Schwartz's model and unethical attitudes and decision-making were small-to-moderate ($r \sim 0.16 - 0.21$; Feldman, Chao, Farh, & Bardi, 2015). In sport contexts, moral and competence values have been associated with prosocial moral attitudes, such as respecting conventions, rules, and opponents, commitment to sport, and keeping winning in proportion. On the other hand, status values have been associated with antisocial moral attitudes, such as acceptance of cheating and the endorsement of gamesmanship tactics to throw off the opponent (Lee et al., 2008). To illustrate, athletes who

value outperforming others and winning at all costs are more likely to express attitudes that are conducive to cheating and rule-breaking (i.e., acceptance of cheating), and psychologically upsetting or manipulating an opponent (i.e., acceptance of gamesmanship). On the other hand, athletes who value self-improvement and fair play are more likely to express attitudes that reflect respect for rules, opponents, and conventions and keeping winning in proportion (Lee et al., 2008; Ntoumanis & Standage, 2009).

Moral attitudes can be differentially associated with doping-related outcomes. Lazuras et al. (2024) showed that athletes' endorsement of doping in a decisional trade-off scenario (e.g., exchange moral conduct for sporting success) was associated positively with acceptance of cheating (antisocial moral attitude) and negative with keeping winning in proportion (prosocial moral attitude). Given previous research on the application of the Values & Moral Attitudes Model (Lee et al., 2008) in the context of cheating and rule violation in tennis (Lucidi et al., 2017), it is theoretically plausible that doping-related outcomes, such as doping likelihood and anti-doping rule violations (ADRVs), will be associated positively with status values and negatively with moral and competence values. Accordingly, positive outcomes, such as willingness to report doping misconduct (i.e., protecting one's sport from doping) can be associated positively with moral and competence values, and negatively with status values. It is theoretically plausible, therefore, that prosocial and antisocial moral attitudes, as described in the Values & Moral Attitudes Model (Lee et al., 2008) model, can predict doping-related outcomes and also mediate the effects of values on doping-related outcomes. After all, doping is considered cheating because it reflects an illegitimate way to improve the chances of securing a sporting win, while contradicting the fundamental values of the Spirit of Sport and explicitly defying the Code (Woolway et al., 2021).

1.2. Revisiting Doping-Related Outcomes

The World Anti-Doping Code (hereinafter referred to as the *Code*; WADA, 2021) includes different anti-doping rules, the violation of which is met with sanctions. The severity of the sanctions depends on the degree and characteristics of the anti-doping rule violation (ADRV), as well as on previous doping misconduct (de Hon & van Bottenburg, 2017). The Code defines the boundaries of clean sport behaviour, and athletes who either intentionally or unintentionally cross these boundaries are considered “cheaters” (Engelberg, Moston, & Skinner, 2015). Article 2 of the Code describes 11 ADRVs, ranging from attempted or actual possession, use, of prohibited doping substances and methods, to critical omissions that may lead to doping control evasion (e.g., whereabouts failure). Notably, recognising that whistleblowing can effectively deter doping (Barkoukis, Petrou, Lazuras, & Ourda, 2021; Lazuras, Barkoukis, Bondarev, Ntovolis, Bocharov, Theodorou, & Bingham, 2021), the Code further specifies that acting in ways that prevents the reporting of doping misconduct represents an ADRV. Nevertheless, for the most part, the extant social science research on doping has largely focused on use/attempted use (or even intention/willingness to use) prohibited substances as a key doping-related outcome, without necessarily considering other ADRVs. This leaves an important gap because there is limited evidence about the prevalence of the different ADRV, and the association of ADRVs with relevant psychological constructs, such as values and moral attitudes.

1.3. The Present Study

The present study aimed to advance the extant research on the relationship between values and doping behaviour in sport (e.g., Ring et al., 2020; Ring et al., 2022) in two important ways. Firstly, by adapting, for the first time, the Values & Moral Attitudes Model (Lee et al., 2008) in the context of doping. The present study empirically examined the

associations of three types of sport-specific values (i.e., moral, competence, and status values) and two types of moral attitudes (i.e., antisocial: acceptance of cheating, acceptance of gamesmanship; prosocial: keeping winning in proportion) with different doping-related outcomes. Secondly, by considering an expanded assessment of doping-related outcomes that reflected both negative (e.g., self-reported ADRVs, doping likelihood under hypothetical scenarios) and positive behavioural outcomes (e.g., willingness to report doping misconduct). The distinction between negative and positive clean sport behavioural outcomes is aligned with the public positions of WADA's President and other WADA officials about whistleblowing (Bondarev et al., 2022; Lazuras et al., 2021). Thirdly, by incorporating moral emotions towards in the Values & Moral Attitudes Model (Lee et al., 2008). We argue that inasmuch attitudes serve as value-expressive constructs, they also have an affective dimension that may guide decision-making as illustrated in other areas of research, outside doping (Conner et al., 2015; Stevens et al., 2019). Recent evidence has shown that emotions can guide decision-making processes in relation to doping (e.g., Lazuras et al., 2017; Petrou, Lazuras, Hillier, & Mojtahedi, 2021). The research questions (RQs) and corresponding hypotheses (Hs) were formulated as follows.

RQ1: How do different sport values (i.e., moral, competence, and status) relate to moral attitudes (i.e., acceptance of cheating and gamesmanship, and keeping winning in proportion), moral emotions towards doping (i.e., embarrassment, shame, guilt, regret, anger) and negative and positive clean sport behaviours?

H1: Moral and competence values will be positively associated with higher scores in the moral attitude “keeping winning in proportion”, moral emotions towards doping, and willingness to report doping misconduct.

H2: Moral and competence values will be negatively associated with the moral attitudes “acceptance of gamesmanship” and “acceptance of cheating”, self-reported ADRVs, and doping likelihood.

H3: Status values will be negatively associated with keeping winning in proportion, moral emotions towards doping, and willingness to report doping misconduct.

H4: Status values will be positively associated with higher scores in acceptance of gamesmanship and cheating, self-reported ADRVs, and doping likelihood.

RQ2: Do moral attitudes and moral emotions towards doping mediate the association between sport values and negative and positive clean sport behaviours?

H5: The moral attitudes “acceptance of gamesmanship” and “acceptance of cheating” will mediate the associations of status values with self-reported ADRVs and doping likelihood.

H6: The moral attitude “keeping winning in proportion” will mediate the associations of moral and competence values with willingness to report doping misconduct.

H7: Moral emotions towards doping will mediate the associations of moral and competence values with willingness to report doping misconduct.

B. METHODOLOGY

2.1. Sampling

Athletes from both individual and team sports were recruited in each country. High-risk sports were prioritised in the UK and Greece, using information gathered from the following sources: a) WADA's 2022 Technical Document for Sport Specific Analysis, a detailed document that presents the risk for doping across different team and individual sports; b) the official International Testing Figures, as published by WADA on an annual basis; c) open-access and/or publicly available data by local NADOs about the sports that are more often involved in ADRVs. Following the identification of high-risk sports a random list of sport governing bodies/national federations were drawn from the registry of sport governing bodies that fall under the remit of UKAD (in the UK) and HADA (in Greece). The selected sport governing bodies were approached and asked to participate in the study by disseminating the study's survey among their athletes.

In Cyprus, a different sampling approach was used because data collection in this country focused on student-athletes. This allowed us to examine the study's theoretical model and associated hypotheses in younger, early-career competitive and elite athletes aged 16-18 years. A two-stage sampling approach was used in Cyprus, with sport schools being randomly selected from the population of sport schools in the country in the first stage of sampling (Stage 1 sampling unit), and student-athletes attending the selected schools being recruited for data collection (Stage 2 sampling unit).

A priori power analysis was conducted with R (v.4.2.2) and indicated that a minimum sample of 255 participants was needed to obtain a Structural Equation Model that will adequately fit the data using statistical power (α) set at 95%, and the following fit indices: RMSEA < .05, GFI = .95, AGFI = 0.97. Nevertheless, a larger sample size was needed to examine group

invariance and the hypothesised direct and indirect associations with mediation modelling. Therefore, the target was to collect data from 150 participants in each country (450 participants in total).

2.2. Measures

Structured anonymous questionnaires were used. The questionnaires were administered online in the UK and Greece, and in printed copies in Cyprus. The measures included socio-demographic (age, biological sex) and background variables (sport type, years of practising sport, exposure to clean sport education in the past), and the following psychological and behavioural constructs.

Values and moral attitudes were assessed with the respective sport values (YSVQ-2: moral, competence, and status values) and moral attitudes (AMSDYSQ-2: acceptance of cheating and gamesmanship, keeping winning in proportion) questionnaires developed by Lee et al. (2007; 2008) and Whitehead and Ntoumanis (2013).

Moral emotions towards doping was assessed with a measure based on previous research (e.g., Donovan et al., 2015; Petrou et al., 2022) and included anger, shame, guilt, regret, and embarrassment towards doping.

Clean sport behaviour outcomes included both negative (i.e., doping likelihood and self-reported ADRVs) and positive outcomes (i.e., likelihood to report doping misconduct), and the respective measures are described below.

Doping likelihood was assessed with the vignette-based measure (Ring et al., 2020), which measures athletes' likelihood to engage in doping under a performance-enhancement or an injury-recovery scenario.

Self-reported ADRVs were measured with a bespoke measure including the Anti-Doping Rule Violations presented in the World Anti-Doping Code Article 2: use or attempted use of prohibited doping substances or methods; evading, refusing, or failing to submit sample collection; whereabouts failures; tampering or attempted tampering of prohibited doping substances or methods; trafficking or attempted trafficking of prohibited doping substances or methods; administration or attempted administration to any athlete of any prohibited substances or methods; complicity or attempted complicity; prohibited association; and acts that discourage or retaliate against reporting doping misconduct to authorities.

Likelihood to report doping misconduct was assessed with a variation of the measure used by Lazuras et al. (2021), reflecting willingness to report doping misconduct to authorities under four different situations that varied social identity (in-group vs. out-group) and power status (low power status vs. high power status) of the violator: a) fellow athlete violator (in-group/low power status); b) athlete violator in another team (out-group/low power status); c) own coach violator (in-group/high power status), and d) other team's coach violator (out-group/high power status). A copy of the questionnaire is presented in Appendix 2.

2.3. Research Design & Ethics

A cross-sectional, survey-based, correlational design was used.

The empirical studies carried out in the UK, Greece, and Cyprus did not involve any kind of biomedical intervention (e.g., taking urine samples, or blood testing). In line with British Psychological Society's Code of Human Research Ethics, participants were duly informed about: (1) the purpose of the research, expected duration, and procedures; (2) their right to decline to participate and to withdraw from the research once participation has begun; (3) the foreseeable consequences of declining or withdrawing; (4) reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks,

discomfort, or adverse effects; (5) any prospective research benefits; (6) limits of confidentiality; and (7) whom to contact for questions about the research and research participants' rights. Furthermore, participants completed anonymous questionnaires and were asked to refrain from using any personal identifiers. The study was approved by the Ethics Review Boards of the University of Lincoln (UoL202417291), Aristotle University of Thessaloniki (183/2024), and the Cyprus Bioethics Committee (EEBK 2024.01.117), for data collection respectively in the UK, Greece, and Cyprus.

PART C. RESULTS

This section includes primary and secondary findings. The primary findings relate directly to the research questions and hypotheses of the study and are presented in Sections 3.5 and 3.6. Secondary findings pertain to examining the effects of background and demographic variables (e.g., age, gender, exposure to clean sport education) on the key doping-related outcomes of the study and contribute to better understanding the composition of the sample of participants in each country.

3.1. Sample Description & Background Characteristics

Overall, the study included 435 participants from the UK ($n = 147$, 33.8%), Greece ($n = 177$, 40.7%), and Cyprus ($n = 111$, 25.5%), 66.9% of which were males. The mean age of participants was 23.34 years ($SD = 8.48$, 95% CIs = 22.57 – 24.17 years). The majority of participants reported their highest level of competition to be national (46.5%, $n = 200$) or European/World championship (39.3%, $n = 157$), with less participants having competed at the Olympic or Paralympic Games (2.8%, $n = 12$) and regional competitions (14.2%, $n = 61$); most participants were in individual sports (58.4%, $n = 251$). Type of sport was almost equally distributed in the total sample, with 58.1% of the participant athletes competing in individual sports. Country profiles for participant's background characteristics are presented in Table 1.

One-way Analysis of Variance (ANOVA) with multiple comparisons (Scheffe) showed that significant between-country differences in age ($F = 78.71$, $p < .001$, $\eta^2 = 0.26$) and years of practising sport ($F = 31.81$, $p < .001$, $\eta^2 = 0.12$). Accordingly, analysis of frequencies with Pearson's chi-square further showed significant country differences in competition level ($\chi^2 = 42.49$, $p < .001$) exposure to clean sport education ($\chi^2 = 41.74$, $p < .001$), and having undergone doping control ($\chi^2 = 28.24$, $p < .001$; see Table 5).

Table 1. *Demographic Characteristics and Sport Competition Level*

	UK	Greece	Cyprus
<hr/>			
Age			
<i>Mean (SD)</i>	25.08 (6.46)	25.97 (9.71)	15.86 (1.00)
<hr/>			
Gender			
<i>Males (n)</i>	72.6% (106)	61.7% (108)	67.6% (73)
<i>Females (n)</i>	27.4% (40)	38.3% (67)	32.4% (35)
<hr/>			
Competition level			
<i>Olympic or Paralympic Games (n)</i>	0.0% (0)	5.6% (10)	1.9% (2)
<i>World or European Championship (n)</i>	34.7% (51)	38.4% (68)	36.1% (39)
<i>National Championship (n)</i>	41.5% (61)	41.2% (73)	62.0% (67)
<i>Regional/local competitions (n)</i>	23.8% (35)	14.7% (26)	0.0% (0)
<hr/>			

3.2. Doping-Related Characteristics

3.2.1. Self-Reported ADRVs

Self-reported ADRVs varied, ranging between 2.8% to 7.4%, and country profiles are presented in Tables 2-4. As per the World Anti-Doping Code 2021 Article 2, the top three most violated anti-doping rules in the current project included:

United Kingdom

1. Article 2.6, Possession: 9.2%
2. Article 2.2, Use or attempted use: 7.5%
3. Article 2.11, Discouraging/retaliated against reporting to authorities: 6.1%

Greece

1. Article 2.4, Whereabouts failures: 7.9%
2. Article 2.11, Discouraging/retaliated against reporting to authorities: 5.1%
3. Article 2.10, Prohibited association: 4%

Cyprus

1. Article 2.9, Complicity or attempted complicity: 13%
2. Article 2.11, Discouraging/retaliated against reporting to authorities: 12.7%
3. Article 2.10, Prohibited association: 11.8%

3.2.2. Knowing ADR violators, Anti-Doping Education, & Doping Control

Notably, 27.4% ($n = 119$) of the participants said that they knew other athletes who had committed ADRVs. In the total sample, 58.1% ($n = 250$) reported having undertaken anti-doping education, and 49.5% ($n = 215$) have never undergone doping control. Among those who had undergone doping control ($n = 219$), 4 athletes (1.8%) reported having tested positive for prohibited substances. Country profiles are presented in Table 5.

Table 2. *Self-reported ADRVs (n) – United Kingdom*

	Never	Rarely	Sometimes	Often	Very often
Use or attempted use	92.5% (136)	4.1% (6)	2.0% (3)	0.0% (0)	1.4% (2)
Evaded, refused, or failed to submit sample collection	97.3% (143)	0.7% (1)	1.4% (2)	0.7% (1)	0.0% (0)
Whereabouts failures	97.3% (143)	0.0% (0)	2.0% (3)	0.7% (1)	0.0% (0)
Tampering or attempted tampering	98.0% (144)	0.7% (1)	0.7% (1)	0.7% (1)	0.0% (0)
Trafficking or attempted trafficking	98.6% (145)	0.7% (1)	0.0% (0)	0.7% (1)	0.0% (0)
Administering or attempted administration	97.3% (143)	1.4% (2)	0.7% (1)	0.7% (1)	0.0% (0)
Possession	91.8% (135)	4.1% (6)	2.7% (4)	0.0% (0)	1.4% (2)
Complicity or attempted complicity	95.9% (141)	1.4% (2)	1.4% (2)	1.4% (2)	0.0% (0)
Prohibited association	95.2% (140)	4.1% (6)	0.0% (0)	0.7% (1)	0.0% (0)
Discouraging/retaliated against reporting to authorities	93.9% (138)	1.4% (2)	2.0% (3)	2.0% (3)	0.7% (1)

Table 3. *Self-reported ADRVs (n) – Greece*

	Never	Rarely	Sometimes	Often	Very often
Use or attempted use	97.7% (173)	1.1% (2)	1.1% (2)	0.0% (0)	0.0% (0)
Evaded, refused, or failed to submit sample collection	97.7% (173)	1.1% (2)	0.6% (1)	0.6% (1)	0.0% (0)
Whereabouts failures	92.1% (163)	6.2% (11)	1.1% (2)	0.0% (0)	0.6% (1)
Tampering or attempted tampering	96.6% (171)	2.3% (4)	0.0% (0)	1.1% (2)	0.0% (0)
Trafficking or attempted trafficking	98.9% (175)	0.6% (1)	0.6% (1)	0.0% (0)	0.0% (0)
Administering or attempted administration	98.9% (175)	0.0% (0)	0.6% (1)	0.0% (0)	0.0% (0)
Possession	97.7% (173)	1.1% (2)	1.1% (2)	0.0% (0)	0.0% (0)
Complicity or attempted complicity	97.7% (173)	1.7% (3)	0.0% (0)	0.0% (0)	0.0% (0)
Prohibited association	96.0% (170)	1.7% (3)	2.3% (4)	0.0% (0)	0.0% (0)
Discouraged/retaliated against reporting to authorities	94.9% (168)	1.7% (3)	1.7% (3)	1.1% (2)	0.6% (1)

Table 4. *Self-reported ADRVs (n) – Cyprus*

	Never	Rarely	Sometimes	Often	Very often
Use or attempted use	94.6% (105)	1.8% (2)	1.8% (2)	0.9% (1)	0.9% (1)
Evaded, refused, or failed to submit sample collection	96.4% (107)	2.7% (3)	0.0% (0)	0.0% (0)	0.9% (1)
Whereabouts failures	95.2% (100)	1.9% (2)	1.9% (2)	0.0% (0)	1.0% (1)
Tampering or attempted tampering	97.3% (107)	0.9% (1)	1.8% (2)	0.0% (0)	0.0% (0)
Trafficking or attempted trafficking	94.5% (104)	2.7% (3)	1.8% (2)	0.0% (0)	0.9% (1)
Administering or attempted administration	92.8% (103)	4.5% (5)	0.9% (1)	0.0% (0)	1.8% (2)
Possession	91.0% (101)	3.6% (4)	3.6% (4)	0.9% (1)	0.9% (1)
Complicity or attempted complicity	87.0% (94)	3.7% (4)	2.8% (3)	3.7% (4)	2.8% (3)
Prohibited association	88.2% (97)	3.6% (4)	3.6% (4)	0.9% (1)	3.6% (4)
Discouraging/retaliated against reporting to authorities	87.3% (96)	6.4% (7)	2.7% (3)	0.9% (1)	2.7% (3)

Table 5. *Knowing ADR violators, Anti-Doping Education, & Doping Control*

	UK	Greece	Cyprus
<i>Knowing athletes who have committed ADRVs</i>			
Yes	23.1% (34)	28.2% (50)	31.5% (35)
No	76.9% (113)	71.8% (127)	68.5% (76)
<i>Ever received anti-doping education</i>			
Yes	76.9% (113)	54.2% (96)	37.3% (41)
No	23.1% (34)	45.8% (81)	62.7% (69)
<i>Ever tested positive in doping control</i>			
Yes	1.4% (2)	0.0% (0)	1.8% (2)
No	45.6% (67)	63.3% (112)	32.7% (36)
Never been tested in doping control	53.1% (78)	36.7% (65)	65.5% (72)

3.3. Likelihood to Engage in Doping and Report ADRVs

3.3.1. Doping Likelihood under Hypothetical High-Risk Situations

With regards to doping likelihood, scores in this measure can range from (1) indicating no doping likelihood at all, to (7) indicating very high likelihood of doping. In the total sample, 76.6% and 66.3% of participants respectively reported that they would not consider doping at all (i.e., score = 1) under the performance enhancement or the injury recovery scenario.

Table 6 summarises the mean and standard deviation scores for the doping likelihood scenarios (i.e., performance enhancement, injury recovery, and average score for both scenarios) across the three countries of the present study, and the respective values (average score for both scenarios) reported in previous research. The pooled mean estimated from the mean scores in previous research is $\bar{x}_p = 2.31$.

Three one-sample t-tests were respectively used to compare pooled mean score of doping likelihood observed in previous research to the mean doping likelihood scores observed in the current study in the UK, Greece, and Cyprus. The results showed that, in each country, the observed doping likelihood mean scores were significantly lower than the pooled mean reported in previous research: $t_{UK} = -6.45, df = 146, p < .001, \text{Cohen's } d = -.533$; $t_{Greece} = -7.97, df = 176, p < .001, \text{Cohen's } d = -.599$; $t_{Cyprus} = -3.58, df = 108, p < .001, \text{Cohen's } d = -.343$. This suggests that athletes who participated in the current project were, on average, less likely to consider doping under high-risk situations, as compared to athletes in previous research.

Table 6. *Doping Likelihood Mean Scores in the Current Study and Previous Research*

	<i>M</i>	<i>SD</i>
<i>Current study – UK</i>		
Performance enhancement	1.39	1.06
Injury recovery	1.91	1.60
Average for both scenarios	1.65	1.24
<i>Current study – Greece</i>		
Performance enhancement	1.53	1.17
Injury recovery	1.67	1.34
Average for both scenarios	1.60	1.19
<i>Current study – Cyprus</i>		

Performance enhancement	1.67	1.29
Injury recovery	2.02	1.57
Average for both scenarios	1.85	1.35

Previous research

Hurst et al. (2019)	2.27	1.53
Kavussanu et al. (2025)*	2.11	1.27
Kavussanu et al. (2025)**	2.58	1.42
Kavussanu et al. (2025)***	2.50	1.09
Kavussanu et al. (2022) [†]	2.53	1.62
Kavussanu et al. (2022) [‡]	2.51	1.51
Kavussanu & Ring (2017)	2.53	1.41
Ring et al. (2020)	1.72	n/a

Note. *baseline scores for athletes assigned to a psychological intervention group; **baseline scores for athletes assigned to an educational intervention group; ***baseline scores for athletes assigned to a control group; [†]baseline for athletes assigned to a psychological intervention group; [‡]baseline scores for athletes assigned to an educational intervention group scores.

3.3.2. Cross-National Differences: ADRVs, Doping Likelihood, & Moral Emotions

One way ANOVA was used to compare scores in self-reported ADRVs, doping likelihood, and moral emotions between the three countries of the project. The results showed that statistically significant differences emerged in moral emotions towards doping ($F = 17.37, p < .001, \eta^2 = .075$). Cross-national differences in self-reported ADRVs were marginally significant ($F = 3.07, p = .047, \eta^2 = .014$) and non-significant differences were observed in doping likelihood ($F = 1.42, p = .243$). Multiple comparisons with Scheffe test further showed that athletes in the UK and Greece reported significantly higher scores in moral emotions towards doping (i.e., they anticipated higher levels of negative emotions if they were involved in doping) than athletes in Cyprus. Also, athletes in Cyprus reported significantly higher scores in self-reported ADRVs compared to Greek athletes. No other significant differences were observed. Analysis of frequencies with Pearson's chi-square further showed that there were non-significant differences in acquaintance with other athletes who commit ADRVs ($\chi^2 = 2.36, p = .306$).

3.3.3. Cross-National Differences: Likelihood to Report ADRVs

Four vignettes assessed likelihood to report doping misconduct (i.e., Article 2.7, Trafficking of Prohibited Substances) under different conditions that varied either social identity (in-groups vs. out-groups) or power status (coach/high power status vs. athlete/lower power status). Responses were anchored on a 5-point continuous scale with (1) denoting least likelihood and (5) denoting highest likelihood for whistleblowing. Table 7 presents the mean and standard deviation scores for each condition.

Table 7. *Likelihood to Report Athlete/Coach for Trafficking Prohibited Substances*

	UK*	Greece	Cyprus
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Report own coach (in-group/high power status)	3.36 (1.60)	3.16 (1.40)	2.54 (1.33)
Report other coach (out-group/high power status)	3.60 (1.55)	3.68 (1.41)	2.58 (1.33)
Report fellow athlete (in-group/low power status)	-	3.11 (1.39)	3.75 (1.27)
Report other athlete (out-group/low power status)	-	3.67 (1.41)	3.63 (1.23)

Note. *Due to technical error in the online data collection platform no data were recorded for the responses to the fellow/other athlete questions in the UK.

One-way Analysis of Variance (ANOVA) with Scheffe multiple comparisons were used to assess differences in likelihood to report doping misconduct between countries. The results indicated statistically significant differences across three conditions of identity and power status: $F(433)_{own\ coach} = 10.41, p < .001, \eta^2 = .046$; $F(434)_{other\ coach} = 22.56, p < .001, \eta^2 = .095$. Scores in likelihood of reporting fellow athlete were significantly higher in Cyprus than Greece: $F(287)_{fellow\ athlete} = 15.48, p < .001, \eta^2 = .051$, but scores in reporting doping misconduct of other athlete did not differ significantly between Greece and Cyprus: $F(287)_{other\ athlete} = 0.05, p = .815$. Multiple comparisons for mean score differences in likelihood to report own/other coach indicated that athletes in Cyprus scored significantly lower in likelihood to report both own and other coach, as compared to UK and Greece. The observed mean differences between Greece and the UK were non-significant.

Two 2×2 repeated measures ANOVA were used to assess the main effects and interaction of social identity (own/fellow vs. other) and power status (high power/coach vs. low power/athlete) respectively, in Greece and Cyprus.

For Greece, the results showed a significant main effect for social identity, $F(1,176) = 51.69$, $p < .001$, $\eta_p^2 = .227$, but not for power status. The interaction between social identity and power status was non-significant. These findings mean that willingness to report doping misconduct in Greek athletes is mostly driven by the social identity of the violator regardless of their status – it is more likely to report coaches or athletes from another team than their own.

For Cyprus, the results showed the opposite pattern with a significant main effect for power status, $F(1,109) = 71.79$, $p < .001$, $\eta_p^2 = .397$, but not for social identity. The interaction between social identity and power status was also non-significant. These findings mean that willingness to report doping misconduct in Cypriot athletes is mostly driven by the power status of the violator regardless of their social identity – it is more likely to report coaches than athletes regardless of whether they are in the same team or not.

For the UK, paired samples *t*-test were used to assess for social identity-based differences because participants' responses to the athlete questions were not recorded due to a technical error in the online data collection platform – rendering impossible any analysis of power status (i.e., comparing scores in willingness between athlete vs. coach violators). The results showed a significant social identity effect with UK athletes being significantly more willing to report doping misconduct of coaches from other teams than misconduct of their own coach, $t(146) = -4.19$, $p < .001$, Cohen's $d = -.346$.

3.4. Effects of Demographic & Sport Characteristics on Doping Risk

3.4.1. Gender Differences in Doping Risk

Non-parametric tests (Mann-Whitney U) were used to assess gender differences in doping risk (i.e., self-reported ADRVs, doping likelihood, and negative moral emotions towards doping: shame, guilt, embarrassment, anger, and regret) and protective factors (i.e., likelihood to report ADRVs committed by coaches/athletes). The results showed that significant gender differences emerged with female athletes reporting less likelihood to engage in doping and anticipating more negative emotions from doping, as compared to male athletes. These results were evident in both the UK ($U_{\text{doping likelihood}} = 1457.00, p < .001$; $U_{\text{emotions}} = 2706.00, p = .004$) and Cyprus ($U_{\text{doping likelihood}} = 890.50, p = .008$; $U_{\text{emotions}} = 1700.50, p = .003$). In Greece, significant gender differences emerged in likelihood to report ADRVs, with female athletes having higher scores than males in likelihood to report doping misconduct concerning coaches ($U_{\text{own coach}} = 4386.50, p = .016$; $U_{\text{other coach}} = 4390.50, p = .013$) and athletes ($U_{\text{fellow athlete}} = 4394.00, p = .015$; $U_{\text{other athlete}} = 4390.00, p = .013$).

3.4.2. Effects of Anti-Doping Education Participation on Doping Risk

Non-parametric tests (Mann-Whitney U) were also used to assess if having undergone anti-doping education in the past differentiated scores in the abovementioned doping risk and protective factors. No significant differences emerged in the UK and Cyprus. In Greece, athletes who had undergone anti-doping education in the past reported significantly higher scores in anticipating negative emotions from doping ($U = 4769.50, p = .008$) and lower scores in doping likelihood ($U = 3295.50, p = .036$).

3.4.3. Effects of Competitive Level Participation on Doping Risk

Non-parametric tests (Kruskal-Wallis H) were used to assess differences in doping risk and protective factors between the different levels of competition (i.e., Olympic or Paralympic

Games, World and/or European Championship, National Championship, Regional or Local Championship).

In the UK, athletes in the highest levels of competition for this sample (i.e., World and/or European Championship) reporting significantly lower scores in doping likelihood ($H = 12.515, p = .002$) and higher scores in likelihood to report doping misconduct committed by coaches ($H_{\text{own coach}} = 20.344, p < .001$; $H_{\text{other coach}} = 15.771, p < .001$), compared to athletes in the lower competition levels. In Greece, a marginally significant effect was observed for self-reported ADRVs ($H = 7.872, p = .049$) with athletes in higher competitive levels reporting higher scores in ADRVs compared to lower competition level athletes, but no other significant differences emerged. In Cyprus, competitive level did not significantly differentiate scores in either risk or protective factors for doping. The mean scores for each country are presented in Table 8.

3.4.4. Effects of Knowing Dopers on Doping Risk

Non-parametric tests (Mann-Whitney U) were used to assess if knowing athletes who had committed ADRVs had an effect on doping risk and protective doping factors. For the UK, significant differences emerged with athletes who knew ADR violators reporting significantly higher scores in self-reported ADRVs ($U = 1224.50, p < .001$) and doping likelihood ($U = 1106.50, p < .001$), and lower scores in anticipating negative emotions from doping ($U = 2550.50, p = .001$). Similar results were observed in Cyprus for self-reported ADRVs ($U = 985.00, p = .006$), doping likelihood ($U = 825.00, p < .001$), and negative emotions ($U = 1721.50, p = .008$). In Greece, the only statistically significant effect was observed for self-reported ADRVs ($U = 2428.50, p < .001$), with athletes who knew other athletes who committed ADRVs reporting higher scores in ADRVs themselves.

3.4.5. Effects of Sport Type on Doping Risk

Independent samples t-test was used to assess differences in doping risk and protective factors between individual and team sport athletes. Parametric tests were used in this case because individual and team sports were almost equally distributed in the total sample. No significant differences were observed across the three countries participating in the project.

Table 8. Mean Scores in Doping Risk & Protective Factors by Competitive Level

	ADRVs	Doping Likelihood	Report own coach	Report other coach	Report fellow athlete	Report other athlete
UK	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
<i>World or European Championship</i>	11.00 (3.25)	1.21 (0.75)	4.07 (1.41)	4.21 (1.37)	-	-
<i>National Championship</i>	10.36 (1.58)	1.84 (1.29)	2.80 (1.52)	3.19 (1.49)	-	-
<i>Regional/local competitions</i>	11.28 (5.45)	1.95 (1.55)	3.28 (1.63)	3.42 (1.68)	-	-
<hr/>						
Greece						
<i>Olympic or Paralympic Games</i>	11.10 (1.59)	1.00 (0.00)	3.50 (1.17)	3.40 (1.26)	3.40 (1.26)	3.50 (1.35)
<i>World or European Championship</i>	10.27 (0.72)	1.51 (0.96)	3.14 (1.35)	3.85 (1.37)	3.07 (1.35)	3.79 (1.37)
<i>National Championship</i>	10.35 (1.30)	1.67 (1.37)	3.13 (1.46)	3.57 (1.48)	3.06 (1.46)	3.56 (1.49)
<i>Regional/local competitions</i>	11.11 (3.29)	1.86 (1.35)	3.15 (1.48)	3.69 (1.43)	3.23 (1.42)	3.76 (1.33)
<hr/>						
Cyprus						
<i>Olympic or Paralympic Games</i>	10.00 (0.00)	1.50 (0.00)	5.00 (0.00)	2.50 (2.12)	3.50 (0.70)	3.50 (0.70)
<i>World or European Championship</i>	11.74 (5.31)	1.97 (1.44)	2.33 (1.22)	2.23 (1.26)	3.79 (1.22)	3.69 (1.15)
<i>National Championship</i>	11.00 (3.02)	1.83 (1.33)	2.64 (1.33)	2.80 (1.29)	3.83 (1.28)	3.71 (1.22)

Note. Due to technical error in the online data collection platform in the UK no data were recorded for reporting athletes.

3.5. Values, Moral Attitudes, and Doping Risk: Bivariate Associations

Bivariate associations indicate if different constructs are significantly associated with each other. They indicate trends in the data (e.g., if the observed relationships are positive or negative), but cannot be used to infer causation. The results showed that values, moral attitudes, moral emotions and doping risk and protective factors were variably associated with each other in each country.

Specifically, in the UK moral values were significantly and positive correlated with the moral attitude “keeping winning in proportion” ($r = .51, p < .001$), but negatively with the moral attitudes “acceptance of cheating” ($r = -.57, p < .001$) and “acceptance of gamesmanship” ($r = -.58, p < .001$). Accordingly, moral values were associated negatively with self-reported ADRVs ($r = -.22, p = .006$) and doping likelihood ($r = -.51, p < .001$), and positively with moral emotions towards doping ($r = .55, p < .001$) and likelihood to report coaches for doping misconduct¹ ($r = .36, p < .001$). Accordingly, competence values were associated positively with keeping winning in proportion ($r = .17, p = .036$) and moral emotions to doping ($r = .21, p = .008$), and negatively with acceptance of gamesmanship ($r = -.21, p = .010$) and self-reported ADRVs ($r = -.29, p < .001$). Status values were not significantly associated with moral attitudes, moral emotions to doping, or any of the other doping-related variables. All the moral attitude dimensions (acceptance of cheating, keeping winning in proportion, and acceptance of gamesmanship) were significantly associated with all the doping-related factors. The results are summarised in Table 9.

In Greece, moral values were associated in the expected direction with all doping-related variables: negatively with ADRVs ($r = -.32, p < .001$) and doping likelihood ($r = -.30, p <$

¹ For the analyses reported in this section, the average scores were used for likelihood to report coaches (mean score of two items: own and other) and athletes (mean score of two items: fellow athlete and other) who committed ADRVs.

.001), and positively with negative moral emotions ($r = .19, p = .008$) and likelihood to report coaches ($r = .18, p = .014$) and athletes ($r = .16, p = .034$) who committed ADRVs.

Competence values were also associated negatively with ADRVs ($r = -.29, p < .001$) and doping likelihood ($r = -.22, p = .003$), and positively with negative moral emotions towards doping ($r = .16, p = .032$). Status values were not significantly associated with any of the doping-related variables, but they correlated negatively with keeping winning in proportion ($r = -.25, p < .001$), and positively with acceptance of cheating ($r = .17, p = .018$) and gamesmanship ($r = .30, p < .001$). All the moral attitude dimensions (acceptance of cheating, keeping winning in proportion, and acceptance of gamesmanship) were significantly associated with all the doping-related factors, except self-reported ADRVs and the lack of significant association between acceptance of gamesmanship and likelihood to report coaches who committed ADRVs. The results are summarised in Table 10.

In Cyprus, moral values were associated negatively with acceptance of cheating ($r = -.54, p < .001$) and gamesmanship ($r = -.36, p < .001$), and positively with moral emotions to doping ($r = .34, p < .001$) and likelihood to report coaches for doping misconduct ($r = .21, p = .025$). Acceptance of cheating was associated positively with self-reported ADRVs ($r = .28, p = .002$) and doping likelihood ($r = .41, p < .001$), and negatively with moral emotions towards doping ($r = -.49, p < .001$) and likelihood to report athletes who committed ADRVs ($r = -.23, p = .015$). Keeping winning in proportion was associated negatively with doping likelihood ($r = -.24, p = .012$) and positively with likelihood to report athletes who committed ADRVs ($r = .35, p < .001$). Acceptance of gamesmanship was associated positively with doping likelihood ($r = .29, p = .002$), and negatively with moral emotions towards doping ($r = -.19, p = .046$) and likelihood to report coaches who committed ADRVs ($r = -.20, p = .031$). The results are summarised in Table 11.

Taken together, the findings from the bivariate correlation analysis showed that moral and competence values were associated in the hypothesised direction with moral attitudes in sport (i.e., acceptance of cheating, keeping winning in proportion, and acceptance of gamesmanship) and with doping-related factors, including both pro-doping (i.e., ADRVs, doping likelihood) and protective factors (i.e., negative moral emotions towards doping, likelihood to report coaches and/or athletes who committed doping misconduct). These associations were not invariant across countries, suggesting country-specific factors can play a role in this process. However, the assessment of such variables was not within the scope of the present study.

Table 9. Associations between Values, Moral Attitudes, and Doping-Related Factors – UK (n = 147)

	1	2	3	4	5	6	7	8	9	10
1. Moral values	-	.47***	.22*	-.57***	.51***	-.58***	-.22*	-.51***	.55***	.36***
2. Competence values		-	.62***	-.10	.17*	-.21*	-.29***	-.07	.21*	.14
3. Status values			-	.05	.09	.02	-.05	.14	.02	-.07
4. Moral attitudes – AoC				-	-.71***	.65***	.25*	.70***	-.70***	-.48***
5. Moral attitudes – KwP					-	-.64***	-.28***	-.57***	.61***	.40***
6. Moral attitudes – AoG						-	.29***	.62***	-.50***	-.40***
7. ADRVs							-	.29***	.62***	-.50***
8. Doping likelihood								-	-.68***	-.43***
9. Moral Emotions to Doping									-	.41***
10. Reporting coach										-

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship

Table 10. *Associations between Values, Moral Attitudes, and Doping-Related Factors – Greece (n = 176)*

	1	2	3	4	5	6	7	8	9	10	11
1. Moral values	-	.69***	.21**	-.41***	.29***	-.28***	-.32***	-.30***	.19*	.18*	.16*
2. Competence values		-	.29***	-.26***	.14	-.21**	-.29***	-.22**	.16*	.03	.02
3. Status values			-	.17*	-.25***	.30***	.01	.04	-.00	-.05	-.07
4. Moral attitudes – AoC				-	-.66***	.45***	.06	.34***	-.28***	-.29***	-.30***
5. Moral attitudes – KwP					-	-.47***	-.01	-.31***	.33***	.29***	.28***
6. Moral attitudes – AoG						-	.09	.29***	-.26***	-.12	-.16*
7. ADRVs							-	.28***	-.12	-.04	-.00
8. Doping likelihood								-	-.29***	-.21**	-.18*
9. Moral Emotions									-	.27***	.27***
10. Reporting coach										-	.95***
11. Reporting athlete											-

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship

Table 11. *Associations between Values, Moral Attitudes, and Doping-Related Factors – Cyprus (n = 110)*

	1	2	3	4	5	6	7	8	9	10	11
1. Moral values	-	.11	-.27**	-.54***	.18	-.36***	.07	-.15	.34***	.21*	.07
2. Competence values		-	.28**	-.08	-.12	.03	-.32***	-.07	.23*	-.13	.07
3. Status values			-	.31***	-.28**	.25*	-.14	-.04	-.15	.03	.07
4. Moral attitudes – AoC				-	-.25*	.65***	.28**	.41***	-.49***	-.17	-.23*
5. Moral attitudes – KwP					-	-.16	-.15	-.24*	.16	.11	.35***
6. Moral attitudes – AoG						-	.14	.29**	-.19*	-.20*	-.04
7. ADRVs							-	.56***	-.30***	.19*	-.15
8. Doping likelihood								-	-.43***	.01	-.28**
9. Moral Emotions									-	.07	.29**
10. Reporting coach										-	.33***
11. Reporting athlete											-

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship

3.6. Values, Moral Attitudes, and Doping Risk: Multivariate Associations

A series of hierarchical linear regression models were used to predict four key doping-related outcome variables:

- Self-reported ADRVs
- Doping likelihood
- Likelihood to report coaches committing ADRVs
- Likelihood to commit athletes committing ADRVs

All the regression models were developed based on the project's theoretical model (see Appendix 1), which is informed by the theoretical model of Values and Moral Attitudes by Lee et al. (2007; 2008), and included the following predictor variables:

- *Values*: Moral, competence, and status values.
- *Moral attitudes*: Acceptance of cheating, acceptance of gamesmanship (antisocial attitudes) and keeping winning in proportion (prosocial attitudes).
- *Moral emotions*: A composite measure of guilt, shame, regret, embarrassment, and anger.

Each regression model was completed in three steps with *Values* added in Step 1, *Moral attitudes* added in Step 2, *Moral emotions* added in Step 3². The multivariate effect size of the model was estimated using Cohen's f^2 and determined as either small (≥ 0.02), moderate (≥ 0.15), or large (≥ 0.35). Furthermore, regression-based multiple mediation analysis was used using Hayes' (2007) to examine the hypothesised mediation effects of moral attitudes and moral emotions on the associations between values and doping-related outcomes in line with

² For the prediction of doping likelihood, we statistically controlled for past behaviour (i.e., self-reported ADRVs) which was also added in the last step of the analysis.

RQ2 “Do moral attitudes and moral emotions towards doping mediate the association between sport values and negative and positive clean sport behaviours?”.

3.6.1. Predicting Self-Reported ADRVs – UK

The model predicted 18.3% (Adjusted $R^2 = 14.2\%$, $F = 4.44$, $p < .001$) of the variance in self-reported ADRVs, indicating a moderate multivariate effect size, Cohen’s $f^2 = 0.22$.

Multicollinearity was not evident among predictor variables and the lowest tolerance value was .311. Competence values ($\beta = -.384$, $p < .001$) were significantly associated with the outcome variable at the last step of the analysis. No other statistically significant effects were observed.

3.6.2. Predicting Self-Reported ADRVs – Greece

The model predicted 15.3% (Adjusted $R^2 = 11.7\%$, $F = 4.32$, $p < .001$) of the variance in self-reported ADRVs indicating a moderate multivariate effect size, Cohen’s $f^2 = 0.18$.

Multicollinearity was not evident among predictor variables and the lowest tolerance value was .443. Moral ($\beta = -.314$, $p = .004$) and status values ($\beta = .165$, $p = .047$) were significantly associated with the outcome variable at the last step of the analysis. No other statistically significant effects were observed.

3.6.3. Predicting Self-Reported ADRVs - Cyprus

The model predicted 21.5% (Adjusted $R^2 = 16\%$, $F = 3.87$, $p < .001$) of the variance in self-reported ADRVs, indicating a moderate multivariate effect size, Cohen’s $f^2 = 0.27$.

Multicollinearity was not evident among predictor variables and the lowest tolerance value was .397. Competence ($\beta = -.239$, $p = .016$) values were significantly associated with the outcome variable at the last step of the analysis. No other statistically significant effects were observed, although a marginally non-significant effect was observed for status values ($\beta = -.198$, $p = .057$) and keeping winning in proportion ($\beta = -.187$, $p = .052$).

Predicting ADRVs – Summary of Findings

Taken together, the findings from the regression models indicate that values are variably associated with ADRVs across the three countries (i.e., competence values in the UK and Cyprus, and moral and status values in Greece significantly predicted ADRVs), but there was either limited or no effect from moral attitudes or moral emotions. The findings from the regression models predicting self-reported ADRVs are summarised in Table 12.

3.6.4. Predicting Doping Likelihood - UK

The model predicted 69.4% (Adjusted $R^2 = 67.7\%$, $F = 39.17$, $p < .001$) of the variance in doping likelihood, indicating a large multivariate effect size, Cohen's $f^2 = 2.26$.

Multicollinearity was not evident among predictor variables and the lowest tolerance value was .311. The results showed that, in the first step of the analysis, both moral ($\beta = -.595$, $p < .001$) and status values ($\beta = .243$, $p = .006$) were significantly associated with doping likelihood. In step 2, the effect of moral values turned non-significant, but status values were still significantly associated with doping likelihood ($\beta = .157$, $p = .035$). Acceptance of cheating ($\beta = .426$, $p < .001$) and gamesmanship ($\beta = .210$, $p = .012$) were also significantly associated with doping likelihood. ADRVs and moral emotions were added at the last step of the analysis, and a potential suppressor effect was observed with competence values having a marginally significant effect ($\beta = .140$, $p = .040$) on doping likelihood. Other values-related variables did not have a significant effect. Acceptance of cheating ($\beta = .245$, $p = .004$) and gamesmanship ($\beta = .198$, $p = .006$) retained a significant effect. Also, both ADRVs ($\beta = .298$, $p < .001$) and moral emotions ($\beta = -.331$, $p < .001$) were significantly associated with doping likelihood. Regression-based mediation modelling showed that the association between moral values and doping likelihood was fully mediated by acceptance of cheating ($z = -3.23$, $p = .001$), acceptance of gamesmanship ($z = -3.17$, $p = .001$), and moral emotions ($z = -3.95$, $p < .001$).

.001). No other significant mediation effects were observed between values dimensions and doping likelihood.

3.6.5. Predicting Doping Likelihood - Greece

The overall model predicted 24.6% (Adjusted $R^2 = 21.0\%$, $F = 6.80$, $p < .001$) of the variance in doping likelihood, indicating a moderate multivariate effect size, Cohen's $f^2 = 0.32$.

Multicollinearity was not evident among predictor variables with the lowest tolerance value being .421. The results showed that moral values were negatively associated with doping likelihood ($\beta = -.289$, $p = .005$), but this effect turned non-significant when moral attitudes dimensions were added in Step 2. However, none of the moral attitudes dimensions were significantly associated with doping likelihood, except for a marginally non-significant effect for acceptance of gamesmanship ($\beta = .153$, $p = .071$). At the last step of the analysis the only significant predictors of doping likelihood were self-reported ADRVs ($\beta = .225$, $p = .002$) and moral emotions towards doping ($\beta = -.146$, $p = .047$). Mediation modelling further showed that moral emotions significantly mediated the relationship between moral values and doping likelihood ($z = -2.11$, $p = .034$). Mediation modelling did not include moral attitudes dimensions because they were not associated with doping likelihood in the regression model.

3.6.6. Predicting Doping Likelihood - Cyprus

The overall model predicted 46.9% (Adjusted $R^2 = 42.5\%$, $F = 10.79$, $p < .001$) of the variance in doping likelihood, indicating a large multivariate effect size, Cohen's $f^2 = 0.88$.

Multicollinearity was not evident among predictor variables as the lowest tolerance value was .390. The results showed that status values ($\beta = -.243$, $p = .017$), acceptance of cheating ($\beta = .395$, $p = .003$), and keeping winning in proportion ($\beta = -.216$, $p = .022$) were significantly associated with doping likelihood in the second step of the analysis. However, when ADRVs and moral emotions were added at the last step of the analysis, the effect of acceptance of

cheating and keeping winning in proportion turned non-significant, although a marginally significant effect was retained for status values ($\beta = -.173, p = .048$). A potential suppressor effect was observed with competence values having a marginally significant effect ($\beta = .168, p = .046$) on doping likelihood. Both moral emotions ($\beta = -.255, p = .004$) and ADRVs ($\beta = .441, p < .001$) were significantly associated with doping likelihood at the last step of the analysis. Mediation analysis indicated that the total effect (*c* path) of status values on doping likelihood was non-significant, therefore no further analysis of mediation effects was done.

Predicting Doping Likelihood – Summary of Findings

Taken together, the findings from the regression models provide partial support to the hypothesised model of the study by showing that moral attitudes and/or moral emotions mediate the associations between values dimensions and doping likelihood. The results from the regression analyses are summarised in Table 13.

3.6.7. Reporting Coaches' ADRVs

In the UK ($R^2 = 27.7\%$, Adjusted $R^2 = 24.1\%$, $F = 7.60, p < .001$, Cohen's $f^2 = 0.38$), significant predictors of likelihood to report coaches committing ADRVs included moral ($\beta = .355, p < .001$) and status values ($\beta = -.235, p = .018$) at Step 1. Acceptance of cheating ($\beta = -.304, p = .011$) and status values ($\beta = -.192, p = .047$) were significant predictors in Step 2, but only acceptance of cheating ($\beta = -.264, p = .043$) retained a significant effect at the last step of the analysis.

In Greece ($R^2 = 16.0\%$, Adjusted $R^2 = 12.5\%$, $F = 4.55, p < .001$, Cohen's $f^2 = 0.19$), moral values ($\beta = .319, p = .002$) predicted the outcome variable in Step 1, but at the final step of the analysis the only significant predictor was moral emotions ($\beta = .207, p = .008$). Mediation analysis indicated a significant mediation effect for moral attitudes ($z = 2.10, p = .03$).

In Cyprus ($R^2 = 13.8\%$, Adjusted $R^2 = 7.8\%$, $F = 2.27$, $p = .034$, Cohen's $f^2 = 0.16$), the outcome variable was significantly associated with competence ($\beta = -.234$, $p = .024$) and status values ($\beta = .248$, $p = .024$) at the last step of the analysis. The results from the regression models from the three countries are summarised in Table 14.

3.6.8. Reporting Athletes' ADRVs

In Greece ($R^2 = 15.7\%$, Adjusted $R^2 = 12.1\%$, $F = 4.45$, $p < .001$, Cohen's $f^2 = 0.18$), status values ($\beta = .275$, $p = .029$) predicted the outcome variable in Step 1, but this effect turned non-significant in Step 2, where acceptance of cheating had a significant effect ($\beta = -.208$, $p = .047$). At the final step of the analysis the only significant predictor was moral emotions ($\beta = .222$, $p = .004$). Mediation analysis indicated a significant mediation effect for moral attitudes ($z = 2.16$, $p = .03$).

In Cyprus ($R^2 = 23.0\%$, Adjusted $R^2 = 17.6\%$, $F = 4.22$, $p < .001$, Cohen's $f^2 = 0.29$), the outcome variable was significantly associated with status values ($\beta = .216$, $p = .039$), acceptance of cheating ($\beta = -.287$, $p = .036$), and keeping winning in proportion ($\beta = .376$, $p < .001$) in Step 2. At the last step of the analysis, only status values ($\beta = .227$, $p = .028$) and keeping winning in proportion ($\beta = .365$, $p < .001$) retained a significant effect, and a marginally non-significant effect was observed for moral emotions ($\beta = .199$, $p = .053$). The results from the regression models from Greece and Cyprus are summarised in Table 15.

Reporting Athletes and Coaches' ADRVs – Summary of Findings

With regards to likelihood to report coaches for ADRVs, the results were not consistent across countries. Although values dimensions were associated with the outcome variable across the three countries, moral attitudes and emotions emerged as significant predictors only in the UK and Greece respectively. Similarly, the predictors of likelihood to report athletes for ADRVs were not consistent between Greece and Cyprus.

3.6.9. Hypothesis-testing Summary

Table 16 summarises the research questions and hypotheses of the study and indicates whether these were supported by the data.

Table 12. *Predictors of Self-Reported ADRVs in Three Countries*

	UK (<i>n</i> = 147)			Greece (<i>n</i> = 176)			Cyprus (<i>n</i> = 107)		
	Standardised coefficients (β)			Standardised coefficients (β)			Standardised coefficients (β)		
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>
Moral values	-.097	.122	.134	-.245*	-.315**	-.314**	-.032	.132	.150
Competence values	-.365***	-.392***	-.384***	-.154	-.151	-.146	-.266*	-.265*	-.239*
Status values	.194	.172	.166	.110	.157	.165*	-.086	-.190	-.198
Moral attitudes – AoC	-	.073	.039	-	-.088	-.093	-	.261	.195
Moral attitudes – KwP	-	-.169	-.154	-	.089	.111	-	-.196*	-.187
Moral attitudes – AoG	-	.123	.128	-	.020	.004	-	.042	.065
Moral emotions	-	-	-.069	-	-	-.099	-	-	-.153

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship.

Table 13. *Predictors of Doping Likelihood in Three Countries*

	UK (<i>n</i> = 147)			Greece (<i>n</i> = 176)			Cyprus (<i>n</i> = 107)		
	Standardised coefficients (β)			Standardised coefficients (β)			Standardised coefficients (β)		
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>
Moral values	-.595***	-.141	-.119	-.289**	-.145	-.074	-.187	.056	.029
Competence values	.055	-.004	.148*	-.060	-.038	.003	.000	.008	.168*
Status values	.243*	.157*	.080	.127	-.004	-.027	-.102	-.243*	-.173*
Moral attitudes – AoC	-	.426***	.245**	-	.130	.141	-	.395**	.169
Moral attitudes – KwP	-	-.073	.048	-	-.108	-.095	-	-.216*	-.116
Moral attitudes – AoG	-	.210*	.198*	-	.153	.124	-	.083	.104
Moral emotions	-	-	-.331***	-	-	-.146*	-	-	-.255**
ADRVs	-	-	.293***	-	-	.225**	-	-	.441***

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship; ADRVs = anti-doping rule violations.

Table 14. *Predictors of Likelihood to Report Coaches Committing ADRVs*

	UK (n = 147)			Greece (n = 176)			Cyprus (n = 107)		
	Standardised coefficients (β)			Standardised coefficients (β)			Standardised coefficients (β)		
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>
Moral values	.355***	.055	.040	.319**	.185	.183	.279*	.176	.170
Competence values	.125	.177	.167	-.171	-.163	-.173	-.225*	-.225	-.234*
Status values	-.235*	-.192*	-.185	-.074	.013	-.004	.185	.245*	.248*
Moral attitudes – AoC	-	-.304*	-.264*	-	-.180	-.167	-	-.116	-.093
Moral attitudes – KwP	-	.101	.083	-	.162	.116	-	.079	.076
Moral attitudes – AoG	-	-.065	-.071	-	.047	.082	-	-.115	-.123
Moral emotions	-	-	.084	-	-	.207*	-	-	.054

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship.

Table 15. *Predictors of Likelihood to Report Athletes Committing ADRVs*

	Greece (<i>n</i> = 176)			Cyprus (<i>n</i> = 107)		
	Standardised coefficients (β)			Standardised coefficients (β)		
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>
Moral values	.275*	.131	.129	.095	-.049	-.073
Competence values	-.141	-.139	-.149	.028	.034	.000
Status values	-.077	.018	.000	.094	.216*	.227*
Moral attitudes – AoC	-	-.208*	-.195	-	-.287*	-.200
Moral attitudes – KwP	-	.138	.089	-	.376***	.365***
Moral attitudes – AoG	-	.026	.063	-	.130	.100
Moral emotions	-	-	.222**	-	-	.199

Note. * $p \leq .05$; ** $p \leq .005$; *** $p \leq .001$; AoC = Acceptance of cheating; KwP = Keeping winning in proportion; AoG = Acceptance of gamesmanship.

Table 16. *Research Question and Hypothesis-Testing Summary*

RQ1: How do different sport values (i.e., moral, competence, and status) relate to moral attitudes (i.e., acceptance of cheating and gamesmanship, and keeping winning in proportion), moral emotions towards doping (i.e., embarrassment, shame, guilt, regret, anger) and negative and positive clean sport behaviours?

H1: Moral and competence values will be positively associated with higher scores in the moral attitude “keeping winning in proportion”, moral emotions towards doping, and willingness to report doping misconduct. Partly supported across the three countries

H2: Moral and competence values will be negatively associated with the moral attitudes “acceptance of gamesmanship” and “acceptance of cheating”, self-reported ADRVs, and doping likelihood. Fully supported in the UK and Greece
Partly supported in Cyprus

H3: Status values will be negatively associated with keeping winning in proportion, moral emotions towards doping, and willingness to report doping misconduct. Partly supported in Greece and Cyprus

H4: Status values will be positively associated with higher scores in acceptance of gamesmanship and cheating, self-reported ADRVs, and doping likelihood. Partly supported in Greece and Cyprus

RQ2: Do moral attitudes and moral emotions towards doping mediate the association between sport values and negative and positive clean sport behaviours?

H5: The moral attitudes “acceptance of gamesmanship” and “acceptance of cheating” will mediate the associations of status values with self-reported ADRVs and doping likelihood.	Not supported across countries for the effect of status values
	Partly supported for the effect of moral values on doping likelihood only in the UK
H6: The moral attitude “keeping winning in proportion” will mediate the associations of moral and competence values with willingness to report doping misconduct.	Not supported across countries
H7: Moral emotions towards doping will mediate the associations of moral and competence values with willingness to report doping misconduct.	Partly supported for the effect of moral values on reporting likelihood only in Greece

PART D. CONCLUSIONS

The present study aimed to advance current understanding of doping behaviour by specifically addressing the role of sport-specific values, moral attitudes, and moral emotions. To this effect, the Values & Moral Attitudes Model (Lee et al., 2008) was adapted, for the first time, in the context of clean sport behaviour across three countries: UK, Greece, and Cyprus. This model allowed us to determine a) which dimensions of sport-specific values are relevant to negative (e.g., ADRVs and doping likelihood) and positive clean sport behaviour outcomes (e.g., whistleblowing likelihood); b) whether values dimensions relate to clean sport behaviour outcomes directly or indirectly, via antisocial (i.e., acceptance of cheating, acceptance of gamesmanship) and prosocial (i.e., keeping winning in proportion) moral attitudes; c) whether moral emotions can be meaningfully integrated in the value-expressive attitude model and improve its predictive validity. Answering these questions is important for informing clean sport education interventions, and even more so values-based education (VBE) against doping. This section discusses the findings of the present study both in relation to theoretical and methodological advances, and behavioural insights that reflect implications for anti-doping practice.

4.1. Theoretical, Methodological Advances & Behavioural Insights

4.1.1. A Nuanced Approach to ADRVs Assessment

The vast majority of social science research studies in the past has focused on self-reported use of prohibited substances – a violation reflected in the WADC Article 2.2 “*Use of attempted use of a prohibited substance or a prohibited method*”. Indeed, WADA’s Social Science Research Package for NADOs (Donovan et al., 2015) includes methods for assessing the use of prohibited and other substances (e.g., nutritional supplements), but there is limited research of measurement tools assessing the broader spectrum of ADRVs as they are

reflected in other parts of Article 2 of the WADC. The present study developed and used, for the first time, a bespoke self-reported measure of ADRVs that reflected all ADRVs included in the WADC³ and also assessed acquaintance with ADR violators. Our findings indicated that:

- Other ADRVs (e.g., complicity, whereabouts failures, prohibited association) can be equally or more prevalent than self-reported use of prohibited substances.
- Discouraging/retaliating against reporting to authorities (Article 2.11) was consistently reported ADRV across the three countries that participated in the study, with prevalence ranging from 5.1% to 12.7%.
- Roughly 1 in 4 athletes in the UK and Greece, and 1 in 3 athletes in Cyprus said they knew other athletes who had committed ADRVs, and those who said so reported significantly higher levels of self-committed ADRVs.

With regards to (3), assessing if athletes are acquainted with ADR violators can be used as a proxy measure of self-committed ADRVs. It is plausible that athletes who engage (or think about engaging) in ADRVs also know other athletes committing ADRVs, reflecting peer selection or homophily processes. While distinct concepts, peer selection and homophily reflect the tendency to associate with (homophily) purposefully choose (peer selection) others with similar characteristics and behaviours. In the context of moral transgressions, such processes can help in alleviating negative emotions associated with the transgression (e.g., shame, guilt), maintaining cognitive consistency, and sharing practices and information about their transgressions (Barnett et al., 2022; Flashman & Gambetta, 2014; Kasahara & Karasawa, 2025). Although the present study focused only on acquaintance with other athletes who

³ Our self-reported ADRVs measure included Articles 2.2 to 2.11, and participants reported the frequency of committing said ADRVs. Presence of prohibited substances or its metabolites was assessed as a separate question that asked participants if they were ever tested in a doping control and, if so, whether the test was negative or positive.

commit ADRVs, the measure can be further expanded in the future to include acquaintance with Athlete Support Personnel (ASP) committing ADRVs (e.g., possession, trafficking, and administration of prohibited substances or methods). Such an expanded measure could be completed by both athletes and ASP.

Recommendations for practice

1. Consider expanding current assessment of self-reported ADRVs to incorporate a broader range of violations that reflect the entirety of Article 2 of the World Anti-Doping Code.
2. Consider using measures of acquaintance with ADR violators (athletes and ASP) as a proxy measure of self-committed ADRVs.

4.1.2. Cross-National Differences in ADRVs, Doping Likelihood, Moral Emotions, and Likelihood of Whistleblowing

Previous research has indicated differences between countries in risk factors for doping, such as doping likelihood. Hurst et al. (2025) showed that UK athletes reported significantly higher scores in doping likelihood compared to Greek athletes. However, no previous research has assessed cross-national differences across a range of doping-related behaviours including negative (i.e., self-reported ADRVs and doping likelihood) and positive outcomes, such as likelihood to report doping misconduct. The present study indicated that:

- Doping likelihood scores were significantly lower in UK, Cyprus, and Greece compared to the average scores in doping likelihood reported in previous research with athletes from different countries.

- No significant differences were observed in doping likelihood between UK, Greece, and Cyprus.
- Athletes from Cyprus reported lower scores in moral emotions compared to athletes from Greece and UK, and higher scores in self-reported ADRVs compared to athletes from Greece.
- Greek athletes are more likely to report doping misconduct of coaches or athletes from another team than their own, indicating a social identity effect.
- UK athletes were more likely to report doping misconduct of coaches from other teams than misconduct of their own coach, also indicating a social identity effect.
- Cypriot athletes are more likely to report coaches than athletes regardless of whether they are in the same team or not, indicating a power status effect.
- Likelihood of reporting coaches committing ADRVs was associated with lower scores in acceptance of cheating in the UK, higher scores in moral emotions in Greece, and higher scores in status values but lower scores in competence values in Cyprus.
- Likelihood of reporting athletes committing ADRVs was associated with higher scores in moral emotions in Greece, and with higher scores in status values and in prosocial moral attitudes (keeping winning in proportion) in Cyprus.

The findings about cross-national differences between UK, Cyprus, and Greece should be treated with caution because of significant differences in participant characteristics, including age, years of practising main sport, and competition level. Notwithstanding this limitation, the present study provided important insights into the processes that may motivate athletes to report doping misconduct. Whereas Greek and UK athletes' likelihood to report anti-doping rule violators was driven mostly from social identity protection motives (e.g., protecting in-

group members vs. out-groups), athletes in Cyprus were mostly concerned with the target's power status than social identity being more reluctant to report coaches' ADRV.

Recommendations for practice:

1. Perceived power status and social identity of the transgressor can differentially motivate athletes to report doping misconduct in different countries. These aspects should be taken into consideration in both measuring whistleblowing likelihood, and in designing interventions to promote whistleblowing.
2. Values, moral attitudes (acceptance of cheating and gamesmanship), and moral emotions towards doping can be targeted by interventions aiming to promote whistleblowing behaviour.

4.1.3. Doping Likelihood: The Roles of Values, Moral Attitudes, & Moral Emotions

The Values & Moral Attitudes Model (Lee et al. 2008) that was used in the present study distinguishes between moral, competence, and status values and supports a value-expressive function of moral attitudes in sport. Specifically, moral and competence values are positively associated with prosocial attitudes (e.g., keeping winning in proportion) and positive behavioural outcomes in sport, whereas status values are positively associated with anti-social attitudes (e.g., acceptance of cheating and gamesmanship) and negative behavioural outcomes, such as disrespecting sport rules and cheating (Lucidi et al., 2017). The present study examined whether the different types of values and corresponding prosocial and anti-social attitudes were associated with negative behavioural outcomes, such as ADRVs and doping likelihood, as well as with positive, clean sport behavioural outcomes, such as willingness to report doping misconduct. The findings showed that:

- The effects of values differed between countries: ADRVs were associated with competence values in the UK and Cyprus, and moral and status values in Greece.
- In the UK, the effect of moral values on doping likelihood was mediated by antisocial moral attitudes (i.e., acceptance of cheating, acceptance of gamesmanship) and moral emotions.
- In Greece, the effect of moral values on doping likelihood was mediated by moral emotions.

Recommendations for practice:

1. Values-based education (VBE) against doping should target different values dimensions, those that are associated with specific doping outcomes in each country.
2. Clean sport interventions should also target moral attitudes, and especially acceptance of cheating and gamesmanship, because these factors mediate the effects of values on doping likelihood. VBE could be effective not only by targeting moral values but also addressing permissive attitudes to cheating and gamesmanship, as well as moral emotions.

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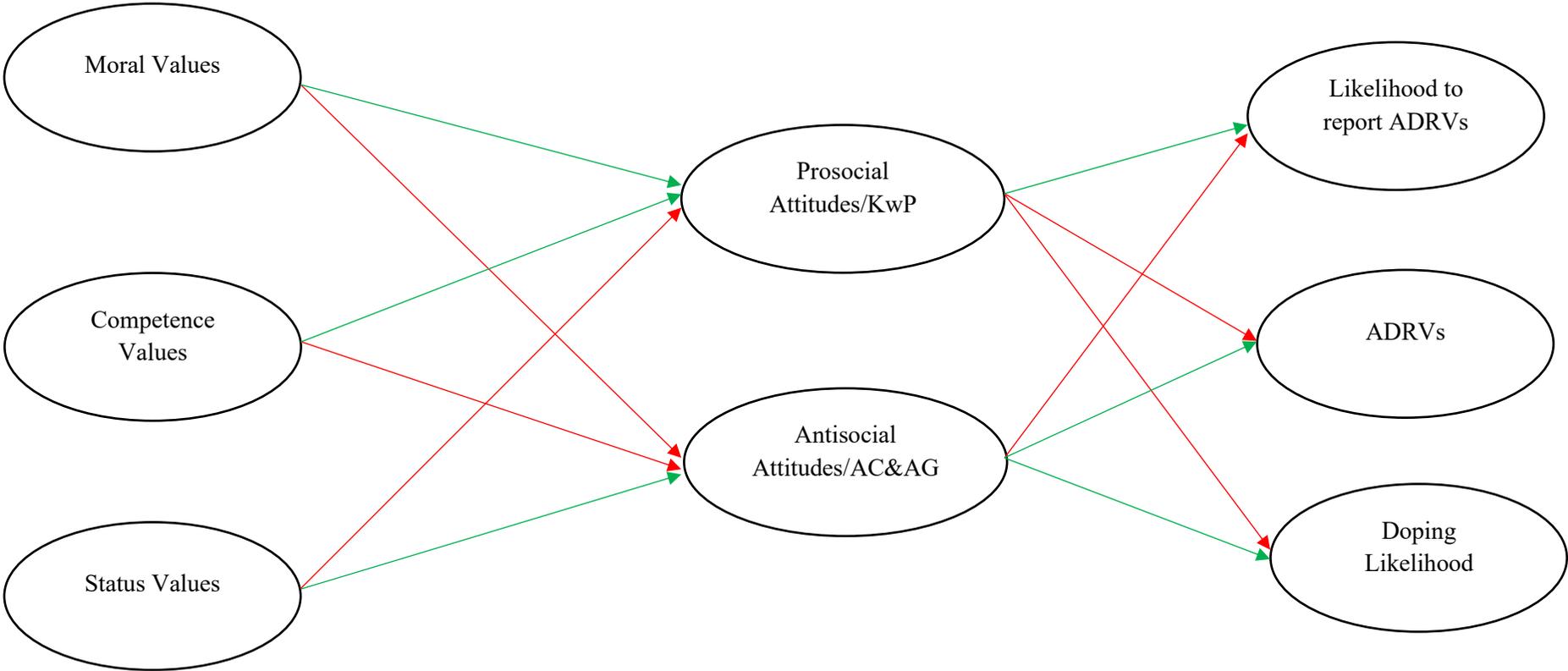
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Appendix 1. Theoretical Model of the Study



Note. Red arrows indicate negative direct associations; green arrows indicate positive direct associations; KwP = Keeping Winning in Proportion; AC = Acceptance of Cheating; AG = Acceptance of Gamesmanship

Appendix 2. Questionnaire Used in the Study

SECTION A. Socio-Demographic & Background Variables

Age

Please indicate your age in years

(Note: in the electronic survey participants will indicate their age using a slider bar)

Sport Gender

Please indicate your sport gender, that is, the gender category you compete in in your sport.

- Female Male

Sport Level

What is the highest level of competition you have participated in?

- Olympic or Paralympic Games
- World and/or European Championship
- National Championship
- Regional or local events

Type of sport

Is your main sport individual (e.g., track-and-field; boxing; weightlifting) or team-based (e.g., cricket; rugby; football)?

- Individual sport
- Team sport

Years of practising sport

For how many years have you been practising your current (main) sport?

(Note: in the electronic survey participants will provide their answer using a slider bar)

Exposure to clean sport education

Have you ever received clean sport education from your National Anti-Doping Organisation or another organisation (e.g., international federation, national governing body, etc.)?

No Yes

SECTION B. Psychological Constructs

Moral Values Questionnaire (YSVQ-2; Lee et al., 2008)

What is important to you in sport? Please circle one of the numbers beside each item to show how important it is to you in your main sport.

Moral Values	<i>This idea is...</i>
<i>I do what I am told</i>	...extremely important to me (5) ...very important to me (4) ...important to me (3) ...quite important to me (2) ...slightly important to me (1) ...not important to me (0) ... the opposite of what I believe (-1)
<i>I show good sportsmanship</i>	...extremely important to me (5) ...very important to me (4) ...important to me (3) ...quite important to me (2) ...slightly important to me (1) ...not important to me (0)

	<p>... the opposite of what I believe (-1)</p>
<i>I help people when they need it</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I always play properly</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I try to be fair</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p>

	<p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>Competence Values</i>	<i>This idea is...</i>
<i>I become a better player</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I use my skills well</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p>

	... the opposite of what I believe (-1)
<i>I set my own targets</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I improve my performance</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>Status Values</i>	<i>This idea is...</i>
<i>I show that I am better than others</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p>

	<p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I am a leader in the group</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>
<i>I win or beat others</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p>

	... the opposite of what I believe (-1)
<i>I look good</i>	<p>...extremely important to me (5)</p> <p>...very important to me (4)</p> <p>...important to me (3)</p> <p>...quite important to me (2)</p> <p>...slightly important to me (1)</p> <p>...not important to me (0)</p> <p>... the opposite of what I believe (-1)</p>

Acceptance of Gamesmanship

1. I sometimes try to wind up the opposition
2. It is not against the rules to psych people out so it's ok to do so
3. Sometimes I waste time to unsettle the opposition
4. If I don't want another person to do well then I put them off a bit
5. It is a good idea to upset your opponent
6. I would never psych anybody out*
7. It is understandable that players swear in the heat of the moment

Moral Emotions towards Doping

(Donovan et al., 2015; Petrou et al., 2022)

If you were caught using prohibited doping substances or methods, to what extent would you experience each of the following feelings?

	<i>Not at</i>		<i>A great</i>		
	<i>all</i>		<i>extent</i>		
	1	2	3	4	5
Shame	<input type="checkbox"/>				
Guilt	<input type="checkbox"/>				
Embarrassment	<input type="checkbox"/>				
Anger	<input type="checkbox"/>				
Regret	<input type="checkbox"/>				

Doping Likelihood (Kavussanu & Ring, 2017; Ring et al., 2020)

Performance Enhancement Scenario

“It is the day before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team, and they are just one point ahead of your team in the league. Lately, your performance has been below your best. You don’t feel you have the necessary fitness for this important game, and you are concerned about how you will perform. You mention this to one of your teammates, who tells you that he/she has been using a new substance, which has enhanced his/her fitness and, as a result, his/her performance. The substance is banned for use in sport, but the chance that you will be caught is extremely small.”

How likely it is that you would use the banned substance?

1	2	3	4	5	6	7
<i>Not at</i>						<i>Very</i>
<i>all likely</i>						<i>Likely</i>

Injury Recovery Scenario

“It is two weeks before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team and they are just one point ahead of your team in the league. You really want to play in this game. However, two months ago, you sustained a knee injury, and you know you need at least one more month of rehabilitation to fully recover. One of your teammates tells you that he/she has recently used a new substance, which has helped him/her recover faster than usual from a knee injury. The substance is banned for use in sport, but the chance that you will be caught is extremely small.”

How likely it is that you would use the banned substance?

1	2	3	4	5	6	7
<i>Not at</i>						<i>Very</i>
<i>all likely</i>						<i>Likely</i>

SECTION C. Clean Sport Behavioural Outcomes

Anti-Doping Rule Violations

Please read the list below and provide your answers as honestly as possible, remembering that this survey is completely anonymous and that there is no way that you someone can identify you from your responses.

During your career in sport, how often have you engaged in the following behaviours or found yourself in the following circumstances?

	Never	Rarely	Sometimes	Often	Very often
	1	2	3	4	5
Use or attempted use of prohibited doping substances or methods	<input type="checkbox"/>				
Evaded, refused, or failed to submit sample collection	<input type="checkbox"/>				
Whereabouts failures (i.e., missed test, and/or whereabouts filing failures)	<input type="checkbox"/>				

Tampered or attempted tampering of prohibited doping substances or methods	<input type="checkbox"/>				
Trafficked or attempted trafficking of prohibited doping substances or methods	<input type="checkbox"/>				
Administered or attempted to administer to any athlete of any prohibited substances or methods	<input type="checkbox"/>				
Possessed prohibited substances	<input type="checkbox"/>				
Assisted, encouraged, aided, abetted, conspired, covered up or any other type of intentional complicity involving an anti-doping rule violation (ADRV) or any attempted ADRV	<input type="checkbox"/>				
Associated in sport-related capacity with a person such as a coach, doctor, physio or trainer who is serving a ban or who has been found guilty of a criminal or disciplinary offence equivalent to a doping violation	<input type="checkbox"/>				
Discouraged or retaliated against reporting doping misconduct to authorities	<input type="checkbox"/>				

Do you know athletes who have done anything of the above?

No Yes

Have you ever tested positive for the use of prohibited doping substances in the context of doping control?

No Yes **OR** I was never been tested in a doping control

Likelihood to Report Doping Misconduct

Whistleblowing against doping misconduct is defined as the disclosure of sensitive information about athletes and/or their entourage (e.g., coaches, managers, and trainers) with respect to any suspected:

- Anti-Doping Rule Violation
- World Anti-Doping Code (Code) non-compliance violation
- Act or omission that could undermine the fight against doping.

Anyone can report a doping misconduct, if they have detected, identified, witnessed or know of, or have reasonable grounds for suspecting that doping misconduct has occurred.

With this definition in mind, please respond to the following questions about your likelihood to report doping misconduct in different situations.

Please use the following response grid to provide your answers.

Very unlikely		I am unsure		Very likely
1	2	3	4	5

Vignette 1

You are preparing for an important competition and you find out that an athlete from your team is involved in the trafficking of prohibited doping substances. You have the opportunity to report the misconduct **anonymously** and with **full protection of your identity**. **How likely are you to report the doping misconduct?** (NOTE: if you compete in an individual sport, reply to this question thinking of athletes on the same training group with you or under the same coach).

Very unlikely		I am unsure		Very likely
1	2	3	4	5

Vignette 2

You are preparing for an important competition and you find out that an athlete from another team is involved in the trafficking of prohibited doping substances. You have the opportunity to report the misconduct **anonymously** and with **full protection of your identity**. **How likely are you to report the doping misconduct?** (NOTE: if you compete in an individual sport, reply to this question thinking of other athletes in your sport, under a different coach than yours).

Vignette 3

You are preparing for an important competition and you find out that your coach is involved in the trafficking of prohibited doping substances. You have the opportunity to report the misconduct **anonymously** and **without anyone knowing** about your identity and your report.

How likely are you to report the doping misconduct?

Very unlikely		I am unsure		Very likely
1	2	3	4	5

Vignette 3

You are preparing for an important competition and you find out that a coach from another team is involved in the trafficking of prohibited doping substances. You have the opportunity to report the misconduct **anonymously** and with **full protection of your identity**. **How likely are you to report the doping misconduct?** (NOTE: if you compete in an individual sport, reply to this question thinking of coaches of other athletes in your sport).

Very unlikely		I am unsure		Very likely
1	2	3	4	5
