UNIVERSITY OF BIRMINGHAM
University of Birmingham Research at Birmingham

Moral Identity Predicts Doping Likelihood via Moral Disengagement and Anticipated Guilt

Kavussanu, Maria; Ring, Christopher

DOI:
10.1123/jsep.2016-0333

License:
None: All rights reserved

Document Version
Peer reviewed version

Citation for published version (Harvard):
Kavussanu, M & Ring, C 2017, 'Moral Identity Predicts Doping Likelihood via Moral Disengagement and Anticipated Guilt', *Journal of Sport and Exercise Psychology*, vol. 39, no. 4, pp. 293-301. https://doi.org/10.1123/jsep.2016-0333

Link to publication on Research at Birmingham portal

Publisher Rights Statement:
As accepted for publication on https://doi.org/10.1123/jsep.2016-0333

General rights
Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

•Users may freely distribute the URL that is used to identify this publication.
•Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
•User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
•Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy
While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Download date: 01. May. 2024

Moral Identity, Moral Disengagement and Anticipated Guilt Predict Doping Likelihood in Amateur Athletes

Maria Kavussanu & Christopher Ring

University of Birmingham, UK

Accepted for Publication on 1 October, 2017

by Journal of Sport and Exercise Psychology

Abstract

In this study, we integrated elements of social cognitive theory of moral thought and action (Bandura, 1991) and the social cognitive model of moral identity (Aquino & Reed, 2002) to better understand doping likelihood in amateur athletes. Participants (N = 398) recruited from a variety of team sports completed measures of moral identity, moral disengagement, anticipated guilt and doping likelihood. Moral identity predicted doping likelihood indirectly via moral disengagement and anticipated guilt. Anticipated guilt about potential doping mediated the relationship between moral disengagement and doping likelihood. Our findings provide novel evidence to suggest that athletes, who feel that being a moral person is central to their self-concept are less likely to use banned substances due to their lower tendency to morally disengage and the more intense feelings of guilt they expect to experience for using banned substances.

Keywords: affective self-sanction; social cognitive theory; banned substances

Moral Identity, Moral Disengagement and Guilt Predict Doping Likelihood in Amateur Athletes

The psychological factors associated with the use of banned performance-enhancing substances or methods in sport, also known as doping, have received increased research attention in recent years (see Ntoumanis, Ng, Barkoukis, & Backhouse, 2014). Identifying such factors is important, as this knowledge would enable us to design interventions to prevent doping in sport. There is growing evidence that not only professional but also amateur athletes consume banned performance-enhancing substances (e.g., Locquet et al., 2017; Zabala, Morente-Sánchez, Mateo-March, & Sanabria, 2016). Therefore, research into doping in amateur competitive athletes is important. A number of psychological models have been proposed to explain doping in sport (e.g., Barkoukis, Lazuras, & Tsorbatzoudis, 2016; Donovan, Egger, Kapernick, & Mendoza, 2002). The aim of the present research was to extend previous work by testing a model of doping based on Bandura's (1991) social cognitive theory of moral thought and action and the socio-cognitive model of moral identity (Aquino & Reed, 2002).

Social Cognitive Theory and Doping

Bandura (1991) proposed that individuals develop moral standards through socialization experiences and interaction with others, for example, by observing significant others and through reinforcement and punishment. These moral standards help regulate behavior via evaluative affective self-reactions. People feel satisfaction and pride when they act in line with their moral standards, and experience negative emotions, such as shame or guilt, when they do not act in line with these standards. These self-sanctions regulate behavior anticipatorily, whereby individuals tend to avoid behaviors that will evoke self-condemnation (Bandura, 1991, 2002). Thus, anticipated negative emotion is a key regulator of unethical behavior. Indeed, anticipated negative feelings (e.g., guilt, regret, shame) about

possible doping have been negatively associated with doping intentions[1] in adolescent and adult athletes (Barkoukis, Lazuras, & Harris, 2015; Lazuras, Barkoukis, & Tsorbatzoudis, 2015; Ring & Kavussanu, 2017).

Although moral standards are assumed to regulate behavior via affective self-sanctions, people do not always act as they should. They are able to engage in transgressive behavior without feeling bad about it, via the use of cognitive mechanisms, known as moral disengagement. Bandura (1991, 1999) described eight mechanisms of moral disengagement; however, only six are relevant to doping (see Kavussanu, 2016; Kavussanu, Hatzigeorgidadis, Elbe, & Ring, 2016; Lucidi et al., 2008; Mallia et al., 2016). These are: (a) moral justification, for example, doping is justified as done for a higher social purpose, such as to feed one's family or to help one's country; (b) advantageous comparison, when doping is contrasted to other less severe behaviors, thereby appearing not as serious; (c) euphemistic labeling, when athletes who dope use sanitizing language by referring to doping as "juice" or to EPO as "altitude training in a bottle"; (d) diffusion of responsibility (e.g., "everyone in the team is doing it"); (e) displacement of responsibility, where responsibility for one's transgressive behavior is displaced on others (e.g., "my coach told me to do it"); and (f) distortion of consequences, for example, when athletes downplay the negative consequences of their transgressive behavior for others. Moral disengagement has been positively associated with both doping temptation (Hodge, Hargreaves, Gerrard, & Lonsdale, 2013) and doping intentions in several studies (Kavussanu et al., 2016; Ntoumanis, Barkoukis, Gucciardi, & Chan, 2017; Ring & Kavussanu, 2017; Zelli, Mallia, & Lucidi, 2010).

As indicated above, Bandura (1991) proposed that moral disengagement enables individuals to engage in transgressive behavior, by reducing the anticipated negative affective reactions, such as guilt, which would normally arise from engaging in such behavior. Guilt, a self-conscious moral emotion arising from moral transgression, is a key regulator of moral

action (Tangney, Stuewig, & Mashek, 2007; Zebel, Doosje, & Spears, 2009). In his seminal study, which examined moral disengagement empirically, Bandura and colleagues (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996) reported that moral disengagement was a negative predictor of anticipated guilt, which in turn negatively predicted aggressive behavior in school children. In the context of sport, Stanger, Kavussanu, Boardley and Ring (2013) showed that moral disengagement predicted athletes' antisocial behavior both directly and indirectly via anticipated guilt. However, to date, only one study has investigated the mediating role of anticipated guilt in the relationship between moral disengagement and doping likelihood. Specifically, Ring and Kavussanu (2017) found evidence consistent with this mediating role in a sample of university athletes. There is a need to determine whether these findings are replicated in a larger, independent sample of athletes, from a more diverse age group, that is more representative of adult sport. In addition, research is needed to identify factors that influence moral disengagement.

Moral Identity and Doping

Building, in part, on the social cognitive model of moral behavior (Bandura, 1991), Aquino and Reed (2002) described the psychological construct of moral identity, as a self-regulatory mechanism. They defined moral identity as "a self-conception organized around a set of moral traits" (Aquino & Reed, 2002, p. 1424) and proposed that people vary in the degree to which they consider being a good or moral person a central part of their self-concept. Moral identity is a strong source of moral motivation, that is, the motive to behave morally, due to individuals' desire to maintain consistency between conceptions of their moral self and their actions (Aquino, Freeman, Reed, Lim, & Felps, 2009; Blasi, 1984). Indeed, individuals whose moral identity was central to their self-concept were less likely to lie in a salary negotiation (Aquino et al., 2009) and more likely to avoid antisocial behavior (Hertz & Krettenauer, 2016). In the context of sport, athletes with strong moral identity

reported less frequent antisocial behavior toward their opponents (Kavussanu, Stanger, & Boardley, 2013; Kavussanu, Stanger, & Ring, 2015). However, to date, no study has investigated whether moral identity predicts the doping likelihood in sport.

Moral identity could deter individuals from doping by acting on the two variables discussed in the previous section, namely moral disengagement and anticipated guilt. It is reasonable to expect that the individual, who places high importance on being a moral person, should experience more guilt, if he or she behaved badly, as this behavior would not be compatible with the person's view of the self as moral. Indeed, moral identity was positively associated with anticipated guilt in athletes, who were faced with the possibility of acting antisocially, in both cross-sectional and experimental research (Kavussanu et al., 2013, 2015). Moral identity should also reduce the tendency to morally disengage, as one would be motivated to act morally, in order to keep one's actions in line with one's self-concept as a moral person, therefore not needing to justify unethical behavior. Indeed, moral identity has been inversely associated with moral disengagement in past research (Detert, Trevino, & Sweitzer, 2008; Kavussanu et al., 2016).

The Present Research

Considerable research evidence has been accumulated indicating that moral disengagement is positively related to doping variables (e.g., Hodge et al., 2013; Kavussanu et al., 2016; Ntoumanis et al., 2017). However, to date, only one study has investigated whether anticipated guilt mediates the relationship between moral disengagement and doping likelihood (Ring & Kavussanu, 2017). This study used exclusively university athletes, of a limited age range, thus their findings have limited generalizability. Therefore, the first purpose of this study was to examine whether anticipated guilt mediates the relationship between moral disengagement and doping likelihood in an independent and more diverse sample of athletes. We expected to replicate findings of previous research (Ring &

Kavussanu, 2017). The second purpose of this study was to investigate whether moral identity is associated with doping likelihood and whether this relationship is mediated by moral disengagement and anticipated guilt. Based on previous findings on antisocial sport behavior (Kavussanu et al., 2013, 2015), we hypothesized that moral identity would be inversely associated with doping likelihood, and that this relationship would be mediated by moral disengagement and guilt (e.g., Detert et al., 2008; Kavussanu et al., 2015).

Method

Participants

Participants were 398 (233 males) club and college athletes participating in five team sports (netball, rugby, football, basketball, korfball) recruited from competitive adult regional (*n* = 281; 70.6%) and college (Division I and II) leagues in the West Midlands region of the United Kingdom. At the time of data collection, participants ranged in age from 16[2] to 40 years, had competed in their sport for an average of 9.06 (*SD* = 4.22) years, had played for their current team for an average of 2.88 (*SD* = 3.11) years, and had played under their current coach for an average of 2.35 (*SD* = 2.69) years.

Measures

Doping likelihood.

One of the difficulties in doping research is that doping is an illegitimate behavior, to which athletes are naturally reluctant to admit. To circumvent this issue, most researchers measure variables such as doping intentions (e.g., Lazuras et al., 2015), temptation (Hodge et al., 2013; Ntoumanis et al., 2017) or likelihood (e.g., Kavussanu et al., 2016), as proxies for doping behavior. In line with previous research (Kavussanu et al., 2016; Ring & Kavussanu, 2017), we asked participants to report their likelihood of doping in two hypothetical situations, in which they could use a banned substance to (a) enhance performance and (b) aid recovery from injury[3]. These two scenarios were used because consultation with elite

athletes suggested that fitness-related performance enhancement and injury recovery are two of the most common reasons athletes decide to use banned substances (also see Huybers & Mazanov, 2012; Whitaker & Backhouse, 2016).

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

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

After reading each scenario, participants indicated the likelihood that they would use the banned substance on a Likert scale, anchored by 1 (*not at all likely*) and 7 (*very likely*). Although the mean ratings for the injury scenario were higher than those of the performance-enhancing scenario, these ratings were also highly related to each other (r =

.71, $p < .001$); thus, the average of the two ratings was used to measure doping likelihood. The internal consistency of the scores of this combined measure was very good ($\alpha = .81$).

Moral disengagement.

The moral disengagement in doping scale (Kavussanu et al., 2016) was used to measure doping moral disengagement. Participants were asked to indicate their level of agreement with six statements (e.g., "Doping does not really hurt anyone", "Compared to the illegal things people do in everyday life, doping in sport is not very serious") using a Likert scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). The scale has shown good internal consistency ($\alpha = .78 - .86$), test-retest reliability ($r = .78$), and factorial, convergent, and concurrent validity (Kavussanu et al., 2016). The mean of the six item ratings was computed and used as a measure of doping moral disengagement; internal consistency of the scale scores in the present study was good ($\alpha = .75$).

Moral identity.

The internalization dimension of the moral identity scale (Aquino & Reed, 2002) was used to measure moral identity. Participants were presented with nine traits (e.g., fair, honest, helpful, kind, generous, compassionate, etc) considered common characteristics of moral persons and were asked to respond to five statements concerning these traits (e.g., "It would make me feel good to be a person who has these characteristics") on a Likert scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). This scale has shown very good internal consistency in previous research ($\alpha = .83$; Aquino & Reed, 2002). The mean of the five item ratings was computed and used as a measure of moral identity; internal consistency of the scale scores was very good ($\alpha = .81$).

Procedure

After obtaining ethical approval, participants were recruited from sports teams participating in local competitive leagues and university teams in the UK. Data were

collected by research assistants either at the beginning or at the end of a training session. Participants were instructed to complete the questionnaires as carefully as possible. They were informed about the study's aims, that participation was voluntary, honesty in responses was vital, and data would be kept strictly confidential and used only for research purposes. Next, participants indicated consent with taking part in the study and completed the questionnaires described above. The questionnaires were completed anonymously and without the coach present to minimise socially-desirable responding.

Results

Preliminary Analyses

Prior to our main data analysis, we conducted preliminary analyses to examine missing values, outliers, normality, skewness, kurtosis and internal consistency of the scales (Tabachnick & Fidell, 2007). These analyses indicated that 0.2% of the data points were missing. When less than 5% of the data are missing, any method for replacing missing data is acceptable (Tabachnick & Fidell, 2007); therefore, we replaced missing data with the series mean. There were no outliers, identified as scores more than 3.29 *SD* from the mean. Skewness and kurtosis were low (i.e., < 2) for all variables (Tabachnick & Fidell, 2007). All scale scores exhibited good internal consistency (see Table 1).

Descriptive Statistics and Zero-Order Correlations

The mean measure scores (Table 1) showed that players were characterized by relatively high moral identity, low moral disengagement, and high anticipated guilt, and were not likely to use banned substances. The zero-order correlations indicated that moral identity was negatively associated with doping likelihood and moral disengagement, and positively associated with anticipated guilt. Doping likelihood was also positively associated with moral disengagement and negatively associated with guilt.

Main Analyses

The first purpose of this study was to determine whether anticipated guilt mediates the relationship between moral disengagement and doping likelihood, in line with previous research (Ring & Kavussanu, 2017). The second purpose was to examine whether moral identity was associated with doping likelihood and whether this relationship was mediated by moral disengagement and anticipated guilt. We examined both purposes in a single model using the PROCESS 2.16 (Hayes, 2013) SPSS macro (model 6), which simultaneously tests direct and indirect effects, in serial mediation models. Direct effects are the effects of the predictor on the outcome variable that occur independently of the mediator(s), while indirect effects are the effects of the predictor on the outcome variable via the mediator(s). Bootstrapping was set at 10,000 samples. Bias corrected 95% Confidence Intervals (CI) were estimated for all effects. An effect was significant when the CI did not contain zero. The Completely Standardized Indirect Effect (CSIE) was reported as the effect size metric (Preacher & Kelley, 2011), with values of .01, .09, and .25 representing small, medium, and large effect sizes, respectively (Cohen, 1992).

Results of these analyses are presented in Table 2 and Figure 1. With respect to the first study purpose, it can be seen that anticipated guilt significantly mediated the relationship between moral disengagement and doping likelihood: indirect effect = .40, 95% CI =.31, .50; CSIE = .28, 95% CI = .22, .35. Moral disengagement had a strong negative effect on anticipated guilt, which also had a negative effect on doping likelihood. With respect to the second study purpose, moral identity was not directly related to doping likelihood in the model (Table 2, Figure 1). Results of mediation analysis (Table 2 and Figure 1) show that moral identity had a direct negative effect on moral disengagement and a positive effect on guilt. Importantly, moral identity had significant indirect effects on doping likelihood via moral disengagement, anticipated guilt, and moral disengagement, then guilt (see Table 2). These findings provide support for the mediating role of both moral disengagement and

anticipated guilt on the relationship between moral identity and doping likelihood. Overall, the model accounted for 59% of the variance in doping likelihood, $F(4, 394) = 186.11$, $p < .001$, $R = .77$.

Discussion

Bandura's (1991) social cognitive theory of moral thought and action provides a useful theoretical framework to help understand doping in sport. In this study, we integrated elements from the social cognitive theory and the model of moral identity proferred by Aquino and Reed (2002) to examine doping likelihood in amateur athletes. Specifically, we investigated whether moral identity predicted doping likelihood both directly and indirectly via moral disengagement and/or anticipated guilt in a sample of college and club-level athletes.

Moral Disengagement and Doping

In support of our hypothesis, we found that the relationship between moral disengagement and doping likelihood was mediated by anticipated guilt. Moral disengagement was a negative predictor of anticipated guilt, which in turn negatively predicted doping likelihood. This mediation pathway has also been revealed in previous research examining doping likelihood in athletes (Ring & Kavussanu, 2017) and other forms of transgressive behavior in sport (e.g., Stanger et al., 2013) and school (e.g., Bandura et al., 1996). This finding supports a main tenet of social cognitive theory (Bandura, 1991), namely that moral disengagement enables individuals to engage in transgressive conduct by reducing the anticipated affective self-sanctions, typically associated with such conduct.

Our result highlights the important role of emotion on doping. The moral emotion of guilt is elicited by moral transgressions and is assumed to regulate behavior because people strive to minimize affective dissonance elicited by threats to the moral self (e.g., Tangney et al., 2007). Other studies have also reported that anticipated regret and guilt about potential

doping were inversely associated with doping intentions (e.g., Barkoukis et al., 2015; Lazuras et al., 2015; Ring & Kavussanu, 2017). Taken together with past work, our findings suggest that negatively-valenced self-conscious emotions such as guilt can act as self-sanction that thwarts doping by athletes.

In addition to the indirect effect via anticipated guilt, moral disengagement also had a direct effect on doping likelihood suggesting that guilt may only partially mediate the relationship between the two variables. Thus, moral disengagement may operate on doping likelihood via other processes, besides reducing guilt, for example, by promoting positively valenced emotions. Specifically, it is possible that reframing an act as laudatory or praiseworthy may bring positive affective responses into play in support of committing the unethical act of doping. It is also possible that simply morally disengaging enables athletes to use banned substances. In a recent meta-analysis (Ntoumanis et al., 2014), moral disengagement was one of the strongest and most reliable predictors of doping variables. The tendency to use rationalizations for cheating could facilitate cheating behavior, and anticipated guilt may not be the only variable that plays a role in this process.

It is also worth noting that we causally ordered our variables to be in line with the seminal work by Bandura et al (1996) investigating moral disengagement as a predictor of transgressive behavior, in school children, as well as with previous cross-sectional (e.g., Boardley & Kavussanu, 2009, 2010; d'Arripe-Longueville et al., 2010; Hodge et al., 2013) and experimental (Stanger et al., 2013) sport research, treating moral disengagement as an antecedent of transgressive behavior in sport. However, moral disengagement could also follow transgressive behavior. That is, once a person has committed a transgression, the need to alleviate the ensuing negative affect should trigger the use of moral disengagement mechanisms. Indeed, a recent study showed that moral disengagement increased after participants cheated during an experiment (Shu, Gino, & Bazerman, 2011). It would be

interesting to determine, in a single study, the degree to which moral disengagement and transgressive behavior influence each other.

The Role of Moral Identity on Doping

In line with our hypothesis, moral identity was inversely associated with doping likelihood: Athletes who felt that being a moral person is central to their self-concept were less likely to use banned substances to enhance their performance and recover from injury. This finding supports and extends past work, which has shown a link between moral identity and antisocial behavior in sport (e.g., Kavussanu et al., 2013, 2015), as well as unethical conduct in other contexts (Hertz & Krettenauer, 2016). Like other transgressive acts, doping may be viewed as unethical behavior, which is not compatible with the perception of the (doping) athlete, as a moral person.

Another interesting finding of our study was that the relationship between moral identity and doping likelihood was mediated by moral disengagement. The negative association between moral identity and moral disengagement is in line with evidence suggesting that moral identity operates as an antecedent of moral disengagement (e.g., Detert et al., 2008). Although Bandura (1991, 1999) does not refer to moral identity specifically, he mentions moral standards as important regulators of moral conduct. Moral identity has been proposed as another self-regulatory mechanism (Aquino & Reed, 2002), which may be somewhat similar to the concept of moral standards. Specifically, it is reasonable to assume that people, who have a strong moral identity would also have high moral standards, as these individuals consider being moral (which is translated into doing good things) as important and central to their self-concept. Our findings have theoretical implications and suggest that people who are likely to morally disengage may simply not have very high moral standards and that being a moral person is not that important to them.

The relationship between moral identity and doping likelihood was also mediated by anticipated guilt. This suggests that athletes with a strong moral identity may be deterred from using banned substances, because they would expect to experience intense guilt for acting in this manner. Guilt is an important deterrent of unethical behavior (e.g., Kavussanu et al., 2015; Tangney et al., 2007), and people with a strong moral identity would feel guilty for acting in an unethical manner. The emotional experience elicited by wrongdoing could be augmented by strengthening one's moral identity. Overall, our results underline the important role of moral identity in doping.

Practical Implications

Our findings have some implications for practitioners, who wish to alleviate doping from sport. They clearly show that both moral identity and moral disengagement are indirectly related to doping likelihood via anticipated guilt. Thus, practitioners need to focus on strengthening athletes' moral identity and reduce their tendency to morally disengage. People with a strong moral identity consider being a good or moral person a central part of their self-concept, that is, it is important to them to be moral. To strengthen moral identity, coaches could emphasize the importance of acting in an ethical manner when taking part in sport. They could also reduce moral disengagement by challenging athletes' justifications for doping, and facilitating moral engagement. For example, the distortion of consequences mechanism, exemplified in the statement "doping does not hurt anyone" could by challenged by pointing out that doping does hurt others and is a threat to the integrity of sport, as it compromises fair play. Overall, the findings point to the importance of focusing on moral variables in eliminating doping from sport.

Limitations of the Study and Directions for Future Research

In this study, we reported some interesting findings. However, it is prudent to consider potential limitations when interpreting these findings. First, the sample was

characterized by relatively low moral disengagement and doping likelihood. It remains to be seen whether our model holds in athletes with higher scores on these variables. Second, we examined doping likelihood only in relation to two hypothetical scenarios. Future research could investigate the influence of moral cognition and emotion on doping likelihood and intentions across a broad range of situations, including circumstances relating to performance outcomes, sources of influence, and rewards and punishments (see Huybers & Mazanov, 2012).

Third, our participants came from a variety of team sports. It would be interesting to examine whether our model is replicated in athletes from a variety of individual sports. Fourth, we did not use a social desirability scale. We did not see the need for this because the questionnaires were completed anonymously, and participants referred to hypothetical situations indicating their doping likelihood, rather than explicitly indicating whether they had used banned substances. Although we are confident that they responded honestly, future research could include a social desirability scale to determine whether responses are affected by social desirability. Finally, we used a cross-sectional design and therefore we cannot make firm assertions about the direction of causality. We can simply say that our mediation analysis provided evidence that is consistent with the conceptual model that we tested. It would be enlightening to attempt to replicate the present findings using longitudinal and experimental designs, which provide clear evidence for the direction of causality.

References

Aquino, K., & Reed, A. (2002). The self-importance of moral identity. *Journal of Personality and Social Psychology, 83,* 1423-1440.

Aquino, K., Freeman, D., Reed, A. II, Lim, V. K. G., & Felps, W. (2009). Testing a social cognitive model of moral behavior: The interaction of situational factors and moral identity centrality. *Journal of Personality and Social Psychology, 97,* 123-141.

Bandura, A. (1990). Selective activation and disengagement of moral control. *Journal of Social Issues, 46*, 27-46.

Bandura, A. (1991). Social cognitive theory of moral thought and action. In W.M. Kurtines & J.L. Gewirtz (Eds.), *Handbook of moral behavior and development: Theory, research, and applications* (Vol. 1, pp. 71-129). Hillsdale, NJ: Lawrence Erlbaum Associates.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review, 3*, 193–209.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1-26.

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31*, 101-119.

Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology, 71,* 364-374.

Bandura, A., Caprara, G.V., Barbaranelli, C., Pastorelli, C., & Regalia, C. (2001). Sociocognitive self-regulatory mechanisms governing transgressive behavior. *Journal of Personality and Social Psychology, 80,* 125-135.

Barkoukis, V., Lazuras, L., & Harris, P. R. (2015). The effects of self-affirmation manipulation on decision making about doping use in elite athletes. *Psychology of Sport and Exercise, 16,* 175-181.

Barkoukis, V., Lazuras, L., & Tsorbatzoudis, H. (2016). *The psychology of doping in sport.* New York: Routledge.

Barkoukis, V., Lazuras, L., Tsorbatzoudis, H., Rodafinos, A. (2013). Motivational and social cognitive predictors of doping intentions in elite sports: An integrated approach. *Scandinavian Journal of Medicine and Science in Sports, 5,* e330-e340.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

Detert, J., Trevino, L., & Sweitzer, V. (2008). Moral disengagement in ethical decision making: A study of antecedents and outcomes. *Journal of Applied Psychology, 93,* 374-391.

Donovan, R.J., Egger, G., Kapernick, V., & Mendoza, J. (2002). A conceptual framework for achieving performance enhancing drug compliance in sport. *Sports Medicine, 32,* 269-284.

Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Hertz, S.G., & Krettenauer, T. (2016). Does moral identity effectively predict moral behavior? A meta-analysis. *Review of General Psychology, 20,* 1-12.

Hodge, K., Hargreaves, E. A., Gerrard, D., & Lonsdale, C. (2013). Psychological mechanisms underlying doping attitudes in sport: Motivation and moral disengagement. *Journal of Sport & Exercise Psychology, 35,* 419-432.

Huybers, T. & Mazanov, J. (2012). What would Kim do? A choice study of projected athlete doping considerations. *Journal of Sport Management, 26*, 322-334.

Kavussanu, M. (2016). Moral disengagement and doping. In: V. Barkoukis, L. Lazuras, & H. Tsorbatzoudis (Eds), *The psychology of doping in sport* (pp. 151-164). New York: Routledge.

Kavussanu, M. (2017). Doping in football: A moral psychology perspective. In J. Bangsbo, P. Krustrup, P. Hansen, L. Ottesen, G. Pfister, & A.M. Elbe (Eds.), *Science and Football VIII*. Routledge.

Kavussanu, M., Elbe, A.M., Hatzigeorgiadis, A. (2015). *A cross-cultural approach to a cross-cultural issue: Psychosocial predictors of doping intentions in young athletes*. Research report submitted to World Anti-Doping Agency Social Science Programme.

Kavussanu, M., Hatzigeorgiadis, A., Elbe, A.M., & Ring, C. (2016). The moral disengagement in doping scale. *Psychology of Sport & Exercise, 24*, 188-198.

Kavussanu, M., Stanger, N., & Boardley, I.D. (2013). The Prosocial and Antisocial Behavior in Sport Scale: Further evidence for construct validity and reliability. *Journal of Sports Sciences, 31,* 1208-1221.

Kavussanu, M., Stanger, N., & Ring, C. (2015). The effects of moral identity on moral emotion and antisocial behavior in sport. *Sport, Exercise and Performance Psychology, 4*, 268-279.

Lazuras, L., Barkoukis, V., Rodafinos, A., & Tsorbatzoudis, H. (2010). Predictors of doping intentions in elite-level athletes: A social cognition approach. *Journal of Sport & Exercise Psychology, 32,* 694-710.

Lazuras, L., Barkoukis, V., & Tsorbatzoudis, H. (2015). Toward an integrative model of doping use: An empirical study with adolescent athletes. *Journal of Sport & Exercise Psychology, 37*, 37-50.

Locquet, M., Beaudart, C., Larbuisson, R., Leclercq, V., Buckinx, F., Kaux, J. F., Reginster, J-Y., & Bruyère, O. (2017). Self-administration of medicines and dietary supplements among female amateur runners: A cross-sectional analysis. *Advances in Therapy, 33*, 2257-2268.

Lucidi, F., Grano, C., Leone, L., Lombardo, C., & Pesce, C. (2004). Determinants of the intention to use doping substances: An empirical contribution in a sample of Italian adolescents. *International Journal of Sport Psychology, 35*, 133-148.

Lucidi, F., Zelli, A., & Mallia, L. (2013). The contribution of moral disengagement to adolescents' use of doping substances. *International Journal of Sport Psychology, 44,* 331-350.

Mallia, L., Lazuras, L., Barkoukis, V., Brand, R., Baumgarten, F., Tsorbatzoudis, H., Zelli, A, & Lucidi, F. (2016). Doping use in sport teams: The development and validation of measures of team-based efficacy beliefs and moral disengagement from a cross-national perspective. *Psychology of Sport & Exercise, 25,* 78-88.

Ntoumanis, N., Ng, J.Y.Y, Barkoukis, V., Backhouse, S. (2014). Personal and psychosocial predictors of doping use in physical activity settings: A meta-analysis. *Sports Medicine, 44*, 1603-1624.

Ntoumanis, N., Barkoukis, V., Gucciardi, D.F., & Chan, D.K.C. (2017). Linking coach interpersonal style with athlete doping Intentions and doping Use: A prospective study. *Journal of Sport & Exercise Psychology, 39*, 188-198. https://doi.org/10.1123/jsep.2016-0243

Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods, 16*, 93-115.

Ring, C., & Kavussanu, M. (2017). The role of self-regulatory efficacy, moral disengagement and guilt on doping likelihood: A social cognitive theory perspective. *Journal of Sports Sciences.* http://dx.doi.org/10.1080/02640414.2017.1324206

Shu, L.L., Gino, F., & Bazerman, M.H. (2011). Dishonest deed, clear conscience: When cheating leads to moral disengagement and motivated forgetting. *Personality and Social Psychology Bulletin, 37,* 330-349.

Stanger, N., Kavussanu, M., Boardley, I.D., & Ring, C. (2013). The influence of moral disengagement and negative emotion on antisocial sport behavior. *Sport, Exercise & Performance Psychology, 2,* 117-129.

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics*. Boston, MA: Allyn & Bacon.

Tangney, J., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology, 58,* 345-372.

Whitaker, L., & Backhouse, S. (2016): Doping in sport: an analysis of sanctioned UK rugby union players between 2009 and 2015. *Journal of Sports Sciences.* http://dx.doi.org/10.1080/02640414.2016.1226509

Zabala, M., Morente-Sánchez, J., Mateo-March, M., & Sanabria, D. (2016). Relationship between self-reported doping behavior and psychosocial factors in adult amateur cyclists. *The Sport Psychologist, 30*, 68-75.

Zebel, S., Doosje, B., & Spears, R. (2009). How perspective-taking helps and hinders group-based guilt as a function of group identification. *Group Processes & Intergroup Relations, 12,* 61-78.

Zelli, A., Mallia, L., & Lucidi, F. (2010). The contribution of interpersonal appraisals to a social-cognitive analysis of adolescents' doping use. *Psychology of Sport and Exercise, 11*, 304-311.

Endnotes

[1]Some of these studies examined doping likelihood rather than doping intention. The term doping intention is used to refer to this work for the sake of conciseness.

[2] In the UK, where this study was conducted, parental consent is required only for participants younger than 16 years.

[3]These scenarios were developed and used in research funded by the World Anti-Doping Agency (Kavussanu, Elbe, & Hatzigeorgiadis, 2015).

Table 1

Descriptive Statistics, Alpha Coefficients, and Zero-Order Correlations (N = 398)

Variable	*M*	*SD*	α	1.	2.	3.
1. Moral identity	5.89	0.90	.79			
2. Moral disengagement	2.29	1.00	.82	–.33 *		
3. Anticipated guilt	4.69	1.74	.94	.30 *	–.57 *	
4. Doping likelihood	2.53	1.41	.79	–.27 *	.65 *	–.70 *

Note. Possible range of all variables was 1-7. * $p < .001$.

1

Table 2. *Direct and Indirect Effects on Moral Disengagement, Guilt Doping and Likelihood (N = 398)*

Pathways		*B*	95% CI	CSIE	95% CI
Direct effects					
MI	→ MD	–.36 ***	–.46, –.26		
	→ Guilt	.25 **	.09, .42		
	→ Doping	.01	–.10, .12		
MD	→ Guilt	–.92 ***	–1.07, –.77		
	→ Doping	.53 ***	.42, .64		
Guilt	→ Doping	–.40 ***	–.46, –.33		
Indirect effects of MD on Doping via					
Guilt		.40*	.31, .50	.28*	.22, .35
Indirect effects of MI on Doping via					
MD		–.19 *	–.29, –.12	–.12 *	–.18, –.08
Guilt		–.10 *	–.18, –.03	–.06 *	–.12, –.02
MD & Guilt		–.13 *	–.20, –.08	–.08 *	–.12, –.05

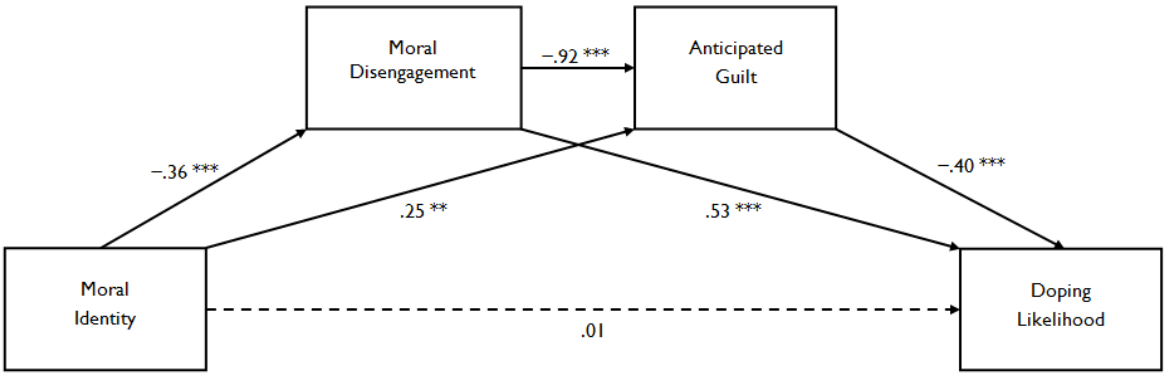
Note. Unstandardized coefficients are shown. MI = moral identity. MD = moral disengagement. Guilt = anticipated guilt. Doping = doping likelihood. CSIE = completely standardized indirect effect, where .01 = small, .09 = medium, and .25 = large.

* $p < .05$; ** $p < .01$; *** $p < .001$

1

Figure 1. The Effects of Moral Identity on Doping Likelihood and the Mediating Role of Moral Disengagement and Anticipated Guilt. Note. The values presented are the unstandardized regression coefficients. A solid line represents a significant relationship.

*** p < .01, **** p < .001.*



1

2

3

4