

Perceptions of Doping in Competitive Male Cyclists Using the Performance Enhancement Attitudes Survey

Research Brief

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Abstract

Introduction: Assessment and evaluation of attitudes on drug use with self-reported measures is a functional technique to capture performance enhancing drug use among competitive athletic populations. The purpose of this study was to compare attitude towards doping measured with the Performance Enhancement Attitude Survey (PEAS) scores across six USA Cycling road racing categories in competitive male cyclists who currently race.

Methods: Eighty (n = 80) competitive male cyclists (mean age = 39; SD = 4.1) consented and provided valid responses on a self-reported questionnaire, the PEAS. Mean PEAS scores were compared across the six racing categories via a one-way ANOVA with post-hoc comparisons.

Results: Category 1 racers score significantly higher on the PEAS compared to all other racing categories ($p < .001$; $p < .001$; $p < .004$; $p < .001$). Category 2 racers differed significantly from the Masters racers only ($p < .038$).

Conclusions: In this current study, it appears that doping perceptions do not differ much within the less skillful racing categories (Cat 3-5, Masters). However, Category 1 and 2 racers both scored highest on the PEAS (35.2 ± 4.9 ; 31.3 ± 7.4) indicating that a more lenient attitude towards doping exists in the more elite racing categories.

Key Words: PEAS, cycling, racers

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Introduction

United States of America (USA) Cycling is the official governing body for all disciplines of competitive cycling in the United States with over 60,000 active members¹. The mission of USA Cycling is for sport development at all levels while fostering a community of safety, integrity, and fun¹. USA Cycling maintains a zero tolerance policy on doping². The monitoring and testing of doping among cyclists is controlled and monitored under the United States Anti-Doping Association (USADA) and calls for all racers to govern themselves according to USADA standards². According to USA Cycling, it is the responsibility of any athlete with firsthand knowledge of doping to report it directly to USADA². During the years 2016-17, a total of 32 American cyclists were sanctioned for a doping violation under the USADA³. According to Dodge & Jaccard, assessing attitudes towards doping among cyclists can lead to an

understanding of underlying motives for using performance enhancing drugs (PED)⁴. Since USA Cycling lacks funds for actual PED testing among all of its licensed racers, assessing their usage perceptions may indicate which racing categories are at higher risk for using PED based on their attitude toward doping. Increasing the number of actual drug tests in categories with higher PEAS scores could serve a more feasible change for prioritizing testing resources. The purpose of this study was to compare attitude towards doping measured with the Performance Enhancement Attitude Survey (PEAS) scores across six USA Cycling road racing categories in competitive male cyclists who currently race.

Methods

Participants

In the United States, road racing categories are stratified based on ability/level of racing with Category 1 being the most skillful and Category 5 being the most amateur. Athletes over the age of 40 years can compete as Masters racers. Following IRB approval, male USA Cycling racers were solicited for survey participation through a link contained on a regional cycling organization website. Eighty (n = 80) competitive male cyclists (mean age = 39) consented and provided valid responses on a self-reported questionnaire.

Protocol

The Performance Enhancement Attitude Survey (PEAS) is a unidimensional 17-item self-reported questionnaire with scores ranging from 17-102. The PEAS was developed as a self-reported questionnaire⁵ to assess lenient attitudes towards PED use. Higher scores on the PEAS represent a more lenient attitude toward doping. An example item on the PEAS is: "Doping is necessary to be competitive." Internal consistency of the PEAS⁶ has been reported from .71-.91 and for this sample was .87.

Statistical Analysis

Prior to statistical analysis, a chi square test of equal group membership was conducted to determine if sample sizes were equal across the racing categories⁷. The number of racers in each category were compared using a one-dimensional chi square test and results indicated that group membership was equal ($\chi^2 = 3.4$; $p = .639$). Thus, mean PEAS scores were compared across the six racing categories via a one-way ANOVA with post-hoc comparisons using IBM SPSS Statistics 24 (24.0, IBM Inc, Armonk, NY). A Tukey's post-hoc comparison was used to determine specific mean differences between racing categories. The probability statistical value of .05 was used in both the ANOVA and Tukey test for this exploratory study.

Results

The means and standard deviations of the PEAS scores relative to racing category are presented in Table 1. Category 1 and Category 2 racers had the highest average PEAS score respectively (M = 35.3; M = 31.3). Results from the one-way ANOVA indicated an overall difference across groups ($F = 7.1$; $p \leq .001$). The Tukey's post-hoc comparison test was used to determine specific mean differences between racing categories. As reported in Table 2, the category of racer that significantly differed from most racing categories was the Category 1 racers with the average mean difference 5.61-9.55. Category 1 racers' PEAS scores did not differ significantly from Category 2 scores. Category 2 racers differed significantly from the Masters racers only ($p \leq .038$). All other between category racer comparisons did not achieve statistical significance.

Table 1. Mean PEAS Scores across Racing Categories

Category	n	M	SD	SE	95% Confidence Interval Lower	Upper
Cat 1	12	35.3	4.9	1.4	32.3	38.1
Cat 2	17	31.3	7.5	1.8	28.8	33.7
Cat 3	17	27.0	4.2	1.0	24.6	29.3
Cat 4	11	26.5	3.6	1.1	23.5	29.5
Cat 5	10	25.7	3.9	1.4	22.9	30.0
Masters	13	28.8	3.2	0.9	22.9	28.4

Data are Means \pm SD

Table 2. Significant Post Hoc Comparisons across Racing Category

Category	M Difference	SE	p
Cat 1 Cat 3	8.25	1.86	.000*
Cat 1 Cat 4	8.71	2.09	.001*
Cat 1 Cat 5	8.75	2.28	.004*
Cat 1 Masters	9.55	2.01	.000*
Cat 2 Masters	5.61	1.84	.038*

*Indicates significant Mean PEAS differences, $p < 0.05$

Discussion

Assessment and evaluation of attitudes on drug use with self-reported measures, such as the PEAS, is a functional technique to capture PED use among competitive athletic populations⁸. To date, there is no study examining attitudes toward PED use across the various USA Cycling racing categories with active racers. Results from this study determined that Category 1 racers have a more lenient attitude towards doping than all other category racers. Such results align with an investigation by Kissalita and Robinson⁹ of 68 recreational cyclists (non-racers) who found a correlation exists between athletes' attitudes toward winning and their desire to use PED. In addition, researchers Zabala and colleagues¹⁰ assessed attitudes towards PED use (PEAS scores) and actual PED use in 45 competitive amateur Spanish cyclists. Their findings suggest a more lenient attitude toward PED use can be a predictor of actual PED use. In this current study, it appears that doping perceptions do not significantly differ within the less skillful racing categories (Cat 3-5, Masters). However, Category 1 and 2 racers both scored significantly higher on the PEAS (35.2 ± 4.9 ; 31.3 ± 7.4) indicating that a more lenient attitude towards doping exists (higher PEAS scores) in the more skillful racing categories.

Media-Friendly Summary

A new frontier of doping may exist in amateur sports. The current study discovered that even amateur cyclists have a lenient attitude towards doping, especially in the more skillful racing categories. The most skillful amateur racers scored highest on a questionnaire that assesses attitudes towards doping when compared to their less skillful amateur counterparts.

No Conflict of Interest

References

1. Cycling U. USA Cycling Mission. 2018; <https://imm.usacycling.org/about-us>.
2. Cycling U. USA Cycling Race Clean. 2018; <https://imm.usacycling.org/resources/race-clean>.
3. Agency USA-D. *Annual Report*. 2016.
4. Dodge T, Jaccard JJ. Is abstinence an alternative? Predicting adolescent athletes' intentions to use performance enhancing substances. *J Health Psychol*. 2008;13(5):703-711.
5. Petróczi A, Aidman EV, Nepusz T. Capturing doping attitudes by self-report declarations and implicit assessment: a methodology study. *Substance abuse treatment, prevention, and policy*. 2008;3(1):9.
6. Petróczi A, Aidman E. Measuring explicit attitude toward doping: Review of the psychometric properties of the Performance Enhancement Attitude Scale. *Psychology of Sport and Exercise*. 2009;10(3):390-396.
7. Gay LR, Mills GE. *Educational Research: Competencies for Analysis and Applications*. 11 ed. Columbus, OH: Pearson Education Limited; 2015.
8. Dunn M, Mazanov J, Sitharthan G. Predicting future anabolic-androgenic steroid use intentions with current substance use: findings from an internet-based survey. *Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine*. 2009;19(3):222-227.
9. Kisaalita NR, Robinson ME. Attitudes and motivations of competitive cyclists regarding use of banned and legal performance enhancers. *Journal of sports science & medicine*. 2014;13(1):44.
10. Zabala M, Morente-Sánchez J, Mateo-March M, Sanabria D. Relationship between self-reported doping behavior and psychosocial factors in adult amateur cyclists. *The Sport Psychologist*. 2016;30(1):68-75.