

prestatiebevorderende middelen bij fitnessbeoefenaars

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J.H. Stubbe (TNO Kwaliteit van Leven)
A.M.J. Chorus (TNO Kwaliteit van Leven)
L.E. Frank (Universiteit Utrecht)
O. de Hon (Dopingautoriteit)
P. Schermers (TNO Kwaliteit van Leven)
P.G.M. van der Heijden (Universiteit Utrecht)

COLOFON

De Dopingautoriteit Postbus 5000 2900 EA Capelle aan den IJssel info@dopingautoriteit.nl

Eindredactie: Olivier de Hon Vormgeving: CVIII Ontwerpers,

Capelle aan den IJssel

Drukwerk: de Longte Grafische Producties,

Capelle aan den IJssel.

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summary

In sports, the use of various performance-enhancing drugs is prohibited. These are often called 'doping' substances. It is not clear how many people use performance-enhancing drugs in the Netherlands. No recent studies have been conducted on the prevalence of performance-enhancing drugs in unorganized sports. Therefore, the Anti-Doping Authority of the Netherlands commissioned TNO Quality of Life to investigate the prevalence and determinants of use of performance-enhancing drugs by athletes visiting Dutch fitness centres.

In the current study, the concept of 'doping' was not strictly defined as substances on the Prohibited List of the World Anti-Doping Agency (WADA). Firstly, not all substances on this list are of primary interest to the commissioners of this study, nor to fitness athletes looking for performance enhancement (for example corticosteroids and cannabinoids). Secondly, some relevant substances are not on the Prohibited List, for example thyroid hormones and oral anti-diabetic medication. Therefore, these substances were included in the current study. Furthermore, use of performance-enhancing drugs was defined as using doping substances at least once in the preceding year.

The research questions of the study were:

- 1. What is the prevalence of use of performance-enhancing drugs by athletes (15 years and older) visiting Dutch fitness centres?
- 2. Which determinants are related to the use of performance-enhancing drugs by athletes (15 years and older) in Dutch fitness centres?
- 3. Are there trends in the determinants of use of performance-enhancing drugs?
- 4. How can the prevalence be assessed in a reliable and relatively simple manner in future studies?

Questionnaires were conducted among owners and athletes of fitness centres. A total of 500 centres were randomly selected from the trade register of the Dutch Chambers of Commerce (which listed a total of 1839 of such centres). At least three attempts were made to contact the owners of fitness centres by telephone. A total of 188 owners were reached of which 92 agreed to participate in this study (response rate = 49%). Characteristics of fitness centres participating in the current study were compared with characteristics of centres

participating in the Dutch National Fitness Monitor. The findings showed that centres participating in the current study were a representative sample of the Dutch fitness branch.

Participating in research about performance-enhancing drugs can be threatening to athletes visiting Dutch fitness centres. Respondents may be reluctant to reveal sensitive information. To tackle the problem of response errors, two web-based surveys were conducted. The first survey was conducted to compare the prevalence and determinants with earlier studies. This is the classical method. The second survey was conducted to investigate whether there was an underestimation of the true prevalence caused by response errors due to social desirability. This is the randomized response method. This second method will result in a more reliable and valid estimation of the prevalence of use of performance-enhancing drugs, if respondents experience the questions about performance-enhancing drugs as threatening.

A total of 718 athletes from 92 fitness centres completed the questionnaire; 246 respondents completed the first survey (i.e. classical method) and 447 respondents the second survey (i.e. randomized response method). 8.8% of owners of fitness centres answered there was a good chance that athletes visiting their centre used performance-enhancing drugs. One out of ten athletes knew at least one person who used performanceenhancing drugs. These drugs were classified into the following categories: anabolic steroids, prohormones, substances to counteract side-effects, growth hormone and/or insulin, stimulants (to reduce weight), and miscellaneous substances. The classical method resulted in prevalences varying between 0.0% and 0.4% for the different types of performance-enhancing drugs with an overall prevalence of 0.4%. The randomized response method resulted in prevalences varying between 0.8% and 4.8% for the different types of performanceenhancing drugs with an overall prevalence of 8.2%. The overall prevalence of the two survey methods differed significantly. Therefore, it can be concluded that the randomized response method resulted in a more reliable and valid estimation of the prevalence of use of performance-enhancing drugs.

The overall prevalence of performance-enhancing drugs was low and therefore it was not possible to carry out an analysis of determinants. As a result, the third question about trends in determinants of performanceenhancing drugs could not be answered. A literature research was carried out to investigate which determinants were related to use of performance-enhancing drugs in earlier European studies. The literature search showed that the following determinants were related to performance-enhancing drugs use: gender, educational level, use of various substances (legally prohibited drugs, tobacco, alcohol, coffee, dietary supplements, intention to use performance-enhancing drugs), exercise behaviour (participating in exercise, number of training hours per week, participating in body building), body image (desire to lose weight, self esteem, mental health, and trait anxiety) and social network (knowing people who use performance-enhancing drugs, having a friend who uses doping, and choice of education).

The last research question addressed the question how this prevalence can be assessed in a reliable and relatively simple manner in future studies. The current study showed that the classical method led to an underestimation of the prevalence. Therefore, the randomized response method is more suitable for estimating the prevalence of use of performance-enhancing drugs in the future.

Studies on the determinants of performance-enhancing drugs should be separately conducted from studies on the prevalence. To enable an analysis of determinants of performance-enhancing drugs, it is important to have a lot of respondents using performance-enhancing drugs. This can be accomplished by including fitness centres that are suspected to have many athletes using performance-enhancing drugs. However, for prevalence studies a representative sample of respondents is essential. Therefore, selecting centres with a high prevalence of performance-enhancing drugs is not the correct strategy, because the results of this selected group of athletes cannot be generalized to the population at large.