

# The 'selves' in banned performance enhancement

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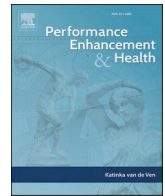
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## Research Paper

## The 'selves' in banned performance enhancement: Investigating narcissism and compassion in the context of doping

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## ABSTRACT

Intentional doping is a goal-directed behaviour influenced by a range of psychological factors, potentially including personality traits. However, to date, understanding of how the selves may influence use of banned performance enhancing substances and methods is scarce. To our knowledge, this is the first study to examine two opposing self-concepts, *narcissism* (i.e., a willingness to construct and maintain a positive self-image) and *self-compassion* (i.e., action to approach and accept a negative self or related distress in a peaceful mind), in the context of doping. In a sample of 178 competitive athletes ( $M$  age = 24.44,  $M$  years of training = 7.1), we examined both grandiose and vulnerable aspects of narcissism, self-compassion, fears of compassion, and their interactions in relation to doping moral disengagement, doping self-regulatory efficacy, and doping willingness. We found athletes high in either grandiose, vulnerable, or both aspects of narcissism were at risk for intentional doping, whereas a low-low combination was the lowest in such risk. High self-compassion mitigated the relationships between grandiose narcissism and doping moral disengagement and between vulnerable narcissism and doping willingness, regardless of whether participants were fearful of feelings of self-compassion. However, self-compassion was associated with higher doping willingness for individuals high in vulnerable narcissism when fear of compassion expressed by others was high but doping willingness was lower in the same group when fear of compassion from others was low. These findings offer new insights into narcissism-related doping risks and highlight the potential practical benefits of compassion-focused interventions to reduce doping risks.

Recent research has been calling for attention to addressing psychological drivers of intentional doping or use of banned substances for performance enhancement (Boardley, Chandler, Backhouse & Petróczi, 2021; Gatterer et al., 2020; Hurst, Ring & Kavussanu, 2020; Petróczi & Aidman, 2008). One important psychological underpinning that has been largely overlooked in the context of doping is personality or the role of selves (Nicholls, Madigan, Backhouse & Levy, 2017). In the present research, we focused on the role of two opposing self-concepts, namely narcissism (i.e., maintaining and constructing positive self-image; Morf & Rhodewalt, 2001) and self-compassion (i.e., taking a kind and non-evaluative attitude towards the negative self; Neff, 2003). This is because narcissism and self-compassion have been conceptualised as two different attitudes towards or ways of approaching oneself (Neff & Vonk, 2009), and evidence suggests that self-compassion attenuates people's maladaptive, antagonistic reactions to negative events or unpleasant emotions in ways that are distinctive to and more beneficial than narcissism (Leary, Tate, Adams, Allen & Hancock, 2007).

As such, while athletes' narcissistic traits may arguably be difficult to change (Chopik & Grimm, 2019), any associated doping risk may be alleviated by self-compassion because it can help athletes recuperate and re-engage in routine training and competition rather than choosing to take banned substances when faced with challenging circumstances. Despite its relevance and importance, the two opposing self-concepts have not yet received research attention in the context of doping. Therefore, through the current research we aimed to address this lack of knowledge by conducting an initial investigation of these two psychological factors and how they relate to doping-relevant outcomes.

## 1. Narcissism as a risk

Narcissism is generally recognised as a subclinical personality trait that is characterised by self-importance, self-centredness, and a tendency to seek self-enhancement to maintain a (overly) positive self-image (Morf, Horvath & Torchetti, 2011). In pursuit of such

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self-enhancement, athletes high in narcissism may be less likely to confirm with fair play norms and are therefore be more likely to cheat (Brunell, Staats, Barden & Hupp, 2011) and take risks (Foster, Shenese & Goff, 2009) to gain an unfair advantage over competitors. Given that doping or the intentional use of banned substances for performance enhancement is a goal-directed behaviour (Petróczi & Aidman, 2008), one would expect narcissism to be a potential risk factor for doping. This is because athletes with high levels of narcissism desperately seek out opportunities for being an exceptional performer and to beat competitors (e.g., Roberts, Woodman & Sedikides, 2018; Woodman, Roberts, Hardy, Callow & Rogers, 2011; Zhang, Roberts, Woodman & Cooke, 2020), and doping can increase an athlete's work rate to train harder and improve faster, providing a shortcut for them to realise their ambitions. Therefore, individuals high in narcissism may be more likely to intentionally use banned substances for performance enhancement.

However, pioneering work in narcissism and doping has yielded mixed findings, documenting a null relationship between athletes' narcissism and attitudes towards doping in one study (Nicholls et al., 2017) and a positive relationship in another (Nicholls et al., 2019). These inconsistent findings are likely due to inappropriate narcissism conceptualisation and assessment issues. Specifically, Nicholls et al. (2017, 2019) utilised a dark-triad-based measure (Jones & Paulhus, 2014) which views narcissism as a unidimensional and pathological trait that reflects antagonistic personality features such as hostility, callousness, manipulateness, and entitlement. In contrast, narcissism theorists (e.g., Campbell & Miller, 2011; Krizan & Herlache, 2018) have been calling attention to distinguishing narcissistic personality from narcissistic personality disorder and understanding narcissism as a multi-faceted personality that constitutes both grandiose (i.e., the self-aggrandizing aspect of narcissism) and vulnerable (i.e., the fragile aspects of narcissism) manifestations which can exist in one person with different levels of combination (i.e., low-low, high-low, low-high, high-high; see also Weiss & Miller, 2018). Synthesising the definition of narcissism as a multi-faceted non-clinical personality trait (e.g., Krizan & Herlache, 2018; Miller et al., 2011), we adopt the conceptualisation of *grandiose narcissism* as dispositional qualities underpinned by a self-centred, self-aggrandising, entitled, dominant and manipulative orientation, and refer to *vulnerable narcissism* as personal characteristics reflecting hypersensitivity and hypervigilance to criticism, failure and other forms of ego threats for protecting a positive self-image (Weiss & Miller, 2018). Although omitted in doping research to date, investigating both grandiose and vulnerable narcissism should be considered a centrepiece of narcissism research in sport.

## 2. Self-compassion as a protection

In contrast to narcissism that seeks self-enhancement via approach (i.e., grandiose narcissism), defensive (i.e., vulnerable narcissism) or indeed both mechanisms, self-compassion offers a different self-concept that allows an alternative pathway to experience positive emotions or satisfy psychological needs without having to bolster or protect one's (overly) inflated self (Neff, 2003). Indeed, self-compassion reflects a sensitivity to failures, sufferings, or any distressed feelings in oneself, with the motivation and actions to alleviate such unpleasant emotions (Gilbert et al., 2017). In sport, self-compassion involves one's ability to recognise being too critical towards oneself and the acknowledgement of distressed feelings as part of a normal sport experience, which helps athletes gain greater satisfaction (Barczak & Eklund, 2020) and cope better with distress, adversities or setbacks (Frentz, McHugh & Mosewich, 2020). As such, a compassionate mind enables one to take time to re-evaluate and recuperate, and thus training, competition, and other related adversities can be approached with a more accepting and gentler mindset. In support of this view, research has demonstrated that athletes who are self-compassionate demonstrate better mental health and coping skills (e.g., Amemiya & Sakairi, 2020; Ceccarelli, Giuliano, Glazebrook & Strachan, 2019).

In the context of doping, one would expect self-compassion to protect against risks for the use of performance enhancement drugs because it offers a healthier way to achieve self-acceptance and dissolve sport-related distress (Mosewich, Ferguson, McHugh & Kowalski, 2019). However, being compassionate may conflict with the narcissistic needs to recognise oneself as being exceptional. Dominant norms such as the sport ethic (Hughes & Coakley, 1991), which dictates that athletes strive for distinction may make self-compassion less valued, especially amongst those high in narcissism (i.e., either grandiose and/or vulnerable narcissism). As such, one would expect athletes higher in narcissism to be less compassionate towards themselves, and for higher self-compassion to protect against the willingness to use banned substances for performance enhancement.

While self-compassion represents positive emotion and attitudes towards oneself, it is not uncommon for individuals, especially competitive athletes, to fear self-compassion (Ferguson, Kowalski, Mack & Sabiston, 2014; Sutherland et al., 2014; Walton, Baranoff, Gilbert & Kirby, 2020). Fearful feelings towards compassionate minds can involve beliefs that being compassionate reflects self-indulgence and vulnerability, and that one will become weak, unable to cope and fail to fulfil goals or expectations (Gilbert, McEwan, Matos & Rivis, 2011). In sport, self-compassion seems to conflict with traditional views of being tough-minded and thus may typically be feared. Such fears are associated with high self-criticism and shame (Kirby, Day & Sagar, 2019), predict risks for maladaptive emotion regulation (Matos et al., 2021), and can appear regardless of one's level of dispositional self-compassion (Gilbert et al., 2011).

Although fear of compassion is commonly recognised as an undesirable state, to date, little is known regarding the consequence when one's self-compassion disposition is conflictive to the fearful state. In the context of doping, one would expect fearful feelings towards compassionate mind to magnify the risk of doping and undermine the benefit of self-compassion because the fearful feelings, especially those emerging from or associated with performance setbacks or adversities, may well invite a performer to risk doping to fulfil performance goals and thus a protected ego.

## 3. The present study

To better understand narcissism's potential risk to and self-compassion's potential protection against doping, we aimed to examine athletes' narcissistic traits (i.e., grandiose and vulnerable aspects) and compassionate minds (i.e., self-compassion, fear of compassion) in relation to known risk factors for doping, including high doping moral disengagement, low doping self-regulatory efficacy (Boardley et al., 2018), and high doping willingness (Stanger, Whitaker & Backhouse, 2020). Rooted in Bandura's (1991) Social Cognitive Theory of Moral Thought and Action, doping moral disengagement reflects the psychosocial mechanisms that allow individuals to dope without experiencing unpleasant affect such as guilt (Boardley et al., 2018). Also linked to Bandura's (1991) theory, doping self-regulatory efficacy reflects an individual's belief in their capability to resist personal and social pressures to engage in doping (Boardley et al., 2018). For comparison, doping willingness reflects an individual's openness to use prohibited substances under certain circumstance in risk conducive situations or context (e.g., returning from injury, struggling to keep up in training/performance) even if there was no prior intention to do so (Stanger et al., 2020).

We predicted that both grandiose and vulnerable narcissism would be linked with increased doping risk, because doping offers a (unhealthy) shortcut to bolster an inflated, yet fragile, self-image (i.e., being an exceptional performer when one's true capability cannot fulfil such an ambition). Considering vulnerable narcissism being a catalyst for grandiose narcissism in sport (Roberts et al., 2018), we hypothesised that a combination of grandiose (reflecting strong self-enhancement intention) and vulnerable narcissism (reflecting hypersensitivity

towards ego threats) would prove the highest risk for doping in comparison to other profiles (i.e., low-low, low-high, high-low in the two aspects of narcissism).

We also predicted that self-compassion mitigates narcissism associated doping risk, but such protection may be undermined by fearful feelings towards being self-compassion and receiving compassion from others. We therefore proposed a three-way interaction that fear of compassion moderates the interplay between narcissism and self-compassion on risk factors for doping. We hypothesised that self-compassion's protection of narcissism's (both grandiose and vulnerable aspects) risk for doping would be stronger when fear of compassion decreased but weaker when fear of compassion increased.

## 4. Methods

### 4.1. Participants

178 competitive UK-based athletes participated in this study ( $M$  age = 24.44 years,  $SD$  = 5.89,  $Range$  = 18–48;  $n$  = 99 male). They were either from individual (e.g., swimming, athletics, tennis, cycling;  $n$  = 24) or team (e.g., football, hockey, rugby, volleyball, netball;  $n$  = 154) sports, competed at regional ( $n$  = 147) or national and international ( $n$  = 31) level, and had an average of 7.1 years of experience training regularly ( $SD$  = 5.42). Power analysis via G\*Power (Faul, Erdfelder, Buchner & Lang, 2009) suggested we need at least 159 participants to detect a meaningful small-to-medium regressive effect (i.e., the effect of an interaction term on a study variable; Cohen's  $f^2$  = 0.05,  $\alpha$  = 0.05,  $1-\beta$  = 0.80). This sample allowed us to detect a smaller effect (i.e., Cohen's  $f^2$  = 0.04) than that used for a priori power analysis while achieving the same power (0.80) and thus fulfilled the need for initial investigation.

### 4.2. Measures

#### 4.2.1. Grandiose narcissism

We used Ames, Rose and Anderson (2006) *Narcissistic Personality Inventory – 16* (NPI-16) to assess grandiose narcissism. The NPI-16 is a short form of the NPI-40 (Raskin & Hall, 1979). The NPI is considered the most appropriate measure to capture the main characteristics of grandiose narcissism (Miller, Price & Campbell, 2012) and has been used successfully in competitive sport (Zhang et al., 2020). The NPI-16 comprises sixteen pairs of items that ask participants to choose between one narcissistic (e.g., “I have a natural talent for influencing people”) and one non-narcissistic statement (e.g., “I am not good at influencing people”) that best describes themselves. Cronbach's alpha of the NPI-16 ranged from 0.69–0.78 indicating acceptable to good levels of internal consistency (Ames et al., 2006). We generated total scores for narcissistic responses, with a higher score therefore reflecting increased grandiose narcissism.

#### 4.2.2. Vulnerable narcissism

We used Hendin and Cheek's (1997) *Hypersensitive Narcissism Scale* (HSNS) to assess vulnerable narcissism. The HSNS consists of ten items that describe one's feelings and behaviours (e.g., “My feelings are easily hurt by ridicule or the slighting remarks of others”). Participants indicated to what extent each item was characteristic of themselves using a 5-point Likert scale ranging from 1 – “very uncharacteristic or untrue” to 5 – “very characteristic or true”. The HSNS provides an insight into an individual's level of hypersensitivity and hypervigilance towards ego threats, reflecting the vulnerable, fragile aspects of narcissism, and has been used in athletic population (Roberts, Woodman, Lofthouse & Williams, 2015). Cronbach's alpha of the HSNS ranged 0.72–0.75 indicating good internal consistency (Hendin & Cheek, 1997). We generated mean scores for the HSNS, with higher scores reflecting increased vulnerable narcissism.

#### 4.2.3. Self-compassion

We used Raes, Pommier, Neff and Gucht (2011) *Self-Compassion Scale – Short* (SCS-S) to assess an individual's compassionate mind towards oneself. The SCS-S has been used well in sport contexts (Amemiya & Sakairi, 2020). It contains twelve items about one's feelings towards personal failure and distress (e.g., “When I fail at something important to me, I become consumed by feelings of inadequacy”) using a 5-point Likert scale ranging from 1 – “almost never” to 5 – “almost always”. Cronbach's alpha of the SCS-S achieved 0.80–0.92 reflecting very good to excellent internal consistency (Raes et al., 2011). We generated average scores for the SCS-S, with higher scores reflecting increased compassion towards oneself.

#### 4.2.4. Fear of compassion in sport

We used Zhang and McEwan's (2022) *Fear of Compassion in Sport Scale* (FCSS) as a measure for fear of self-compassion (FSC) and fear of compassion from other (FCO) in sport. The FCSS contains four items measuring FSC in sport (e.g., “I fear that if I start to develop compassion for myself, I will become dependant on it”) and six items measuring FCO in sport (e.g., “If I think someone is being kind and caring towards me, I put up a barrier”), using a 5-point Likert scale ranging from 1 – “don't agree at all” to 5 – “completely agree”. The scale has demonstrated very good construct validity and good measurement invariance (i.e., across different genders, sport type, and participating level) in athletic population (Zhang & McEwan, 2022; see also Walton et al., 2020). Cronbach's alpha achieved 0.76–0.90 and 0.84–0.88 for FSC and FCO, respectively, indicating good to excellent internal consistency (Zhang & McEwan, 2022). We generated average scores for the FSC and FCO items, with higher scores reflecting feelings that are more fearful.

#### 4.2.5. Doping risks

We used Boardley et al. (2018) *Doping Moral Disengagement Scale – Short* (DMDS-S) and *Doping Self-Regulatory Efficacy Scale* (DSRES) and Stanger et al. (2020) *Doping Willingness in Sport Scale* (DWiSS) to assess participating athletes' level of doping risks. The DMDS-S comprises six items assessing moral disengagement mechanisms in the context of doping (e.g., “It is not right to condemn individuals who dope when many in their sport are doing the same”). Participants responded on a 7-point Likert scale ranging from 1 – “strongly disagree” to 7 – “strongly agree”. The DSRES consists of six items that assess an individual's belief in their ability to resist internal and external pressures to dope (e.g., “... resist doping even if your training group encouraged you to do it”). Participants responded using a 5-point Likert scale ranging from 1 – “no confidence” to 5 – “complete confidence”. The DWiSS items constitute descriptions of eight hypothetical situations where an athlete might consider using banned substances in sport (e.g., “You thought everyone you were competing against was using a banned substance and getting away with it”), requiring participants to rate their willingness to dope in each situation using a 5-point Likert scale ranging from 1 – “Not at all willing” to 5 – “Extremely willing”. Cronbach's alphas for DMDS-S, DSRES, and DWiSS achieved 0.86–0.95 reflecting very good to excellent internal consistency (Boardley et al., 2018; Stanger et al., 2020). Higher DMDS-S and DWiSS and lower DSRES scores indicate increased risks of doping.

### 4.3. Procedures

With institutional ethical approval, the study measures were built into an online survey using Qualtrics and delivered via Prolific (<https://www.prolific.co.uk>; the UK's largest cloud-sourcing research participation platform). We invited participants using a list of anonymised Prolific IDs established from previous research we have conducted using Prolific (not published yet). These participants had participated in our research in the past through Prolific and provided valid and reliable data (i.e., no missing data or outliers, met inclusion criteria, reasonable completion time). We sent an invite to these participants through



Prolific and provided them the access to the Qualtrics study webpage where study information was presented followed by a consent form. Once completing the consent and entered the survey, participants were first led to a demographics section which we used to check participants' competitive status at the time of data collection. Participants who were playing sport for recreational purposes and not competing for any sport club/team against others at the time of survey were not eligible for this study and were therefore led to the end of the survey, thanked, and debriefed. Only eligible participants could proceed to the main survey that presented the previously described key study measures in randomised orders. These participants were thanked and debriefed on completion of the survey and received a £1.25 incentive via Prolific. The rate was based on minimum Prolific rate and estimated survey completion time.

#### 4.4. Data analyses

We first checked for missing data and extreme values (i.e., scores more than three standard deviations from the mean; Jaccard & Turrisi, 2003) for each study variable. Following that, we assessed descriptive statistics, internal reliability, and Pearson's correlations for all study measures. For the main analyses, *Mplus* (Muthén & Muthén, 2015) was used to test: the main and interactive effects of grandiose and vulnerable narcissism on doping risks (Model 1; grandiose  $\times$  vulnerable narcissism interaction), the moderation effects of self-compassion and fears of compassion on grandiose narcissism and doping risks (Model 2; grandiose narcissism  $\times$  self-compassion  $\times$  fears of compassion interaction), and the moderation effects of self-compassion and fears of compassion on vulnerable narcissism and doping risks (Model 3; vulnerable narcissism  $\times$  self-compassion  $\times$  fears of compassion interaction). Given the interrelated nature of the three measures we used to assess doping risks (i.e., doping moral disengagement, doping self-regulatory efficacy, doping willingness), we adopted multivariate analysis to test the hypothesised effects on the three doping risk measures simultaneously (see Fig. 1 for model diagrams). Full Information Maximum Likelihood (FIML) was used to handle partial missing data either at item- or construct-level for generating greater statistical power and less biased estimations (Newman, 2014). Following Jaccard and Turrisi's (2003) recommendation, we applied z-score transformation for all predictor variables (i.e., narcissism and compassion measures) to provide a common metric for interpretation. All predicting variables were allowed to covary thus controlling for potential confounds. We probed simple slopes at +1SD and -1SD for any significant interaction to assess slope differences at high and low levels of the moderator, respectively. Standardised regression coefficients are reported, with 95% confidence intervals that did not encompass zero indicating significance at the 0.05 level.

## 5. Results

### 5.1. Preliminary analyses

No missing data were found except fear of self-compassion in sport ( $n = 3$ ) and fear of compassion expressed by others ( $n = 1$ ). The partial missing values were included for further analyses using the FIML approach. The range of all responses were within three standard deviations. Study measures achieved good to excellent internal reliability (i.e., Cronbach's alpha ranged 0.70–0.76 for narcissism and self-compassion measures, 0.80–0.83 for fear of compassion measures, and 0.81–0.91 for doping risk measures). Grandiose narcissism was not correlated to any other study variable, whereas vulnerable narcissism was negatively correlated with self-compassion and doping self-regulatory efficacy and positively related to fears of compassion, doping moral disengagement, and doping willingness. Table 1 displays all descriptive statistics, Cronbach's alphas, and correlations for all study variables.

### 5.2. Main analyses

#### 5.2.1. Effects of grandiose and vulnerable narcissism

Testing of Model 1 revealed significant effects of grandiose narcissism on doping moral disengagement ( $\beta = 0.12, p = .01$ ; 95% CI [.03, 0.21]) and doping willingness ( $\beta = 0.13, p < .01$ ; 95% CI [.05, 0.21]), and of vulnerable narcissism on doping willingness ( $\beta = 0.14, p < .01$ ; 95% CI [.08, 0.20]). Neither grandiose narcissism, vulnerable narcissism, nor their interaction was related to doping self-regulatory efficacy. Importantly, the grandiose  $\times$  vulnerable narcissism interaction significantly predicted doping moral disengagement ( $\beta = -0.10, p = .02$ ; 95% CI [-0.19, -0.01]) and doping willingness ( $\beta = -0.14, p < .01$ ; 95% CI [-0.22, -0.06]). Simple slopes indicated that grandiose narcissism was related to increased doping moral disengagement ( $\beta = 0.22, p = .01$ ; 95% CI [.06, 0.39]) and doping willingness ( $\beta = 0.27, p < .01$ ; 95% CI [.13, 0.42]) only when vulnerable narcissism was low, whereas vulnerable narcissism was linked to increased doping moral disengagement and doping willingness regardless of levels of grandiose narcissism. Fig. 2 illustrates the nature of the grandiose  $\times$  vulnerable narcissism interaction on doping moral disengagement (top) and doping willingness (bottom).

#### 5.2.2. Moderation of self-compassion and fears of compassion on grandiose narcissism and doping

Testing of Model 2 revealed a significant grandiose narcissism  $\times$  self-compassion  $\times$  fear of self-compassion interaction on doping moral disengagement ( $\beta = -0.17, p = .03$ ; 95% CI [-0.33, -0.02]). Fig. 3 illustrates the nature of this three-way interaction. When fear of self-compassion was low, grandiose narcissism was not related to doping

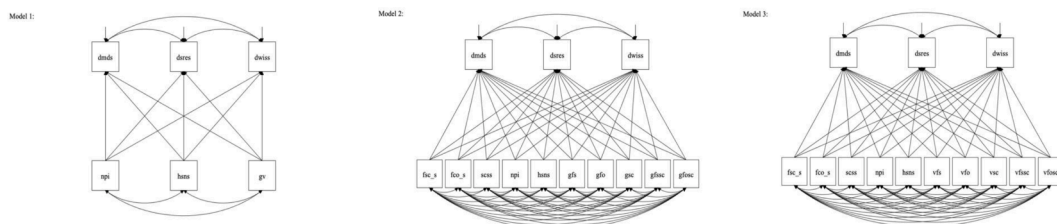


Fig. 1. Illustration of model diagrams.

DMDS = doping moral disengagement, DSRES = doping self-regulatory efficacy, DWISS = doping willingness in sport, FSC\_S = fear of self-compassion in sport, FCO\_S = fear of compassion from others, SCSS = self-compassion, NPI = grandiose narcissism, HSNS = vulnerable narcissism, GV = grandiose  $\times$  vulnerable narcissism interaction, GFS = grandiose narcissism  $\times$  fear of self-compassion interaction, GFO = grandiose narcissism  $\times$  fear of compassion from others interaction, GSC = grandiose narcissism  $\times$  self-compassion interaction, GFSSC = grandiose narcissism  $\times$  self-compassion  $\times$  fear of self-compassion interaction, GFOSC = grandiose narcissism  $\times$  self-compassion  $\times$  fear of compassion from others interaction, VFS = vulnerable narcissism  $\times$  fear of self-compassion interaction, VFO = vulnerable narcissism  $\times$  fear of compassion from others interaction, VSC = vulnerable narcissism  $\times$  self-compassion interaction, VFSSC = vulnerable narcissism  $\times$  self-compassion  $\times$  fear of self-compassion interaction, VFOSC = vulnerable narcissism  $\times$  self-compassion  $\times$  fear of compassion from others interaction.

**Table 1**

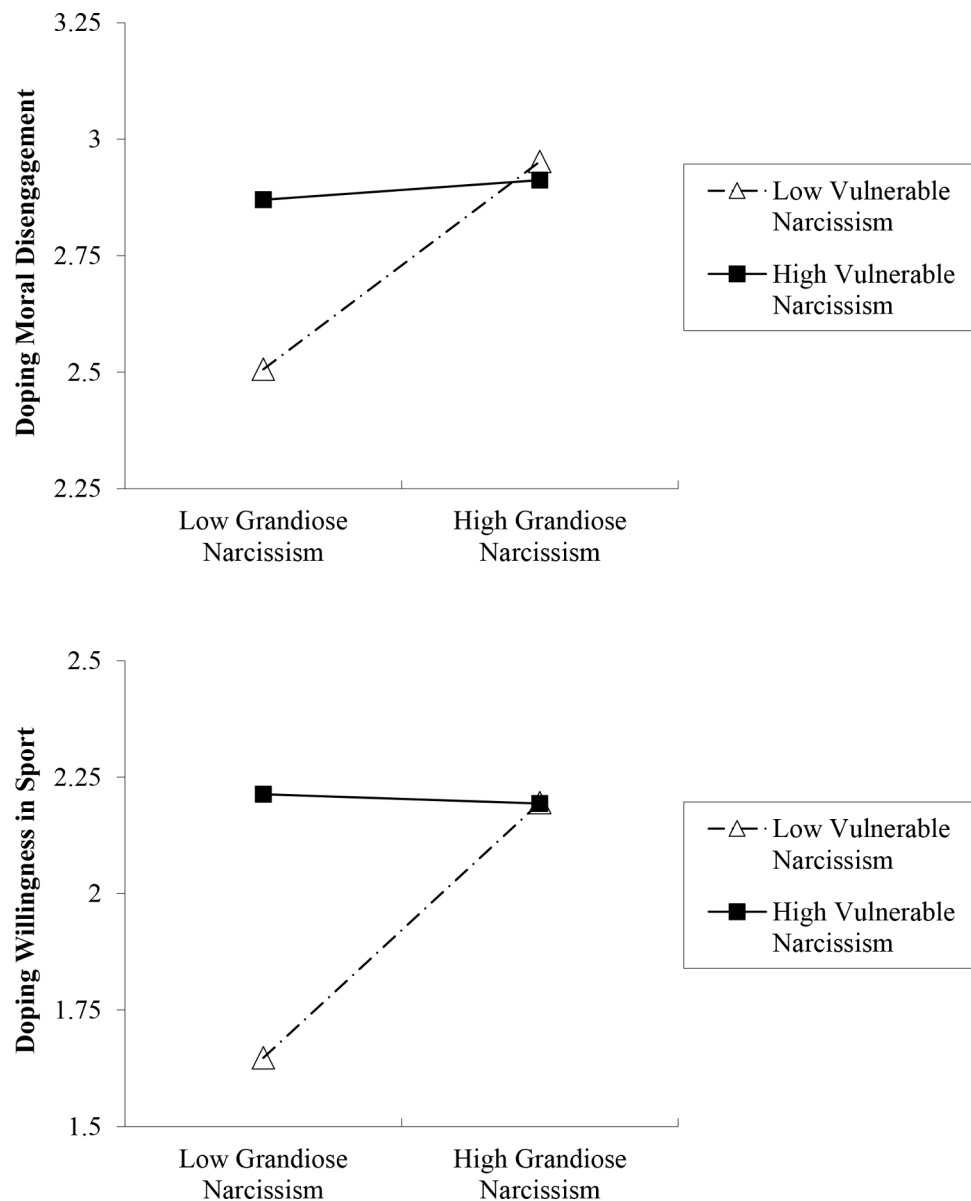
Descriptive statistics and Pearson's correlation of study variables.

|                                    | Mean | SD   | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |
|------------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Grandiose narcissism            | .23  | .17  | (.70) |       |       |       |       |       |       |       |
| 2. Vulnerable narcissism           | 3.12 | .61  |       | (.71) |       |       |       |       |       |       |
| 3. Self-compassion                 | 3.03 | .63  |       |       | (.76) |       |       |       |       |       |
| 4. Fear of self-compassion         | 2.65 | .98  |       |       |       | (.80) |       |       |       |       |
| 5. Fear of receiving compassion    | 2.19 | .93  |       |       |       |       | (.83) |       |       |       |
| 6. Doping moral disengagement      | 2.80 | 1.26 |       |       |       |       |       | (.81) |       |       |
| 7. Doping self-regulatory efficacy | 4.21 | .88  |       |       |       |       |       |       | (.89) |       |
| 8. Doping willingness              | 2.07 | .95  |       |       |       |       |       |       |       | (.91) |

Note. The range of average score is 0–1 for grandiose narcissism, 1–5 for vulnerable narcissism, self-compassion, fear of self-compassion, fear of receiving compassion, doping willingness, 1–7 for doping moral disengagement and doping self-regulatory efficacy. Cronbach's alpha coefficients are presented in parentheses.

\*\*  $p < .01$ .

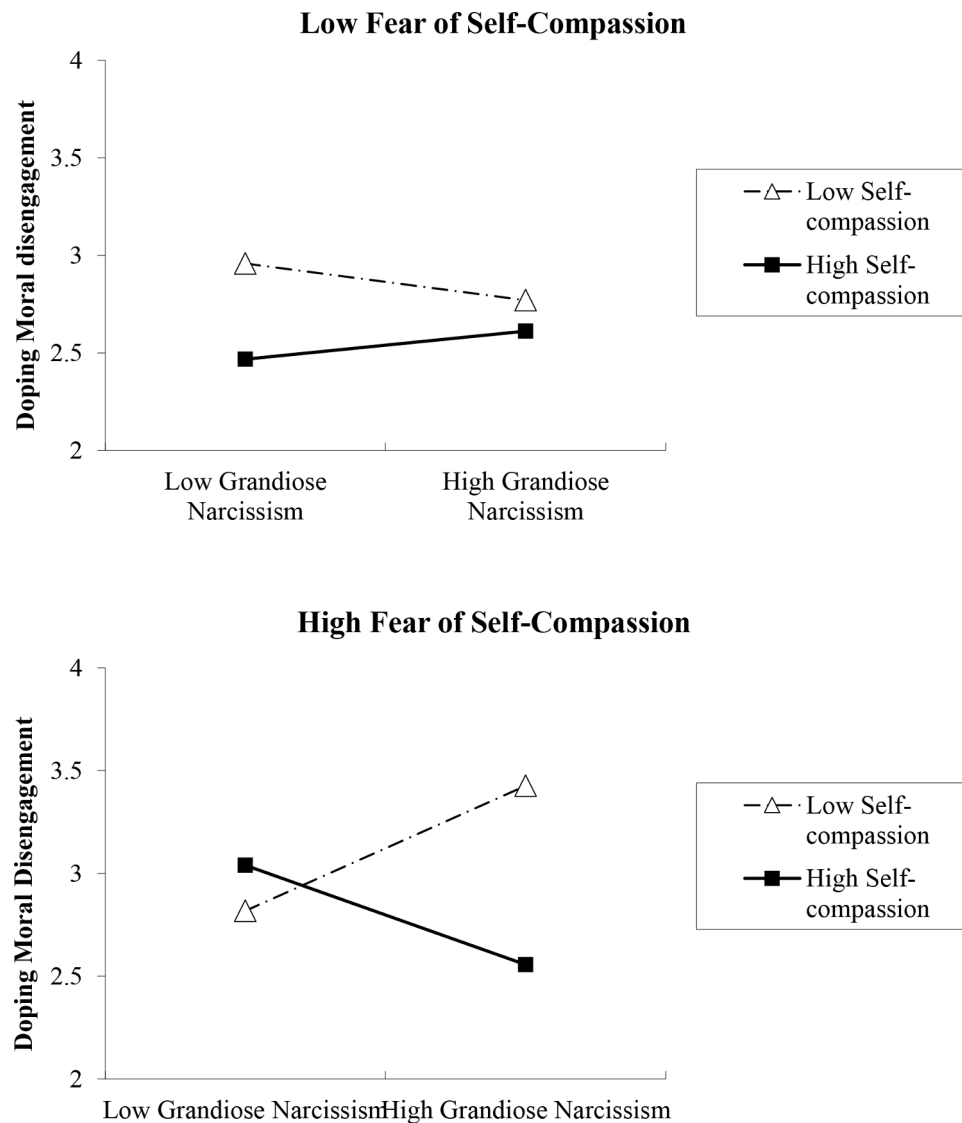
\*  $p < .05$ .



**Fig. 2.** The interaction between grandiose and vulnerable narcissism on doping moral disengagement (top) and doping willingness (bottom). Regression slopes are derived from hypothetical individuals who are one standard deviation below the mean (low) and one standard deviation above the mean (high).

moral disengagement regardless of whether self-compassion was high ( $\beta = 0.07$ ,  $p = .68$ ; 95% CI  $[-0.26, 0.39]$ ) or low ( $\beta = -0.09$ ,  $p = .66$ ; 95% CI  $[-0.50, 0.31]$ ). However, when fear of self-compassion was high,

grandiose narcissism was related to increased doping moral disengagement when self-compassion was low ( $\beta = 0.30$ ,  $p = .03$ ; 95% CI  $[.03, 0.57]$ ) but not high ( $\beta = -0.24$ ,  $p = .25$ ; 95% CI  $[-0.64, 0.17]$ ). This



**Fig. 3.** The grandiose narcissism  $\times$  self-compassion interaction on doping moral disengagement at low (top) and high (bottom) level of fear of self-compassion. Regression slopes are derived from hypothetical individuals who are one standard deviation below the mean (low) and one standard deviation above the mean (high).

interaction controlled for significant effects of vulnerable narcissism ( $\beta = 0.23, p = .04$ ; 95% CI [.01, 0.46]) and fear of compassion expressed by others ( $\beta = 0.31, p = .01$ ; 95% CI [.09, 0.52]) on doping moral disengagement. Statistical control of vulnerable narcissism was also linked to increased doping willingness ( $\beta = 0.20, p = .02$ ; 95% CI [.03, 0.37]), while fear of self-compassion was linked to impaired doping self-regulatory efficacy ( $\beta = -0.18, p = .01$ ; 95% CI [-0.32, 0.04]) and increased doping willingness ( $\beta = 0.22, p = .01$ ; 95% CI [.06, 0.38]). No other effect was significant. Table S1 presents detailed regression statistics for the full multivariate model for grandiose narcissism.

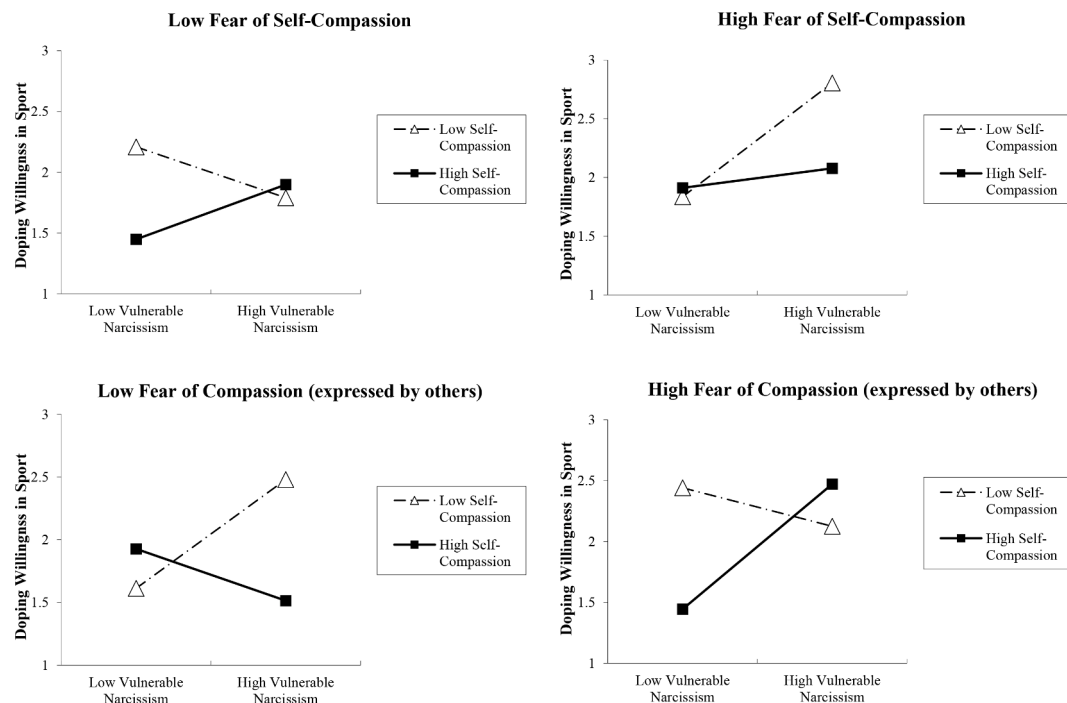
#### 5.2.3. Moderation of self-compassion and fears of compassions on vulnerable narcissism and doping

Testing of Model 3 revealed two significant three-way interactions. Specifically, results revealed a significant three-way interaction between vulnerable narcissism, self-compassion, and fear of self-compassion ( $\beta = -0.21, p = .02$ ; 95% CI [-0.39, -0.03]), and between vulnerable narcissism, self-compassion and fear of compassion expressed by others ( $\beta = 0.33, p = .01$ ; 95% CI [.11, 0.54]) on doping willingness. For the vulnerable narcissism  $\times$  self-compassion  $\times$  fear of self-compassion interaction (Fig. 4 top panel), when fear of self-compassion was low,

vulnerable narcissism was not significantly related to doping willingness regardless of whether self-compassion was low or high. However, when fear of self-compassion was high, vulnerable narcissism was linked to increased doping willingness when self-compassion was low ( $\beta = 0.49, p < .01$ ; 95% CI [.22, 0.75]) but not high ( $\beta = 0.08, p = .60$ ; 95% CI [-0.23, 0.40]).

To expand on the vulnerable narcissism  $\times$  self-compassion  $\times$  fear of compassion from others interaction (Fig. 4 bottom panel), when fear of compassion expressed by others was low, vulnerable narcissism was related to increased doping willingness when self-compassion was low ( $\beta = 0.43, p = .01$ ; 95% CI [.13, 0.74]) but not high ( $\beta = -0.21, p = .17$ ; 95% CI [-0.50, 0.09]). In contrast, when fear of compassion expressed by others was high, vulnerable narcissism was related to increased doping willingness when self-compassion was high ( $\beta = 0.51, p = .01$ ; 95% CI [.14, 0.89]) but not low ( $\beta = -0.16, p = .47$ ; 95% CI [-0.59, 0.27]).

Moreover, despite the non-significant three-way interaction for doping self-regulatory efficacy, two-way interactions between vulnerable narcissism and self-compassion ( $\beta = -0.15, p = .02$ ; 95% CI [-0.28, -0.02]), and between vulnerable narcissism and fear of self-compassion were evident ( $\beta = -0.20, p = .02$ ; 95% CI [-0.37, -0.03]) (see Fig. 5).



**Fig. 4.** The moderation of fear of self-compassion (top panel) and fear of compassion from others (bottom panel) on the vulnerable narcissism  $\times$  self-compassion interaction on doping willingness. Regression slopes are derived from hypothetical individuals who are one standard deviation below the mean (low) and one standard deviation above the mean (high).

Specifically, increases in vulnerable narcissism linked with decreases in doping self-regulatory efficacy only when self-compassion ( $\beta = -0.24$ ,  $p = .01$ ; 95% CI  $[-0.42, -0.06]$ ) and fear of self-compassion were high ( $\beta = -0.29$ ,  $p = .01$ ; 95% CI  $[-0.51, -0.07]$ ), but not when self-compassion ( $\beta = 0.06$ ,  $p = .62$ ; 95% CI  $[-0.17, 0.29]$ ) and fear of self-compassion were low ( $\beta = 0.11$ ,  $p = .40$ ; 95% CI  $[-0.15, 0.36]$ ).

Apart from the identified interactions, significant positive relationships were found between fear of compassion expressed by others and doping moral disengagement ( $\beta = 0.29$ ,  $p = .01$ ; 95% CI  $[.08, 0.50]$ ) and between fear of self-compassion and doping willingness ( $\beta = 0.16$ ,  $p = .03$ ; 95% CI  $[.01, 0.31]$ ) as statistical control. Further, significant negative relationships were found between fear of self-compassion and doping self-regulatory efficacy ( $\beta = -0.18$ ,  $p = .01$ ; 95% CI  $[-0.32, -0.04]$ ) and between self-compassion and doping willingness ( $\beta = -0.16$ ,  $p = .02$ ; 95% CI  $[-0.30, -0.02]$ ). However, grandiose narcissism was not related to doping moral disengagement, doping self-regulatory efficacy, nor doping willingness. No other effect was significant. Table S2 presents detailed statistics for the full multivariate model for vulnerable narcissism.

## 6. Discussion

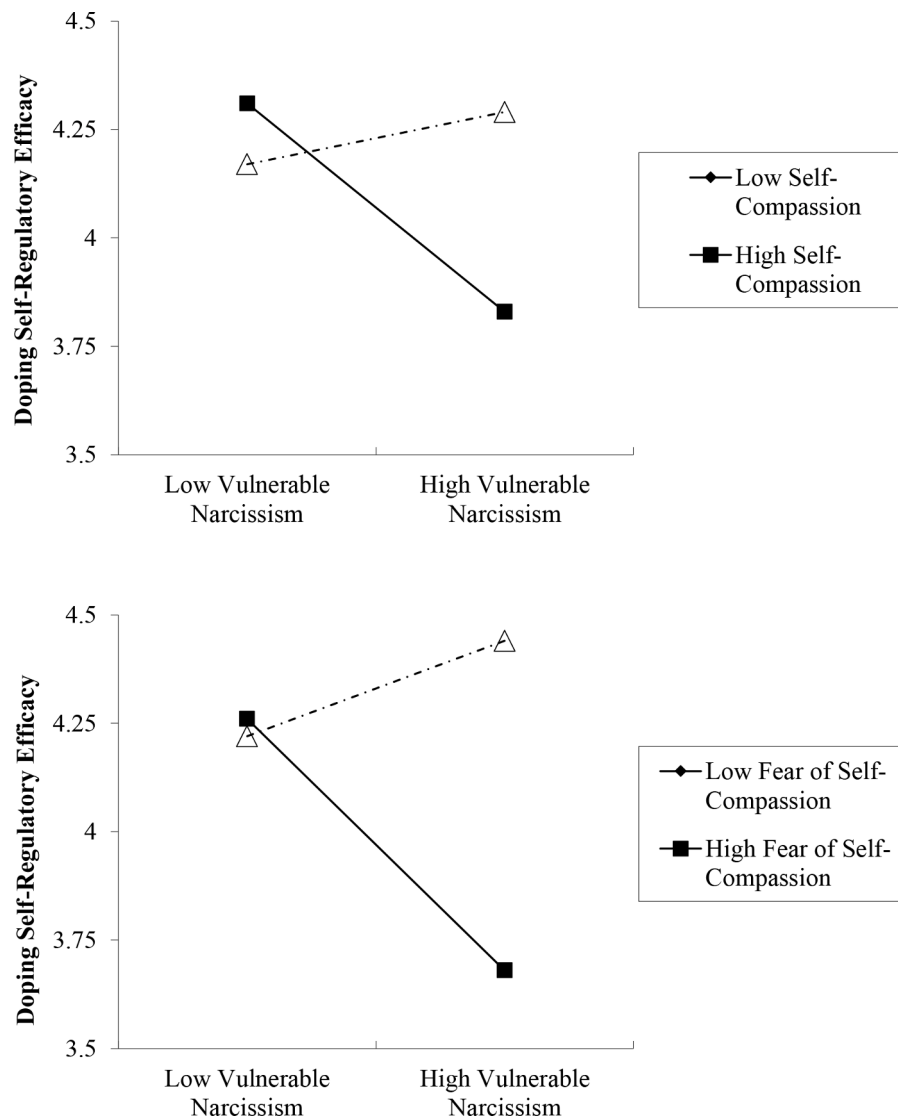
Knowledge of how psychological factors relating to the 'selves' may play a role in doping is scarce. The present study is the first investigating individual differences of narcissism, self-compassion, fear of compassion, and their interplay linked to psychological risk factors for doping. In a sample of competitive athletes, we found increased doping moral disengagement and doping willingness when the participating athletes were either high in grandiose or vulnerable narcissism or indeed both, with a low-low combination of both aspects of narcissism representing the lowest risk for intentional doping. High self-compassion appeared potentially beneficial in protecting against grandiose narcissism's risk for doping moral disengagement, and vulnerable narcissism's risk for doping willingness regardless of one's fearful feeling towards self-compassion. Moreover, fear of compassion expressed by others was associated with increased doping willingness, even when their

dispositional self-compassion was high. A combination of high fear of receiving compassion from others and high self-compassion is particularly problematic to individuals with vulnerable narcissism, as it was linked to an inflated willingness to dope.

While the findings suggest both grandiose and vulnerable narcissism are risk factors for doping, it is vulnerable, not grandiose, narcissism that need particular attention when assessing risk profiles for doping. Although grandiose and vulnerable narcissism interactively predicted doping moral disengagement and doping willingness in the present study, results also revealed that the relationships between grandiose narcissism and doping moral disengagement and willingness are dependant on the level of vulnerable narcissism. In contrast, individuals high in vulnerable narcissism appeared high in both doping moral disengagement and willingness, regardless of whether they were high or low in grandiose narcissism. The identification of vulnerable narcissism as a greater risk factor for doping compared to grandiose narcissism in this study is comparable to research assessing narcissism-associated risks in muscle dysmorphia. In a sample of strength and cardio trainers, Boulter and Sandgren (2022) found that vulnerable, not grandiose narcissism, predicted muscle dysmorphia after separating the effects of the two distinctive aspects of narcissism. This is similar to our results that the association of grandiose narcissism with doping moral disengagement and doping willingness was insignificant after controlling for vulnerable narcissism. Collectively, the findings support the contention that vulnerable narcissism is a more concerning or maladaptive aspect of the narcissistic personality in sport compared to the grandiose component (cf. Roberts et al., 2018).

Further to identifying narcissism-related risks for doping, the study findings suggest embracing a compassionate mind could protect against risks for doping associated with narcissism. When examining the influence of self-compassion in sport, quantitative research has found evidence that athletes high in self-compassion are more capable of getting through emotionally difficult times (Ferguson, Kowalski, Mack & Sabiston, 2015), demonstrate superior stress response and coping (Mosewich, Sabiston, Kowalski, Gaudreau & Crocker, 2019), and report better performance satisfaction and enhanced motivation (Barczak &





**Fig. 5.** The interaction between vulnerable narcissism and self-compassion (top) and between vulnerable narcissism and fear of compassion (bottom) on doping self-regulatory efficacy. Regression slopes are derived from hypothetical individuals who are one standard deviation below the mean (low) and one standard deviation above the mean (high).

Eklund, 2020). Also, qualitative research has documented the phenomenon that high-performing athletes shift from self-critical to self-compassionate approaches to recuperate from setbacks (Frentz et al., 2020). These emotion and coping related benefits associated with self-compassion may comfort the discrepancies between the inflated, fantasised self and the deflated, distressful reality in sport, which explains why self-compassion may be protective against risks for doping associated with narcissism (i.e., doping to enhance performance thus bolstering an inflated yet fragile self).

In addition to offering insights into why embracing a compassionate mind may reduce risks for doping, the study calls attention to the influence of fear of compassion. Literature suggests the majority of competitive athletes have probably not (yet) been convinced of the benefits of taking a compassionate approach (Ferguson et al., 2014), and high-level performers generally devalue compassion because they are fearful of being too compassionate and becoming mediocre (Sutherland et al., 2014). Findings of the current study infer that embracing a self-compassionate mind and simultaneously being concerned about being overly self-compassionate does not necessarily conflict with one another, nor does it undermine resistance against doping (i.e., self-compassion mitigated risks for doping moral disengagement and

doping willingness even when fear of self-compassion was high). It is possible that when an individual sets high self-standards (i.e., avoiding and being fearful of inappropriate use of self-compassion) while also being able to approach failures in a gentler and accepting mind, the risk for doping is reduced.

However, our data also revealed the incompatibility of self-compassion and fear of compassion from others, that self-compassion linked to decreased doping willingness when fear of compassion from others was low but increased doping willingness when such fear was high, especially in high- compared to low-vulnerable narcissism individuals. This finding suggests the need for attention to consider intervening on reducing fearful feelings towards receiving compassion from others for optimal delivery of the possible, future compassion-focused practice for anti-doping.

### 6.1. Limitations and future directions

Despite presenting some novel findings with implications for assessing and reducing risks for doping, we acknowledge the limitations imposed by the cross-sectional nature of the current study, therefore restraining our understanding of the causal effects of narcissism and

compassion on risks for doping. However, given the comprehensive theorising (e.g., conceptualising the main and interactive effects of the two competing self-concepts on risk for doping), methodology (e.g., multivariate model, FIML addressing missing data, control for confounding) of the study, the cross-sectional nature does not undermine the value of making predictions, especially in assessing narcissism and self-compassion as psychological drivers for – and protective factors against – doping. Future research should consider longitudinal designs and pursue further insights into cultural differences and mechanisms underpinning the identified psychological drivers (i.e., narcissism) and protective factors (i.e., compassion) for doping.

Although our power analysis indicated our sample size was sufficient, we acknowledge that the sample size of this study was not optimal. Indeed, Schweizer and Furlley's (2016) review of 337 selected correlational studies published in four leading sport and exercise psychology journals revealed an average of 221 participants, with an interquartile range of 124 to 386. Based on this, sample size of the current study was lower than average correlational studies published in the four leading sport and exercise psychology journals, although still within the interquartile range of the recommended sample size for achieving good statistical power. More importantly, we conducted a priori power analysis to find out the required sample size for detecting a relatively small regressive effect (i.e., Cohen's  $f^2 = 0.05$ ; note 0.02, 0.15, 0.35 indicates small, medium, and large effect size for Cohen's  $f^2$  respectively). Therefore, while calling for a larger sample size for future studies, we believe the current study sample does not undermine our testing of the study hypotheses and generation of findings.

Also, one might argue doping or use of banned substances is most relevant to elite level athletes. In our sample, only about 17% of participants were competing at national or international levels while the rest were all competing at regional level. We agree on the importance of engaging elite and high-level athletes in doping research but also call for attention to developing athletes. As is outlined in a recent Delphi study generating a social science research agenda for clean sport (Boardley et al., 2021), understanding the development of protective and risk factors for doping is one of the six most important area of research. The current study sample, therefore, is meaningful in understanding the role of different self-concepts (i.e., narcissism, self-compassion) in doping. We call for future studies to examine the study findings in exclusively elite populations.

In addition, the present study has focused on narcissism and self-compassion as two intrapersonal psychological factors in doping, leaving social (e.g., parental, peer, education, etc.) influences on doping unaddressed. It is noteworthy that research has suggested social factors play a significant role of the developmental issues related to doping (e.g., Erickson et al., 2017; Petróczi et al., 2021). Future research would therefore do well to unveil the interplay between intrapersonal/individual and interpersonal/social factors in the contexts of doping.

## 7. Conclusion

The present study is the first addressing two competing self-concepts (i.e., narcissism vs self-compassion) and their interplay in identifying risk factors for doping. Overall, the study demonstrates evidence supporting both grandiose and especially vulnerable aspects of narcissism as psychological drivers of doping, and compassion, especially high self-compassion, and low fear of receiving compassion from others, as protective factors against banned substance use. Since narcissistic personality traits are relatively stable across the life span (Chopik & Grimm, 2019) and are considerably difficult, if not impossible, to change or intervene with (i.e., similar to other personality traits; Borghuis et al., 2017), our findings highlight the potential of adopting compassion-focused training for anti-doping purposes. Coaches and practitioners may consider embedding compassion-related training or education programmes to help tackle doping risks, especially under

certain risk-conducive circumstances. We now call for longitudinal and multi-country approaches to replicate and extend our findings, which should offer more practical implications for possible development of compassion-focused practices for anti-doping.

## Credit authorship statement

Both SZ and IB involved in the conceptualization and design of the study. SZ secured funding on data collection, conducted the data collection and performed data analysis with support from IB. SZ prepared the original draft of the manuscript before IB went through reviewing, revising, and editing works.

## Declaration statement

This research received financial support from the School of Human Sciences, University of Derby, UK on paying participant incentives. The authors do not have any conflict of interests. The data that support the findings of the research are not publicly available due to ethics restriction. The data and codes for analysis are available for qualified researchers on request from the corresponding authors.

## Declaration of Competing Interest

This statement is to confirm that my co-author and I do not have any conflicts or interests that might be interpreted as influencing the research. The first author of the paper will be serving as the corresponding author for this manuscript. All of the authors listed have agreed to the by-line order and to submission of the manuscript in the current form

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.peh.2022.100243](https://doi.org/10.1016/j.peh.2022.100243).

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