Link to Leeds Beckett Repository record:
https://eprints.leedsbeckett.ac.uk/id/eprint/9373/

Document Version:
Article (Accepted Version)

Perfectionism and Doping Willingness in Athletes:

The Mediating Role of Moral Disengagement

Gareth E. Jowett[1], Nicholas Stanger[1], Daniel J. Madigan[2], Laurie B. Patterson[1], Susan H.

Backhouse[1]

[1]Carnegie School of Sport, Leeds Beckett University, UK

[2]School of Science, Technology, and Health, York St. John University, UK

Author Note

Correspondence concerning this article should be addressed to Gareth E. Jowett, 118 Fairfax

Hall, Carnegie School of Sport, Headingley Campus, Leeds Beckett University, UK, LS6

3QS. Email: g.e.jowett@leedsbeckett.ac.uk

Abstract

Although trait perfectionism has been related to doping attitudes in athletes, research investigating variables that could account for relationships between perfectionism and doping outcomes has received scant attention. Consequently, the aim of the present study was to investigate whether perfectionism was related to doping willingness directly and indirectly via moral disengagement. We recruited a sample of 204 student athletes (M age = 19.12 years, SD = 1.17, n = 81 females - 39.70%) who completed measures of perfectionistic strivings, perfectionistic concerns, doping moral disengagement, and doping willingness. Multiple regression analyses revealed a significant positive relationship between perfectionistic concerns and doping willingness (β = .13, p < .05) and a nonsignificant relationship between perfectionistic strivings and doping willingness (β = -.01, p > .05). Moreover, bias-corrected bootstrapped indirect effects revealed that doping moral disengagement mediated the relationship between perfectionistic concerns and doping willingness (ab = .12; 95% CI = .02 to .21). The findings suggest that the relationship between perfectionistic concerns and doping extends beyond attitudes – to doping willingness – and the propensity to morally disengage explains why this is the case.

Keywords: performance enhancing substances; drugs; perfectionistic strivings, perfectionistic concerns

Introduction

Doping is defined as the occurrence of one or more of the anti-doping rule violations set out in the World Anti-Doping Agency Code (2021). Violations include the use of a prohibited substance or method and tampering with any part of the doping control process. The prevalence of doping in competitive sport remains poorly understood, with rates ranging from 0 to 73%, but with most falling under 5% (Gleaves et al., 2021). With such variability, social science researchers have sought to understand how and why some athletes dope, while others abide by the rules (e.g., Nicholls et al., 2020). From this research, personality has been identified as a central consideration. This is because certain personality traits appear to shape athletes' attitudes toward doping. For example, the Dark Triad (Machiavellianism, narcissism, and psychopathy) is associated with more favourable attitudes towards doping (Nicholls et al., 2020). These findings suggest that some athletes, by virtue of their personality traits, may be more likely to dope. One key personality trait that may increase athletes' propensity to dope is perfectionism. The purpose of the present study was to examine the relationships between multidimensional perfectionism and doping, and test a potential mediator of these relationships, namely moral disengagement.

Trait Perfectionism and Doping

Perfectionism is a multidimensional personality trait that comprises excessively high personal standards and overly critical evaluations of behaviour (Frost et al., 1990). There are numerous models and measures of perfectionism (Hill, 2016). The two-factor model of perfectionism allows the integration and comparison of these approaches (Hill, 2016). This model proposes that two higher-order dimensions capture the complexity of perfectionism. The first of these dimensions - perfectionistic strivings - comprises the excessively high personal standards and self-oriented elements of perfectionism. The second dimension - perfectionistic concerns - comprises the overly critical evaluations, negative reactions to imperfection, and socially-prescribed elements of perfectionism.

Perfectionism could underpin doping in sport. This is due to perfectionistic strivings and perfectionistic concerns both having the potential to result in "dark striving" (Flett & Hewitt, 2014). That is, dimensions of perfectionism can drive a win-at-all-costs mentality, that could manifest in a will to do whatever is necessary to win. For perfectionistic strivings, the focus for this drive is on self-enhancement, that is the pursuit of personal improvement and perfection (Hardwick et al., 2022). Therefore, the dark side of perfectionistic strivings may only manifest when adverse circumstances interrupt the personal pursuit of perfection (e.g., injury). By contrast, perfectionistic concerns are driven by an enduring and fragile form of self-preservation based on futile attempts to avoid imperfection. Therefore, while doping is a potential outcome of the perfectionistic drive of both dimensions (Flett & Hewitt, 2014), the dark striving of perfectionistic concerns may be relatively more salient in relation to doping, due to the desperation which characterizes this dimension. In support of this position, a meta-analysis by Madigan et al. (2020) showed that perfectionistic concerns (also known as evaluative concerns perfectionism) were a significant positive correlate of more favourable attitudes towards doping, especially when controlling for the overlap between perfectionistic concerns and perfectionistic strivings. By contrast, the link between perfectionistic strivings (also known as personal standards perfectionism) and doping attitudes is typically non-significant (Madigan et al., 2020).

It is worth noting that previous research investigating the trait perfectionism-doping relationship has focused on attitudes toward doping (see Madigan et al., 2020). Another proxy indicator of doping behaviour is doping willingness, which reflects "one's openness to take a banned substance in certain risk conducive situations or contexts even if there is no prior intention to do so" (Stanger et al., 2020, p.1530). Examples of risk conducive situations or contexts for doping include being injured and needing to recover quickly, under-performing or struggling to perform as well as other competitors, and perceiving that other competitors are taking banned substances (Stanger et al., 2020; Whitaker et al., 2014, 2017). However, researchers have yet to

examine how perfectionism is associated with willingness to dope under risk-conducive circumstances (viz. doping willingness), and importantly not yet examined variables that could mediate this relationship. One potential candidate is moral disengagement.

Perfectionism, Moral Disengagement and Doping Willingness

How athletes rationalize their (dark) behaviours may be helpful in explaining the perfectionism-doping willingness relationship. Bandura (1999) explains that individuals refrain from acting in ways that violate their moral standards because they expect to experience self-reproof (e.g., guilt and shame). However, individuals can still commit transgressive behaviours that can run counter to their moral standards without experiencing the typical (anticipated) negative emotional consequences via the use of moral disengagement (Bandura, 1999).

Moral disengagement refers to psychosocial mechanisms (e.g., moral justification, displacement of responsibility) that make transgressive acts more likely by cognitively restructuring or distorting the consequences of the behaviour, or by reducing responsibility for the act (Bandura, 1999). Researchers have found that moral disengagement towards doping is a positive correlate of self-reported doping, doping likelihood and doping susceptibility (e.g., Boardley et al., 2017; Kavussanu & Ring, 2017; Stanger & Backhouse, 2020). Athletes higher in perfectionism (particularly perfectionistic concerns) may be more likely to disengage from their moral standards in the pursuit of attaining excessively high performance standards, and in so doing, be more likely to justify their willingness to dope. For example, perfectionistic concerns may prime an athlete to displace responsibility for doping onto a coach who demands perfection and asks the athlete to take a banned substance. Recent findings outside of sport provide evidence for moral disengagement as a mediator between moral perfectionism and transgressive behaviour for personal gain in undergraduate students (e.g., Machiavellian behaviour; Abdollahi et al., 2021). However, researchers have yet to examine this possibility in sport with a focus on trait perfectionism and doping-related outcomes.

The Present Study

The aims of the present study were to examine the relationships between dimensions of perfectionism and doping willingness; and whether doping moral disengagement mediated these relationships. Based on previous research (e.g., Madigan et al., 2020) and theory (e.g., Bandura, 1999; Flett & Hewitt, 2016), we expected perfectionistic concerns to be positively related to doping willingness directly (particularly when controlling for perfectionistic strivings) and indirectly via moral disengagement. By contrast, given the mixed findings concerning links between perfectionistic strivings and doping attitudes in previous research (e.g., Madigan et al., 2020), we expected the relationship between perfectionistic strivings with doping willingness and moral disengagement to be non-significant.

Method

Participants and Procedure

A sample of 204 student athletes: 118 (57.84%) males, 81 (39.70%) females, and 5 (2.45%) undisclosed (mean age = 19.12 years; SD = 1.17) participated in the present study. The minimum sample size required to detect small-to-medium effects was n = 148 (α path = .26, β path = .26, α = .05, power = .80) for bias-corrected bootstrap test of mediation (Fritz & MacKinnon, 2007). As the specific relationships in our study had not been tested previously, we based the a priori power assessment on the midpoint (.26) of the effects with similar variables reported previously (e.g., perfectionism and doping attitudes r^+ = .21, Madigan et al., 2020; moral disengagement and doping willingness r = .31; Stanger et al., 2020).

The athletes competed across different levels of sport, including club (n = 131, 64.22%), county (n = 18, 8.82%), regional (n = 23, 11.28%), national (n = 18, 8.82%) and international (n = 12, 5.88%) levels. Athletes had participated in their sport for an average of 9.07 (SD = 3.90) years. Following ethical approval by the lead author's institution, participants were invited to voluntarily participate in the research at the end of lectures or seminars. After reading an information sheet, participants completed and signed an informed consent form and were then provided with an

anonymous paper and pencil questionnaire comprising the measures described below. On completion, participants inserted their consent form and questionnaire in separate envelopes and handed these directly back to the researcher, who thanked them for their participation and securely stored these in separate locations to further maintain participant anonymity.

Measures

Trait perfectionism. We used four subscales from the Sport Multidimensional Perfectionism Scale (SMPS-2; Gotwals & Dunn, 2009) to measure perfectionism. To measure perfectionistic strivings, we combined two indicators: the 7-item subscale capturing personal standards (e.g., "I have extremely high goals for myself in my sport") and the 6-item subscale capturing organisation (e.g., "On the day of competition, I have a routine that I try to follow"). To measure perfectionistic concerns, we also used two indicators, the 8-item subscale capturing concern over mistakes ("People will probably think less of me if I make mistakes in competition") and the 6-item subscale capturing doubts about action (e.g., "I rarely feel that my training fully prepares me for competition"). Participants were asked to indicate to what degree each statement characterised their attitudes in their sport, responding on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The four subscales have demonstrated validity and reliability ($\alpha \geq .73$) in previous studies (e.g., Dunn et al., 2016).

Moral disengagement. We used the moral disengagement in doping scale (MDDS; Kavussanu et al., 2016) to measure athletes' doping moral disengagement. The MDDS comprises 6 items (e.g., "doping is just a way to 'maximise your potential"). Participants responded on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The MDDS has demonstrated validity and reliability ($\alpha \geq .79$) in previous research (e.g., Kavussanu et al., 2016).

Doping willingness. We used the doping willingness in sport scale (DWiSS; Stanger et al., 2020) to measure doping willingness. The DWiSS includes 8-items capturing doping willingness, using the stem: "Would you be willing to use a banned substance if…. (e.g., "You suffered an

injury and needed to recover quickly"). Responses were scored using a 5-point Likert scale ranging from 1 (*not at all willing*) to 5 (*extremely willing*). There is evidence for the validity and reliability ($\alpha \geq .92$) of the DWiSS (Stanger et al., 2020).

Analytic Strategy

First, mean scores were calculated for each measure, and aligned with Tabachnick & Fidell (2007), the data was screened for univariate (i.e., cases with an extreme score on one variable) and multivariate outliers (i.e., cases with an unusual combination of scores on two or more variables). Second, we used multiple regression with robust estimators in Mplus to examine the relationships between perfectionism and doping willingness. Regression provided the independent effects of perfectionistic strivings and perfectionistic concerns. Next, path modelling in Mplus was used to test our hypothesized mediational model. The model was tested using robust maximum likelihood estimation, which is robust to deviations from normality. In order to evaluate model fit, the following absolute and relative fit indices were chosen: Comparative Fit Index (CFI), Tucker-Lewis Index (TLI; this is also known as non-normed fit index, NNFI), Standardised Root Mean square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA; see Marsh, Hau & Wen, 2004). In line with Marsh et al. (2004), the following conventional criteria were used to assess the model for adequate (CFI and TLI > .90, SRMR < .10, RMSEA < .10) and good fit (TLI and CFI > .95, SRMR < .08, RMSEA < .08). Finally, to examine mediation, bias-corrected bootstrapping (1,000 samples) was used to estimate indirect effects (Rucker et al., 2011). The indirect effects are significant ($p < .05$) if the 95% Confidence Interval (CI) does not contain zero (Rucker et al., 2011).

<div align="center">

Results

</div>

Preliminary Analysis, Descriptive Statistics and Bivariate Correlations

Two univariate outliers ($Z > \pm3.29$) and one multivariate outlier (Mahalanobis distance larger than the critical value of χ^2 [4] = 18.47, $p < 0.001$) were identified and were subsequently

removed from further analyses. Then, Cronbach's alpha was calculated for all subscales, of which all were acceptable (> .70; see Table 1). The final sample size was $N = 201$. Means, standard deviations and bivariate correlations can be found in Table 1.

Multiple Regression

In the multiple regression model, perfectionism dimensions explained 2% of the variance in doping willingness. When controlling for the relationship between perfectionistic strivings and perfectionistic concerns, perfectionistic concerns had a small positive and significant relationship with doping willingness ($\beta = .13$), whereas perfectionistic strivings had a nonsignificant relationship with doping willingness ($\beta = -.01$).

Path Model

The hypothesised model provided good fit to the data (χ^2 (2) = 1.33, $p > .05$, CFI = 1.00, TLI = 1.01, RMSEA = .00, SRMR = .02). The size and significance of standardized model paths can be found in Figure 1. The model showed that perfectionistic concerns was a positive predictor of moral disengagement, while perfectionistic strivings was a nonsignificant predictor of moral disengagement. Moral disengagement was a positive predictor of doping willingness.[1]

Indirect Effects

A significant positive indirect effect was found for the relationship between perfectionistic concerns and doping willingness via moral disengagement (indirect effect = .12; 95% CI = .02 to .21). However, the indirect effect for the relationship between perfectionistic strivings and doping willingness via moral disengagement was nonsignificant (indirect effect = –.05; 95% CI = –.14 to

---

[1] We ran a path model that included the direct effects of perfectionism on doping willingness. Neither path was significant (perfectionistic strivings -> doping willingness = .04, $p > .05$; perfectionistic concerns -> doping willingness = .02, $p > .05$). Due to the direct effects model having 0 degrees of freedom we were not able to test fit.

.05).

Discussion

The aims of the present study were to examine whether multidimensional perfectionism was related to doping willingness directly and indirectly via moral disengagement. In partial support of the hypotheses, although the bivariate correlation was nonsignificant, perfectionistic concerns was positively associated with doping willingness when controlling for perfectionistic strivings in the regression model. Moreover, moral disengagement mediated the relationship between perfectionistic concerns and doping willingness. In line with the hypotheses, perfectionistic strivings was not associated with doping willingness nor moral disengagement.

Perfectionism and Doping Willingness

The findings in the present research align with previous work illustrating that perfectionistic concerns is important in relation to doping, whereas, perfectionistic strivings does not appear to be linked (e.g., Madigan et al., 2020). Accordingly, it appears that perfectionistic concerns may be the catalyst for dark striving and the foundation for perfectionistic reactivity (Flett & Hewitt, 2016), in the form of doping willingness, that could serve as the basis for doping behaviour. As such, perfectionistic concerns would appear most relevant in future work and interventions that consider the role of perfectionism in understanding and preventing doping in sport.

It is notable that the significant positive relationship between perfectionistic concerns and doping willingness only emerged after controlling for the overlap between perfectionism dimensions, as evidenced in the multiple regression. By contrast, the bivariate correlation between perfectionistic concerns and doping willingness was nonsignificant. Differences in the magnitude and significance of associations between perfectionism dimensions and behavioral outcomes are common, depending on whether or not the overlap between perfectionistic concerns and perfectionistic strivings is controlled (Hill, 2014). Indeed, in recent studies, the relationships between perfectionistic concerns and doping-related outcomes are typically stronger, when the

overlap between perfectionism dimensions is controlled (e.g., Madigan et al., 2020). Together, these findings highlight the importance of reporting analyses in which the overlap between perfectionistic dimensions is free to vary as well as controlled, when examining the relationships between perfectionism and doping.

The Role of Moral Disengagement

Our findings provide the first insights into variables that account for why perfectionism is related to athletes' willingness to dope. Specifically, perfectionistic concerns was positively linked with moral disengagement, which in turn, was positively linked with doping willingness. In accord, it appears that athletes higher in perfectionistic concerns, so as to avoid self-reproof, are more likely to morally disengage to justify doping, which in turn increases their willingness to engage in doping behaviours. Educational interventions seeking to moderate the consequences of perfectionistic concerns could therefore incorporate strategies targeted at reducing athletes' propensity to morally disengage.

Limitations and Future Research

Firstly, our sample included student athletes who competed across a range of different sports and levels of competition. Given the different prevalence levels of doping in different sports, and the varied demands of non-elite, sub-elite and elite sport, future work may benefit from more targeted samples to identify when perfectionism places athletes most at risk of doping. Second, while cross-sectional studies are required to test the initial plausibility of hypothesised relationships, longitudinal studies provide stronger tests of mediation, and should therefore be a priority of future research in this area. Lastly, there was also a possibility of socially desirable responding in relation to completion of items pertaining to socially stigmatised behaviours, such as doping. While we didn't formally assess social desirability, the mean scores for moral disengagement and doping willingness in our study were low. Broader evidence of socially desirable responding is equivocal for doping moral disengagement (Kavussanu et al., 2016) and

doping willingness (Stanger et al., 2020). However, further work may wish to control for the

possibility of such biased responding, and in doing so determine whether the relationships found in

the present research are strengthened. Finally, other aspects of perfectionism (e.g., moral

perfectionism, Ring et al., 2019) also appear to be relevant for doping related outcomes, and

therefore, warrant further investigation.

Conclusion

Our findings provide the first evidence that perfectionism is related to doping willingness.

and perfectionistic concerns largely accounts for this association, but only when the overlap with

perfectionistic strivings is controlled. In addition, perfectionistic concerns is associated with higher

propensity to morally disengage, which could help explain why this is the case.

References

Abdollahi, A., Hashemi, F., Faraji, H. R., Hosseinian, S., & Allen, K. A. (2021). Moral disengagement: Mediator between moral perfectionism and Machiavellian behavior among undergraduates?. *Psychological Reports*, *124*(6), 2761-2773.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review, 3*, 193-209. https://doi.org/10.1207/s15327957pspr0303_3

Boardley, I. D., Smith, A. L., Mills, J. P., Grix, J., & Wynne, C. (2017). Empathic and self-regulatory processes governing doping behavior. *Frontiers in Psychology*, *8*, 1495. https://doi.org/10.3389/fpsyg.2017.01495

Dunn, J. G. H., Gotwals, J. K., Dunn, J. C., Selzler, A.-M., Lizmore, M. R., Vaartstra, M., … Gamache, V. E. (2016). A multi-sample investigation of the higher-order latent dimensionality of the sport-multidimensional perfectionism scale-2. *Psychology of Sport and Exercise, 27*, 150–156. https://doi.org/10.1016/j.psychsport.2016.08.006

Flett, G. L., & Hewitt, P. L. (2014). The perils of perfectionism in sports" revisited: Toward a broader understanding of the pressure to be perfect and its impact on athletes and dancers. *International Journal of Sport Psychology, 45*, 395-407.

Flett, G. L., & Hewitt, P. L. (2016). Reflections on perfection and the pressure to be perfect in athletes, dancers, and exercisers: a focus on perfectionistic reactivity in key situations and life contexts. In A.P. Hill, *The psychology of perfectionism in sport, dance and exercise (pp.*, 296-319). Abingdon, UK: Routledge.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468. https://doi.org/10.1007/BF01172967

Gleaves, J., Petróczi, A., Folkerts, D., De Hon, O., Macedo, E., Saugy, M., & Cruyff, M. (2021). Doping prevalence in competitive sport: Evidence synthesis with "best practice"

recommendations and reporting guidelines from the WADA Working Group on Doping

   Prevalence. Sports Medicine, 51(9), 1909-1934. https://doi.org/10.1007/s40279-021-01477-y

Gotwals, J. K., & Dunn, J. G. (2009). A multi-method multi-analytic approach to establishing

   internal construct validity evidence: The Sport Multidimensional Perfectionism Scale 2.

   Measurement in Physical Education and Exercise Science, 13(2), 71-92.

   https://doi.org/10.1080/10913670902812663

Hardwick, B., Madigan, D. J., Hill, A. P., Kumar, S., & Chan, D. K. (2022). Perfectionism and

   attitudes towards doping in athletes: The mediating role of achievement goal

   orientations. *International Journal of Sport and Exercise Psychology*, *20*(3), 743-756.

Hill, A. P. (2014). Perfectionistic strivings and the perils of partialling. *International Journal*

   of Sport and Exercise Psychology, *12*(4), 302–315.

   https://doi.org/10.1080/1612197x.2014.919602

Hill, A. P. (2016). *The psychology of perfectionism in sport, dance and exercise.* London:

   Routledge.

Hill, A. P., Mallinson-Howard, S. H., & Jowett, G. E. (2018). Multidimensional perfectionism in

   sport: A meta-analytical review. *Sport, Exercise, and Performance Psychology, 7*, 235-270.

   https://doi.org/10.1037/spy0000125

Kavussanu, M., Hatzigeorgiadis, A., Elbe, A-M., & Ring, C. (2016). The moral disengagement in

   doping scale. *Psychology of Sport & Exercise, 24*, 188-198.

   https://doi.org/10.1016/j.psychsport.2016.02.003

Kavussanu, M., & Ring, C. (2017). Moral Identity Predicts Doping Likelihood via Moral

   Disengagement and Anticipated Guilt. *Journal of Sport & Exercise Psychology, 20*, 1-9.

   https://doi.org/10.1123/jsep.2016-0333

Madigan, D. J., Mallinson-Howard, S. H., Grugan, M. C., & Hill, A. P. (2020). Perfectionism and

   attitudes towards doping in athletes: A continuously cumulating meta-analysis and test of the

2 × 2 model. *European Journal of Sport Science, 20*, 1245-1254.

https://doi.org/10.1080/17461391.2019.1698660

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*, 320-341.

https://doi.org/10.1207/s15328007sem1103_2

Nicholls, A. R., Madigan, D. J., Duncan, L., Hallward, L., Lazuras, L., Bingham, K., & Fairs, L. R. W. (2020). Cheater, cheater, pumpkin eater: The dark triad, attitudes towards doping, and cheating behavior among athletes. *European Journal of Sport Science, 20*, 1124-1130.

https://doi.org/10.1080/17461391.2019.1694079

Ring, C., Kavussanu, M., & Mazanov, J. (2019). Self-other judgments of doping likelihood and anticipated guilt in hypothetical situations. *Psychology of Sport and Exercise, 41,* 46-53.

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*, 359-371. https://doi.org/10.1111/j.1751-9004.2011.00355.x

Stanger, N., & Backhouse, S. H. (2020). A multistudy cross-sectional and experimental examination into the interactive effects of moral identity and moral disengagement on doping. *Journal of Sport & Exercise Psychology, 42*, 185-200. https://doi.org/10.1123/jsep.2019-0097

Stanger, N., Whitaker, L., & Backhouse, S. H. (2020). Testing the validity and reliability of the doping willingness in sport scale. *Scandinavian Journal of Medicine & Science in Sports, 30(8)*, 1529-1543. https://doi.org/10.1111/sms.13683

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.

World Anti-Doping Code 202 (2021). Available online at: https://www.wada-ama. org/en/resources/world-anti-doping-program/world-anti-doping-code

Whitaker, L., Backhouse, S., & Long, J. (2017). Doping vulnerabilities, rationalisations and contestations: the lived experience of national level athletes. *Performance Enhancement & Health, 5*, 134-141. https://doi.org/10.1016/j.peh.2017.06.001

Whitaker, L., Long, J., Petroczi, A., & Backhouse, S. (2014). Using prototype willingness model to predict doping in sport. *Scandinavian Journal of Medicine & Science in Sports, 24*, e398-e405. https://doi.org/10.1111/sms.12148

Table 1. *Descriptive Statistics, Bivariate Correlations and Cronbach's Alphas,*

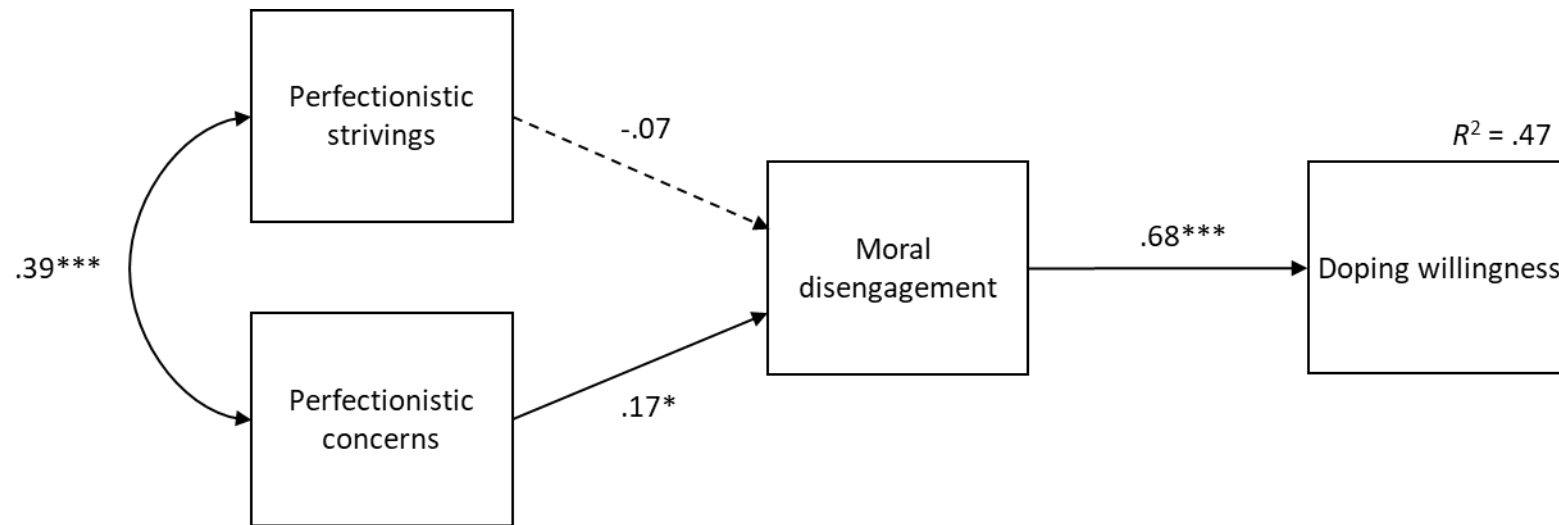| Variable	1	2	3	4
1. Perfectionistic strivings	-			
2. Perfectionistic concerns	.39***	-		
3. Moral disengagement	-.01	.14*	-	
4. Doping willingness	.05	.13	.68***	-
Mean	3.28	2.70	1.83	1.67
SD	0.68	0.62	0.83	0.81
Scale	1-5	1-5	1-7	1-5
α	.88	.85	.75	.94

Note. n = 201.

Figure 1. Empirical mediation model of perfectionism, moral disengagement, and doping willingness ($N = 201$). * $p < .05$. *** $p <$

.001 (Dashed path = nonsignificant.).