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Values and clean sport

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Values and Clean Sport

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Response to Reviewers:	Robin Jackson BSS Associate Editor Journal of Sports Sciences Ref: Ms. No. RJSP-2020-0872R1 Title: Values and Clean Sport Dear Dr Jackson We would like to thank you for your guidance. Our revised manuscript is attached. Editor Reviewers have now commented on your paper. You will see that they are advising that the paper be accepted for publication. Before we can accept the paper, please provide details of your power analysis. •We have added our power analysis to the Participants section of our manuscript (P 9, L 5-8). Reviewer #2: The authors responded to all of my comments in an adequate way and I support publishing the manuscript in its current form. •Thank-you. Reviewer #4: Thank you for your diligence and willingness to take on suggestions from the Reviewers. I am satisfied with the additional information and changes made in response to my comments. •Thank-you Executive Editor:

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Values and clean sport

KEYWORDS: doping; psychology; sport

ABSTRACT

The *spirit of sport* which encompasses intrinsic values associated with sport participation, is core to the World Anti-Doping Agency's (WADA) strategy for doping prevention. The contribution of these values in clean sport has yet to be established. In this study, athletes rated the importance of *spirit of sport* values (WADA, 2015) and sport values (Lee et al., 2000, 2008) and indicated their clean sport likelihood in a hypothetical scenario. Clean sport likelihood was positively predicted by the five *spirit of sport* values (ethics/fair play/honesty, respect for rules/laws, dedication/commitment, teamwork, community/solidarity), two sport value domains (morality, competence), and 11 sport values (contract maintenance, being fair, conscientiousness, sportspersonship, show skills, health/fitness, caring/compassion, team cohesion, achievement, tolerance, obedience). Clean sport likelihood was best predicted by moral values.

Introduction

The use of prohibited substances and methods to improve performance in sport, also known as doping, constitutes a form of cheating by breaking the rules of sport to gain an unfair advantage violates the *spirit of sport* (WADA, 2015) and personal moral standards (e.g., Backhouse et al., 2016; Donovan et al., 2002; Engelberg et al., 2015; Murray, 2018). Although doping has attracted attention from psychologists aiming to understand the reasons why athletes intentionally use banned performance-enhancing substances and methods (for reviews see Blank et al., 2016; Morente-Sanchez & Zabala, 2013; Ntoumanis et al., 2014), there is limited research on doping in relation to values. Values, which act as guiding principles in a person's life, are key elements of the *spirit of sport* (WADA, 2015) and core components of recent clean sport educational programs, such as *TrueSport* (USADA, 2012), *100% ME* (UKAD, 2018), and *Sport Values in Every Classroom* (WADA, 2019a). However, the assumption that the *spirit of sport* construct and values are important for anti-doping and thus predict clean sport behavior is awaiting empirical support (for reviews see Geeraets, 2017; Mazanov et al., 2019; Obasa & Bory, 2019; Ritchie, 2013).

Spirit of sport values

The desire to foster intrinsic values associated with participation in sport underpins WADA's anti-doping strategy. The WADA Code 2015 (p. 14) states that "*Anti-doping programs seek to preserve what is intrinsically valuable about sport. This intrinsic value is often referred to as the spirit of sport. … The spirit of sport is reflected in values we find in and through sport, including: ethics, fair play and honesty; health; excellence in performance; character and education; fun and joy; teamwork; dedication and commitment; respect for rules and laws; respect for self and other participants; courage; community and solidarity. Doping is fundamentally contrary to the spirit of sport*".

The *spirit of sport* is a cornerstone of anti-doping policy. The WADA Code 2015 (p. 30) states "*A substance or method shall be considered for inclusion on the Prohibited List if WADA determines that the substance or method meets any two of the following three criteria*" ... where the third criterion is ... "*use of the substance or method violates the spirit of sport*". Despite the prominence of the *spirit of sport* values in anti-doping policy, the importance of these values to athletes and their relationships to clean (drug-free) sport have yet to be established (cf., Mazanov & Huybers, 2016; Mazanov et al., 2019; Pugh & Pugh, 2020). Mazanov and colleagues (Mazanov & Huybers, 2016; Mazanov, et al., 2019) have taken some preliminary steps towards establishing how athletes and non-athletes understand the relative importance of *spirit of sport* values to sport in general and the *spirit of sport* construct. However, the relationship between the importance of *spirit of sport* values and clean sport behavior has yet to be established. Accordingly, the current study was designed to shed light on WADA's *spirit of sport* values in relation to athletes deciding whether to compete clean (i.e., avoid using an illicit drug) in a situation with many incentives and no constraints. In brief, we assessed the importance of *spirit of sport* values to athletes personally rather than their perceived importance to sport in general (cf. Mazanov & Huybers, 2016; Mazanov, et al., 2019).

Sport values

We also examined the relationship between spirit of sport values and Lee's sport values (Lee & Cockman, 1995; Lee, et al., 2000, 2008) which are based on the Schwartz (1992) theory of human values. Schwartz's (1992) theory of universal human values built on Rokeach (1973), who identified *personal values*[1] *as* an individual's central beliefs about which goals or modes of conduct are preferable to alternatives. Values transcend situations and serve as judgment criteria to guide decisions. Rokeach described a value system as the

hierarchy of the relative importance of an individual's values on a continuum. Hence personal values are the appropriate variables to examine in studies of behavior because they prioritize decisions. They are likely to be related to clean sport because they will set the priorities for values, such as winning and fairness, which influence decision-making of competitors.

Lee and Cockman (1995) identifyied 18 discrete personal values that were spontaneously expressed by young competitors in discussions of three moral dilemmas in their own sport (football or tennis). Lee et al (2000) then employed qualitative methods to select suitable proxy items for these values and ensure that they were comprehensible. They constructed the Youth Sport Value Questionnaire (YSVQ) to assess the value system of young competitors across age, gender and sport type. A Canadian replication (MacLean & Hamm, 2008), which included an older sample, confirmed that the set of items was comprehensive. International replication confirmed broad consistency at the extremes of the hierarchy with national variation in the intermediate ranks (Gonçalves & Whitehead, 2013). In the present study our measurement of these 18 individual sport values supplements our measurement of the 11 individual *spirit of sport* values.

The Youth Sport Values Questionnaire-2 (YSVQ-2) was developed by Lee et al (2008) identified three higher order sport value domains: moral values (fairness, helpfulness, contract maintenance, obedience, sportspersonship), competence values (achievement, showing skill, self-direction), and status values (winning, superiority, leadership, public image). This model demonstrated a good confirmatory factor analysis fit with factor invariance across gender and nations (Hatzigeorgiadis & Whitehead (2013). Lee et al (2008) found that moral sport values negatively predicted attitudes to cheating and gamesmanship. This key finding has been replicated many times (Ádell, et al., 2019; Chan et al, 2013; Fukami et al, 2012; Gymnopoulou & Vatali, 2010; Lucidi et al, 2017; Stupuris, et al., 2013). Moral

sport values have also predicted other moral variables, including moral disengagement (Šukys & Jansonienė, 2012), antisocial behaviour (Koumeli & Vitali, 2011; Šukys, 2010), and observed cheating behaviour (Lucidi et al, 2017) in sport.

No studies, to our knowledge, have examined the relationship between sport values and clean sport. However, there is preliminary evidence tha non-sport moral values are negatively associated with doping likelihood (Ring & Hurst, 2019; Ring, Kavussanu, & Gürpınar, 2020; Ring, Kavussanu, & Mazanov, 2019). Moreover, the values of respect for rules/officials and social conventions in sport values are negatively associated with doping behavior (Donahue et al., 2006) and intention (Barkoukis et al., 2011). Hence, we expected moral values in sport to be positively associated with clean sport.

Clean sport

It has been argued that the anti-doping deterrence approach cannot eliminate doping (Bowers & Paternoster, 2016), and, instead, anti-doping programs should adopt a preventative approach and promote healthy behavior and competition (e.g., Englar-Carlson et al., 2016). A positive approach to prevention is an emerging theme in the anti-doping strategies of national and international organizations (WADA, 2015). For instance, the *TrueSport* program is a values-based educational program, undergirded by three core principles (character building, sportsmanship, clean and healthy performance) and five values (integrity, respect, courage, responsibility, teamwork), that seeks to promote a positive sport experience (USADA, 2012). Similarly, the *100% Me* program is a values-based educational program, grounded on five values (integrity, respect, determination, enjoyment, passion), that seeks to promote clean sport (UKAD, 2018).

Most psychosocial research on doping in sport has focused on identifying predictors of doping (Blank et al., 2016; Morente-Sanchez & Zabala, 2013; Ntoumanis et al., 2014).

Surprisingly, only a handful of studies (e.g., Bowers & Paternoster, 2016; Chan, Hardcastle, et al., 2015; Chan, Lentillon-Kaestner, et al., 2015; Englar-Carlson et al., 2016) have investigated the role of psychosocial factors in relation to doping *avoidance*, or the active non-use of doping substances and methods when competing in sport. These studies thus represent agentive non-doping. A similar construct is that of clean sport.

A definition of clean sport has yet to be agreed upon by the anti-doping community. According to New Zealand's anti-doping agency "*clean sport means athletes: compete on a level playing field; are rewarded for their hard-work, talent and skills; value the spirit of sport; respect and look after their bodies and their health; follow the anti-doping rules; and understand the importance of a drug testing regime to catch cheats and protect clean athletes*" (Drug Free Sport New Zealand, 2020). The United States' anti-doping agency states that "*clean competition means reaching athletic potential through proper training, nutrition and rest, not through powders, pills and energy drinks*" (USADA, 2012). Finally, the Clean Sport Alliance (2019) defines clean sport as "*values: competing with integrity, morality, honesty and fairness*". It is reasonable to assume that anti-doping programs, policies and practices can be helped by evidence about what underpins clean sport for athletes. In this study, we focused on investigating the extent to which the likelihood that athletes would compete clean in a tempting hypothetical situation was related to their values.

Present study

The policies and practices of international and national anti-doping agencies afford values a key role in their anti-doping activities and programs. Currently, there is no empirical evidence linking the *spirit of sport* values with clean sport. Fortunately, it is possible to draw upon evidence that links sport values to other forms of unethical thoughts and actions, such as attitudes to cheating. Based on this literature, it may be expected that the *spirit of sport*

values will be linked with decision to compete clean and reject drug use (i.e., clean sport likelihood).

The present study is the first, to our knowledge, to investigate the role of *spirit of sport* and sport values in relation to clean sport. We asked athletes to rate the importance of WADA's *spirit of sport* values as a guiding principle in their life as an athlete, rate the importance of Lee's (2000, 2008) sport values, and rate their likelihood of competing clean in sport. It had three purposes. The first study purpose was to examine the relationships between the *spirit of sport* values and clean sport likelihood. The second study purpose was to examine the relationships between sport values and clean sport likelihood. The third study purpose was to evaluate the extent of the relationship between the *spirit of sport* construct and the sport value domain constructs (i.e., convergent validity).

Method

Participants

Participants were 233 (91 males, 139 females) university athletes competing in team (n = 185, 79%) and individual (n = 48, 21%) sports in the UK. The team sports included American football, basketball, cricket, football and netball, whereas the individual sports included athletics, badminton, martial arts and swimming. At the time of data collection, the athletes, who were aged between 18 and 25 years, had competed in their sport for 8.95 (SD = 7.46) years. Their highest ever competitive standard in their sport was international (7%), national (12%), regional (29%), club (43%), and university (17%).

Participants were recruited from sport clubs at the University of Birmingham, UK. We chose to sample university student-athletes since substance use in this population is now widely recognized (e.g., Erickson et al., 2019; Yusko et al., 2008). In the UK, these athletes compete in events organized by the British Universities and Colleges Sport (BUCS), a

UKAD- and WADA- compliant organization. For instance, UKAD manages the Clean Sport Accreditation for Universities, organizes anti-doping controls at BUCS events, and trains anti-doping educators who provide Clean Sport education for student athletes at British universities.

The GPower 3.1.5 (Faul et al., 2007) software indicated that with a sample size of 233, our study was powered at .80 to detect significant ($p < .05$) relationships between values and clean sport likelihood using Pearson correlation analyses corresponding to a small-to-medium ($r = .19$) effect size (Cohen, 1992).

Measures

Clean sport likelihood. Clean sport likelihood was measured using a hypothetical scenario describing key temptations to dope identified by previous research (e.g., Huybers, & Mazanov, 2012; Ring, et al., 2018, 2019a; Strelan & Boeckmann, 2006). Participants were presented with the following description: "*Imagine that you are an athlete who is due to compete in the most important competition in your sport (e.g. Olympic Games, World Cup, Major Tournament). Winning the competition and being recognized as the most valuable competitor at the event will earn you great fame and fortune (e.g. cash, sponsorship, endorsements, TV deals, awards, book deals, publicity, public adoration), making you the most important athlete of your generation. The only way to make this happen is to take a magic pill that will make you perform like a superhuman athlete during the competition. You should also know that use of this illicit drug will never be detected and will never have any health side effects."* Participants were then asked "how likely are you to compete clean (i.e., drug free)" and provided a rating on a 7-point scale anchored by 1 (not at all likely) and 7 (very likely), and "how probable is it that you would compete clean (i.e., drug free) and provided a rating on a 7-point scale anchored by 1 (not at all probable) and 7 (very probable). We used two ratings to increase measurement

reliability. The two ratings, which were positively correlated (r = .85, p < .001), were averaged (α = .92), to provide a measure of clean sport likelihood.

Spirit of sport values. The importance of the *spirit of sport* values was measured by presenting participants with WADA's (2015) 11 *spirit of sport* values: *ethics, fair play and honesty; health; excellence in performance; character and education; fun and joy; teamwork; dedication and commitment; respect for rules and laws; respect for self and other participants; courage; community and solidarity*. They were instructed to "Read each value and think about how important it is to you in competitive sport. Rate the importance of each value as a guiding principle in your life as an athlete". They rated the importance of each value on a 9-point scale, with anchors of -1 (opposed to my values), 0 (not important), 5 (important), 6 (very important), and 7 (of supreme importance). This type of asymmetrical scale, which is recommended by Schwartz (1992) for measuring the importance of personal values,[2] because it allows for disagreement with some values, has been used by values researchers to assess the importance of individual values (e.g., Lee et al., 2000). The use of this scale also facilitated a comparison of the importance of personal values drawn from both *spirit of sport* and sport contexts. We computed the mean of the 11 ratings as measure of the importance of the *spirit of sport* values (α = .82).

Sport values. Portrait versions of the Youth Sport Values Questionnaire (YSVQ, Lee, et al., 2000) and Youth Sport Values Questionnaire-2 (YSVQ-2; Lee, et al., 2008) were used to measure 18 individual sport values and 3 sport value domains, respectively. The portrait scale format was developed by Schwartz to measure values more concretely and easily (Roccas, Sagiv, & Navon, 2017). Participants were presented with descriptions of the values of different athletes and told to think about how much they were or were not like them. They were asked to rate descriptions (e.g., *"It is important to them that they win or beat other people"*, "*It is important to them that they try to be fair", "It is important to them that they improve*

their performance"), using a 6-point scale, anchored by 1 (not like me at all) and 6 (very much like me).[1] The items were phrased in the third person in a portrait format as used by Schwartz (2012) to measure basic values indirectly. The YSVQ comprises single items measuring 18 discrete values whereas the YSVQ-2 comprises 13 items measuring three value domains: competence, moral, and status. In the present study, alpha coefficients for the competence, moral and status value domains were .75, .78 and .59, respectively.

Procedure

Participants were informed about the study, and told that participation was voluntary, honesty in responses was vital, and data would be confidential. After consenting, they completed the measures using an online survey to ensure anonymity.

Data Analysis

Pearson correlations examined the relations between values and clean sport likelihood. The correlation coefficient, *r*, was reported as the effect size, with .10, .30 and .50 reflecting small, medium and large associations (Cohen, 1992). Analysis of variance (ANOVA), with value as the within-participant factor, compared the importance of the different values within each measurement context (i.e., *spirit of sport*, sport). Partial eta-squared (η_p^2) was reported as the effect size, with .02, .13, and .25 reflecting small, medium and large effects (Cohen, 1992). We report the multivariate solution to the ANOVAs. Significant effects were followed by post hoc comparisons (*t* tests). An effect was considered significant when $p < .05$.

Results

Our first study purpose was to examine the relationships between the *spirit of sport* values and clean sport likelihood. Pearson correlations showed that the composite *spirit of sport* construct was positively related to clean sport likelihood, with a small effect size (**Table 1**).[3] Correlations involving the individual *spirit of sport* values (**Table 2**) indicated that five individual values were positively associated with clean sport likelihood. The effect sizes of the relationships were: medium for ethics/fair play/honesty; and small for respect for rules/laws, dedication/commitment, teamwork, and community/solidarity. It is worth noting that three of the four most and least important values were dissociated from the decision to compete clean. Instead, it tended to be the *spirit of sport* values that were of middlemost importance (i.e., ethics/fair play/honesty, respect for rules/laws) that were most closely associated with clean sport likelihood.

Our second study purpose was to examine the relationships between sport values and clean sport likelihood. Pearson correlations showed that moral values were positively related (medium effect), competence values were positively related (small effect), and status values were unrelated (no effect) to clean sport likelihood (**Table 1**). Correlations involving the individual sport values (**Table 3**) revealed that 11 values were positively associated with clean sport likelihood. The effect sizes of the relationships were: medium for contract maintenance and being fair; and small for conscientiousness, sportspersonship, show skills, health/fitness, caring/compassion, team cohesion and achievement, tolerance, and obedience.

Our third study purpose was to investigate the convergent validity of the *spirit of sport* construct by examining its relationship with sport values (**Table 1**). Pearson correlations indicated that the *spirit of sport* construct was positively related with all three sport value domains, with the effects sizes being medium for moral and competence values but small for status values.

Discussion

Our study investigated whether *spirit of sport* values and sport values were associated with clean (drug-free) sport likelihood. Our purposes were to examine the relationships between *spirit of sport* values, sport values, and clean sport likelihood.

Spirit of sport values

Our first study purpose was to examine the relationship between the *spirit of sport* and clean sport likelihood. The *spirit of sport* was positively associated with clean sport likelihood with a small effect size, thereby providing some, albeit limited, support for the predictive validity of the *spirit of sport* as a construct. To explore this issue further we examined the individual values that make up the *spirit of sport*, and found that only five *spirit of sport* values were associated with higher clean sport likelihood; most were unrelated to clean sport likelihood. The top five *spirit of sport* values, in terms of rank order, were ethics/fair play/honesty, respect for rules/laws, dedication/commitment, teamwork, and community/solidarity.

Exploratory factor analysis of the *spirit of sport* values revealed that a moral factor showed a stronger, albeit still small, correlation with clean sport likelihood than the composite construct (see Supplementary Material). Notably, only a small proportion of variance in clean sport likelihood was accounted for by the composite *spirit of sport* construct (r = .18; 3.2%), but more was explained by a moral factor within the data (r = .22; 4.8%), and the largest proportion was accounted for by the individual value concerning *ethics, honesty, fairplay* (r = .29; 8.4%). These data indicate that it is a mistake to assume that a global constellation of values (i.e., WADA's 11 *spirit of sport* values), with their mixed motivational content, will have a specific influence on clean sport likelihood. In sum, our findings show that clean sport programs should target moral values.

The *spirit of sport* and some intrinsic values of sport, adopted from the Canadian Centre for Ethics in Sport and incorporated into WADA's Anti-Doping Code in 2003, continue to be used by WADA to classify anti-doping violations (Ritchie, 2014). Research has demonstrated that the relative importance of the individual values to the *spirit of sport* construct varies across competitive standards and countries (Mazanov & Huybers, 2016; Mazanov et al., 2019). They found that the three most important values were ethics/fair play/honesty, respect for self and others, and teamwork, whereas the three least important values were courage, performance excellence, and character and education. It is worth noting that their rankings are broadly consistent with the rankings concerning the relative importance of *spirit of sport* values to the life of an athlete (see **Table 2**).

Notably, the current study showed that only a small selection of individual *spirit of sport* values were related to clean sport. Specifically, the most relevant *spirit of sport* values for clean sport were those comprising ethics/fair play/honesty, respect for rules/laws (cf. Barkoukis et al., 2011; Donahue et al., 2006), and dedication/commitment, all of which capture the importance of *moral foundations* (Graham et al., 2011; Hofman et al., 2014) for the athletes. Accordingly, our findings are compatible with the argument that the decision to compete clean is a moral one, and, therefore, for this reason, we conclude that moral values are most important for clean sport.

Sport values

Our second study purpose was to examine the relationship between sport values and clean sport likelihood. At the level of the sport domains, the moral (15%) and competence (4%) values accounted for a cumulative 19% of variance in clean sport likelihood. At the level of individual values, the strongest two relationships with clean sport were for morally-relevant values: contract maintenance and being fair. These values had middle ranks in the sport value

system. As with the *spirit of sport* values, these findings are consistent with our expectation that moral values would relate to clean sport likelihood. In line with the definition of clean sport as competing with integrity, morality, honesty and fairness (Clean Sport Alliance, 2019), the current findings suggest that the decision to avoid drugs and compete clean is a choice informed by moral values.

The hierarchy of individual sport values (**Table 3**) resembles those reported by Lee and colleagues (Lee et al, 2000; Whitehead et al, 2013); the top three values (enjoyment, achievement, sportspersonship) and the bottom two values (conformity, winning) are the same. Indeed, studies have typically found agreement at the extremes of the hierarchy coupled with variation in the intermediate ranks. In line with past evidence (Whitehead et al., 2013), our findings confirm that sport values are important to athletes, and, moreover, that moral and competence values are more important to athletes than status values. This greater importance ascribed to moral sport values may help explain why athletes are likely to compete clean.

We now interpret findings for the sport value domains in relation to the first test in sport of Katz's (1960) *value-expressive theory of attitudes*. Lee et al (2008) hypothesized that moral and competence values would predict prosocial attitudes of respect for sport conventions and commitment to sport participation while moral values (negatively) and status values would predict antisocial attitudes to cheating and gamesmanship. Their path model has generalized to other dependent variables. Our findings extend this model to doping in sport.

Our moral and competence sport values related directly to clean sport likelihood in line with established relationships between moral and competence values, on the one hand, and prosocial attitudes (Fukami et al, 2012; Lee et al, 2008; Whitehead, Lee, & Hatzigeorgiadis, 2002) and prosocial behavior (Sukys, 2010; Stupuris et al, 2013), on the other hand. These

findings suggest that sport values exert similar effects on clean sport and other forms of proactive moral behavior in sport (see Kavussanu & Stanger, 2017).

The status values[4] were not expected to relate to clean sport likelihood; this is because they predict antisocial attitudes and should relate to doping rather than clean sport. The initial finding that status values (positively) and moral values (negatively) predicted antisocial attitudes of cheating and gamesmanship has been replicated (Ádell, Castillo, & Alvarez, 2019; Chan et al, 2013; Fukami et al, 2012; Gymnopoulou & Vatali, 2010; Lucidi et al, 2017; Whitehead, Lee, & Hatzigeorgiadis, 2003).

Research should explore reasons why values exert their putative effect. Lee et al (2008) found that the effects of competence and status values on prosocial and antisocial attitudes were mediated by task and ego orientation, respectively. The inclusion of these goal orientations not only raised the proportion of variance explained in prosocial attitudes but suggested a cognitive mechanism for the effect. That is, competence values, being self-referenced, could promote a task-oriented view of success which in turn promotes prosocial attitudes. Given that the proportion of variance in clean sport likelihood explained by moral values was modest, and that sport is an achievement situation, it would seem appropriate to include task orientation along with prosocial attitudes in predictive models to help explain clean sport likelihood.

Value theory also gives guidance on salient variables to include in value-change interventions. The Schwartz (1992, 2012) circumplex model of value conflict maps intrinsic conflicting and compatible relationships among human values. Bardi and Schwartz (2013) explain how a conflict between the opposing values of winning and fairness may be addressed by promoting a competence value which is both compatible with fairness and of greater importance than winning in the competitor's value system.

Our third study purpose was to examine the relationship between the *spirit of sport* construct and the sport value domains. This construct was related to all three sport value domains, showing it to be a value construct with a somewhat generalized nature. Some conceptually related individual values showed similar relationships with clean sport likelihood. For instance, fun and joy (*spirit of sport*) and enjoyment (sport) showed a very low relationship, while ethics, fair play, honesty (*spirit of sport*) and being fair (sport) had medium relationships.

Implications for anti-doping

The current study found that WADA's *spirit of sport* values did not act as might have been anticipated, insofar as half of them did not relate to clean sport likelihood. However, in line with our own expectations, medium-sized relationships with clean sport likelihood were found for values with moral content. The implication for policy makers in anti-doping organizations is that their educational programs that seek to promote clean sport should identify and focus more on their values with moral content.

A number of national anti-doping organisations explicitly refer to values in their programs, however, it remains to be established whether the values they promote are related to clean sport likelihood. For instance, USADA's (2012) *TrueSport* program mentions respect, integrity, teamwork, courage and responsibility, UKAD's (2018) *100% Me* program mentions respect, integrity, passion, determination and enjoyment, and WADA's (2019a) *Sport Values in Every Classroom* program mentions respect, equity and inclusion.

Respect is mentioned in two of WADA's *spirit of sport* values: respect for rules and laws was positively related to clean sport likelihood, however, respect for self and others was not. Another couple of USADA's values are also *spirit of sport* values: teamwork was positively related whereas courage was unrelated to clean sport likelihood. Moreover,

enjoyment (a sport value) and its synonym (fun and joy, a *spirit of sport* value) were unrelated to clean sport likelihood. It also is possible that the abovementioned anti-doping agencies' stated values may be synonyms for either *spirit of sport* or sport values. However, this only applies to two values. USADA's and UKAD's integrity, is a synonym for honesty and character (two *spirit of sport* values), with only the former positively associated with clean sport likelihood. Finally, UKAD's determination, a synonym for dedication and commitment (a *spirit of sport* value), was positively associated to clean sport likelihood. In sum, our data provide evidence for some but not all values highlighted by these anti-doping agencies. Although values can play a role in the development of new clean sport programs, the selection of specific values to include could be improved by evidence concerning clean sport.

Limitations and future directions

The current findings provide novel insights into the nature of values in sport and their links with clean sport. Nonetheless, they should be interpreted in light of potential study limitations. First, we measured the importance of the *spirit of sport* and sport values in university athletes who are subject to anti-doping controls in their competitions. Although some of these athletes competed at international and national levels, it would be informative to replicate the current findings in top-level competitors, such as elite athletes in professional and non-professional sport, in a variety of countries and cultures (cf., Mazanov et al, 2019). It is possible that the hierarchies of both *spirit of sport* and sport values vary in elite and professional athletes, which, in turn, may influence the relative strength of the relationships between values and clean sport. Second, we only measured one aspect of clean sport, namely, the decision to avoid using a drug to improve performance in a hypothetical scenario and its relation with *spirit of sport* values. Research could assesses the importance of the many other features of clean sport articulated by anti-doping organizations (e.g., Drug

Free Sport New Zealand, 2020; USADA, 2012). Finally, we examined a range of values in sport, however, we did not examine many of the values that have been adopted by sport organizations. It would be interesting to examine the values of other sporting organizations, such as national anti-doping organizations (e.g., UKAD, USADA,) and international sporting agencies (e.g., WADA, IOC), to determine the extent to which their values relate to the *spirit of sport* and clean sport.

Conclusion

Values-based education and doping prevention are key elements of WADA's (2019b) International Standard for Education. Unfortunately, the evidence to guide and inform policy and practice in doping prevention is scarce (e.g., Hurst et al., 2020). Accordingly, we sought to improve understanding of the *spirit of sport* construct in relation to clean sport. We found mixed evidence for the validity of the *spirit of sport*. The convergent validity of the *spirit of sport* construct was supported by its positive correlations with moral and competence sport values domains. Although the predictive validity of the *spirit of sport* construct was supported by its small positive correlation with clean sport likelihood, it accounted for very little variance in clean sport likelihood.[5] Closer inspection of the individual *spirit of sport* values indicated that the importance of ethics, fair play, honesty, respect, dedication and commitment to athletes was able to predict proactive moral action (i.e., higher clean sport likelihood) in the context of doping. Our findings argue that value-based anti-doping educational interventions (WADA, 2019b) could benefit by promoting the importance of moral values in athletes, especially honesty, respect and commitment from the *spirit of sport*, together with key sport values, such as contract maintenance, fairness, conscientiousness, and sportspersonship.

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Notes

1. Rokeach distinguished between two common uses of the term value. He observed that people may say that an object has a value or they may refer to personal values. Sometimes the wider literature considers the merits of sport as if it were an object. WADA appears to take that interpretation when it seeks to preserve what is intrinsically valuable about sport. In this article we focus exclusively on personal values.

2. The questionnaires are available from the corresponding author. We created portrait versions of the questionnaires and used a 6-point rating scale to match the PVQ-RR (Schwartz et al., 2012). We reworded some of the moral value items to militate against potential misunderstanding. The item "*it is important to them that they do what they are told*" correlated poorly (rs = .12 to .17) with the original four moral items and reduced coefficient alpha (α = .65). This item measures obedience (Lee et al., 2000, p. 318), rather than morality, and, therefore, we replaced it with a contract maintenance item from the original YSVQ namely, "*it is important to them that they don't spoil the event or competition*" (Lee et al., 2000, p. 315).

3. After examining our first study purpose, the pattern of correlations suggested that there might be a moral factor in the *spirit of sport* values that would predict clean sport likelihood better than the composite *spirit of sport* construct. Accordingly, we conducted an exploratory factor analysis of the individual *spirit of sport* values (see Table S1, Supplementary Material). Importantly, we found that clean sport likelihood correlated somewhat better with a moral *spirit of sport* factor (r = .22) than the composite *spirit of sport* construct (r = .18).

4. The sport status values correspond conceptually to the basic self-enhancement values of Schwartz (2012). These self-enhancement values have been found by Ring, Kavussanu and Gürpınar (2020) to predict doping likelihood.

5. The *spirit of sport* construct accounted for 3% of the variance in clean sport likelihood. In terms of individual values, the ethics/fair play honesty *spirit of sport* value explained 8%, which is similar to the fairness sport value (8%) but less than the contract maintenance sport value (14%).

Table 1. Descriptive statistics and Pearson correlations between clean sport likelihood, *spirit of sport* values (overall construct), and sport values (core domains).

	M	*SD*	1	2	3	4
1. Clean Sport Likelihood	5.00	1.89	-			
2. *Spirit of Sport* Values	5.16	0.91	.18**	-		
3. Competence Sport Values	5.01	0.68	.20**	.40***	-	
4. Moral Sport Values	5.03	0.67	.39***	.45***	.44***	-
5. Status Sport Values	3.96	0.79	.02	.25***	.36***	.15*

Note: ANOVA (3 sport values) indicated that the sport values differed in their perceived likeness to the person, $F(2, 231) = 193.93$, $p < .001$, $\eta_p^2 = .627$, with moral and competence values judged to be more like the person than status values. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2. Descriptive statistics for individual *spirit of sport* values, similarities with and differences from other *spirit of sport* values, and their Pearson correlations with clean sport likelihood and the overall *spirit of sport* construct.

Individual *Spirit of Sport* Value	*M*	*SD*	*Not Different From*	Clean Sport Likelihood	*Spirit of sport*
1. Health	5.82	1.31	-	.04	.52***
2. Respect for self & others	5.59	1.28	3, 4, 5	.11	.60***
3. Dedication & commitment	5.58	1.46	2, 4, 5	.16**	.69***
4. Fun & joy	5.45	1.50	2, 3, 5, 6	-.02	.47***
5. Teamwork	5.40	1.53	2, 3, 4, 6	.13*	.60***
6. Ethics, fair play, honesty	5.27	1.33	4, 5	.29***	.58***
7. Respect for rules & laws	5.00	1.67	8	.18**	.58***
8. Courage	4.92	1.58	7	.05	.71***
9. Character & education	4.61	1.58	10, 11	.09	.64***
10. Performance excellence	4.59	1.76	9, 11	.00	.50***
11. Community & solidarity	4.48	1.57	9, 10	.13*	.71***

Note: *Spirit of sport* value range = -1 to 7. The individual *spirit of sport* values have been ranked from most important to least important. ANOVA (11 *spirit of sport* values) indicated that the values differed in importance, $F(10, 223) = 34.12$, $p < .001$, $\eta_p^2 = .605$. * $p < .05$, ** $p < .01$, *** $p < .001$. Participants judged that the *spirit of sport* was close to being "*very important*" to them as a guiding principle in their life as an athlete. Every individual *spirit of sport* values was positively correlated (large effect sizes) with the composite *spirit of sport* construct: the three highest correlations were community/solidarity, courage, and dedication/commitment whereas the three lowest correlations were fun/joy, performance excellence, and health.

Table 3. Descriptive statistics for individual sport values (Lee et al., 2000), similarities with and differences from other sport values, and their Pearson correlations with clean sport likelihood.

Individual Sport Value	*M*	*SD*	*Not Different From*	Clean Sport Likelihood
1. Enjoyment	5.32	0.86	2	.05
2. Achievement	5.21	0.81	1, 3, 4	.18**
3. Sportspersonship	5.19	0.89	2, 4	.25***
4. Caring/compassion	5.17	0.80	2, 3	.20**
5. Self-actualization	5.02	0.95	6, 7, 8, 9, 10	.01
6. Show skills	5.01	0.97	5, 7, 8, 9, 10	.25***
7. Conscientiousness	4.97	1.00	5, 6, 8, 9, 10	.25***
8. Contract maintenance	4.97	0.87	5, 6, 7, 9, 10	.38***
9. Companionship	4.92	1.00	5, 6, 7, 8, 10, 11	.06
10. Being fair	4.88	0.99	5, 6, 7, 8, 9, 11, 12	.29***
11. Health & fitness	4.81	1.02	9, 10, 12, 13, 14	.21***
12. Team cohesion	4.77	1.00	10, 11, 13, 14	.19**
13. Excitement	4.69	0.98	11, 12, 14, 15	.09
14. Tolerance	4.67	0.88	12, 13, 15	.14*
15. Public image	4.57	1.11	13, 14	.06
16. Obedience	3.92	1.13	-	.13*
17. Conformity	2.99	1.24	18	-.08
18. Winning	2.92	1.37	17	-.09

Note: Sport value range = 1 to 6. The individual sport values have been ranked from most important to least important. ANOVA (18 sport values) indicated that the values differed in importance, $F(17, 216) = 47.73$, $p < .001$, $\eta_p^2 = .790$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Supplementary Material

Table S1. Exploratory factor analysis of *spirit of sport* values and factor correlations with clean sport likelihood

Spirit of sport Value	Factor 1	Factor 2	Factor 3
Ethics, fair play, honesty	.008	-.533	.188
Health	.251	-.149	.168
Character & education	.575	-.033	.153
Teamwork	.143	-.152	.389
Dedication & commitment	.521	-.459	-.085
Respect for rules & laws	-0.31	-.941	-.101
Respect for self & others	-.111	-.400	.474
Courage	.472	-.072	.348
Community & solidarity	.334	.027	.584
Performance excellence	.741	.104	-.077
Fun & joy	-.036	.041	.564
Factor correlation matrix			
Factor 1	-		
Factor 2	-.299	-	
Factor 3	.390	-.439	-
Correlation with clean sport likelihood	.095	.221**	.143*

Note: * $p < .05$, ** $p < .01$

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Values and clean sport

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