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Development of moral disengagement and self-regulatory efficacy assessments relevant to doping in sport and exercise

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ABSTRACT

Objectives: To develop Moral Disengagement (MD) and Self-Regulatory Efficacy (SRE) instruments relevant to doping in sport and exercise and provide evidence for the validity and reliability of instrument scores.
Design: Cross-sectional, correlational.
Methods: Data were collected from male and female team- and individual-sport athletes and corporate- and bodybuilding-gym exercisers. Two samples ($n_{sample\ 1}$ = 318; $n_{sample\ 2}$ = 300) were utilized in instrument development and score validation and another ($n_{sample\ 3}$ = 101) in examining test-retest reliability and stability of scores. Samples 1 and 2 responded to the newly developed items alongside others assessing theoretically-related variables, whereas Sample 3 completed the new instruments on two separate occasions.
Results: Factor analyses identified the final items and dimensional structures for the Doping Moral Disengagement Scale (DMDS), Doping Moral Disengagement Scale–Short (DMDS–S) and Doping Self-Regulatory Efficacy Scale (DSRES). The DMDS has six lower- and one higher-order factor, whereas the DMDS-S and DSRES are unidimensional. These structures were invariant by sex and sport/exercise context. Evidence supporting external validity, test-retest reliability, and stability of scores was also provided.
Conclusion: This research developed and provided evidence of score validity and internal consistency for three instruments relevant to doping in sport and exercise.

1. Introduction

Performance and Image Enhancing Drug (PIED) use can have detrimental health and legal consequences for athletes and exercisers (McVeigh & Begley, in press; Pope et al., 2013) and is a behavior that raises substantive moral questions (Donovan, Egger, Kapernick, & Mendoza, 2002; Petróczi & Aidman, 2008). Although accurate prevalence rates are difficult to obtain, the estimated prevalence of PIED use in athletes is 5–31% (Momaya, Fawal, & Estes, 2015). In light of this nontrivial prevalence, an important aim for researchers is to understand psychological factors that influence PIED use, also known as doping. Successful pursuit of such understanding requires the development of psychometric instruments that provide valid and reliable scores for variables believed to contribute to doping. Thus, we sought to develop psychometric instruments for assessing two psychological variables of conceptual relevance to doping and validate their scores.

The theoretical framework for the current work was Bandura's (1991) social cognitive theory of morality. Bandura proposed that harmful activities are deterred when people anticipate negative emotional reactions (e.g., guilt) to engaging in them. However, people can reduce or eliminate anticipation of such reactions through any of eight psychosocial mechanisms collectively termed Moral Disengagement (MD). These mechanisms cognitively distort harmful acts, reduce personal accountability for them and/or their consequences, distort/avoid their consequences, or dehumanize or blame the victim of the act (Bandura, 1991). Representing the conditional endorsement of harmful acts, MD may facilitate doping by allowing sport and exercise participants to use PIED without experiencing negative emotional reactions.

Qualitative research has shown that sport and exercise participants who dope demonstrate MD when explaining their doping. For example, Boardley and Grix (2014) conducted semi-structured interviews with nine bodybuilders who had doped. Analysis of the interview data revealed evidence of six of the eight MD mechanisms. Boardley, Grix, and Dewar (2014) expanded this work with 64 male bodybuilders from across England, all with experience of doping. Content analysis again revealed evidence of the same six MD mechanisms. Boardley, Grix, and

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Harkin (2015) extended this line of research by interviewing twelve male team- and individual-sport athletes who had doped; data analysis again revealed the same six MD mechanisms. Therefore, these three studies have provided consistent evidence for use of the same six MD mechanisms across sport and exercise contexts. Further, there is considerable consistency in the way in which sport and exercise participants use these six mechanisms, supporting the potential benefits of developing a single measure of doping MD appropriate for use in both contexts.

Definitions for each of these six MD mechanisms have been provided by Bandura (1991). The first – *moral justification* – occurs when harmful activities are made personally and socially acceptable by portraying how they achieve commendable social or moral purposes. Boardley et al. (2014) found professional bodybuilders used this mechanism to justify PED use by suggesting it allowed them to financially support their families: 'So the ethics were skewed a bit towards putting food on the table, rather than it is ethically right to take these and to do these things' (p.838). The second – *euphemistic labelling* – diminishes the damaging nature of actions through palliative or convoluted language. This mechanism was evidenced in Boardley et al. (2015) by a mixed martial artist identifying use of a euphemistic term to hide the socially unaccepted nature of doping: 'Juice … it kinda hides the fact that they're frowned upon' (p.7). The third – *advantageous comparison* – makes detrimental conduct appear less damaging by comparing the act to more heinous ones. Bodybuilders demonstrate this mechanism when making favorable comparisons between doping and other harmful lifestyle behaviors, as shown by Boardley and Grix (2014): 'Is doing this any worse than someone who goes out and has three or four pints [of beer] every night' (p.9).

The fourth mechanism – *displacement of responsibility* – diminishes personal accountability for harmful behavior or its consequences by proffering the act resulted from social pressures. Boardley et al. (2015) provided an example of this when a swimmer stated: 'Because it wasn't my idea to take them I feel ok about it' (p.7). The fifth – *diffusion of responsibility* – diminishes personal accountability for harmful acts or their outcomes through group decision making or action. This mechanism is most likely to operate in environments where doping is perceived as highly prevalent, as shown by a bodybuilder explaining the impact of such settings: 'The longer I'm here the more keen I am to do stuff I shouldn't really or would never ever of considered' (Boardley & Grix, 2014, p. 8). The final mechanism – *distortion of consequences* – occurs when perpetrators of harmful acts avoid information relating to the harm caused or downplay its significance. Such distortion was evidenced in Boardley et al. (2015) when an American Footballer stated: 'I didn't ever see the people I played against as disadvantaged, we've all got testosterone in our bodies, I just had more' (p.7).

Moral disengagement has also been linked with doping in quantitative research. For instance, researchers have identified positive links between MD, intention to dope, doping likelihood, and reported doping (e.g., Hodge, Hargreaves, Gerrard, & Lonsdale, 2013; Lucidi, Grano, Leone, Lombardo, & Pesce, 2004; Lucidi, Zelli, & Mallia, 2013; Lucidi et al., 2008; Ring & Kavussanu, 2018) using cross-sectional and longitudinal designs. Although these studies provide support for the potential importance of MD to doping in sport, prevalence rates for doping were either low or not assessed. Also, to date researchers have not individually examined the importance of the six relevant MD mechanisms in doping research.

Another variable from Bandura's (1991) theory that has been empirically linked with doping is self-regulatory efficacy (SRE; Lucidi et al., 2008). Self-regulatory efficacy reflects the belief in one's capabilities to resist personal and social pressures to engage in harmful conduct (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001), and increases in SRE should lead to less frequent engagement in such behavior (Bandura, 1991). This is because SRE should increase one's ability to resist temptations and inducements to transgress. When applied to doping, SRE represents a person's belief in his/her ability to forbear personal and social pressures to dope. Athletes with elevated levels of doping SRE should be able to resist pressures to dope as they are able to foresee the potential negative consequences of doping and formulate alternative – licit – means of enhancing performance. In accord with this theorizing, Lucidi et al. (2008) and Ring and Kavussanu (2018), respectively, found negative associations between doping SRE and intention to dope and doping likelihood, in research with university students.

Although Lucidi et al. (2008) developed psychometric instruments to assess doping MD and doping SRE, several concerns exist regarding the development of these instruments. One concern relates to the item-development process. Specifically, items were developed based on interviews with 35 high-school students who played sport. However, no information was provided as to whether any of these students had any experience with doping. During these interviews, participants were asked to list situations in which (a) doping would or should not be completely condemned (i.e., to inform doping MD items) and (b) doping would be more likely (i.e., to inform doping SRE items). For the MD measure, the frequencies of common situations were then summed and categorized into the MD mechanisms evoked, leading to the selection of 21 items. Six of these items were then selected for use in the doping MD measure; no information was provided on the process through which items were selected. For the SRE measure, the researchers only described how 10 items were developed based on situations described during the interviews. Thus, items for the two instruments were: (a) developed based on interviews with sport participants with unknown experience of doping when psychometric instruments should be developed using samples representative of intended end users (Clark & Watson, 1995), (b) not appraised for content validity when this should be a key aspect of item development (Haynes, Richard, & Kubany, 1995), and (c) selected based on unknown criteria. Finally, the factor structure of neither instrument was appropriately examined, nor confirmed in a second sample (see Fabrigar, Wegener, MacCallum, & Strahan, 1999).

Kavussanu, Hatzigeorgiadis, Elbe, and Ring (2016) also developed a measure of doping MD, following a more rigorous development process than Lucidi et al. (2008). This scale – the Moral Disengagement in Doping Scale (MDDS) – was developed across three studies with team and individual sport athletes, and evidence supporting the validity and reliability of scale scores was provided. The MDDS is a six-item unidimensional scale assessing doping MD in team and individual sport. However, it should be acknowledged that different versions of the scale are used to assess doping MD in team compared to individual sport. This is potentially problematic for research making comparisons between team- and individual-sport athletes as score comparisons may be confounded by differences in item content.

Although the above measures[1] exist to assess doping MD and doping SRE, there are several ways in which assessment of these constructs could be further developed. First, although doping is an issue in exercise as well as sport (see Sjöqvist, Garle, & Rane, 2008), there are currently no instruments available to assess doping MD and doping SRE in exercise populations. This is particularly concerning when one considers doping in exercisers is considered a public health issue (see McVeigh & Begley, in press; Pope et al., 2013). Thus, there is a need for the development of instruments assessing doping MD and doping SRE in exercise populations.

As exercise in gymnasia is often part of the training process in sport (i.e., strength and conditioning), many sportspersons frequently interact with exercisers as part of their preparatory activities. Given this, and the suggestion that MD is socially transmitted (see Bandura, 1991), it is perhaps not surprising that research has demonstrated considerable

[1] Mallia et al. (2016) also developed measures assessing doping MD and doping SRE. However, as these instruments were designed to capture team rather than individual assessments of these constructs, a detailed review of their development and properties is not included here.