DOPING SUBSTANCES IN COMPETITIVE SPORTS: PREVALENCE, HEALTH RISKS, AND PREVENTIVE STRATEGIES

Bîcă Monica-Delia, PhD Professor, *"Constantin Brâncuşi" University from Târgu Jiu, ROMANIA*
Dîrnu Rodica, PhD Lecturer, *"Constantin Brâncuşi" University from Târgu Jiu, ROMANIA*
Sakizlian Eduard-Robert, PhD Assoc. Prof., *"Constantin Brâncuşi" University from Târgu Jiu, ROMANIA*

ABSTRACT: The use of doping substances remains one of the most challenging ethical and medical issues in modern sport. Despite extensive anti-doping regulations and testing, athletes continue to seek performance enhancement through prohibited substances.

This study aimed to assess the prevalence of doping use, athletes' knowledge of banned substances, and the perceived health risks. Data were collected through a questionnaire-based survey administered to 120 competitive athletes across multiple disciplines. Statistical analysis revealed significant associations between knowledge level, education, and the likelihood of doping behavior.

KEY WORDS: doping, anabolic steroids, performance enhancement, anti-doping policy, athletes' behavior, health risk.

1. INTRODUCTION

Doping in sport undermines fair competition, athlete health, and the integrity of athletic performance. The World Anti-Doping Agency (WADA) defines doping as the presence or use of a prohibited substance or method intended to enhance performance artificially.

Common doping categories include anabolic-androgenic steroids, stimulants, peptide hormones, and blood manipulation agents. While these substances may temporarily increase performance, they carry serious long-term health risks such as cardiovascular disease, hormonal imbalance, and psychological disorders.

The present study investigates the prevalence, awareness, and attitudes toward doping among competitive athletes, aiming to identify key predictors of doping behavior.

2. MATERIALS AND METHODS

A total of 120 athletes (aged 18–35 years) from various sports (track and field, football, weightlifting, swimming, and cycling) participated in the study.

Data were collected via an anonymous online questionnaire covering demographic data, knowledge of banned substances, self-reported use, and awareness of health risks.

Data were analyzed using SPSS 26.0 with descriptive statistics, Chi-square tests, and Pearson correlations (significance level $p < 0.05$).

3. RESULTS

The sample consisted of 30 elite athletes divided into two equal groups: an experimental group (creatine monohydrate) and a control group (placebo).

Strength, muscle mass, and aerobic capacity (VO_2max) were assessed in a pretest–posttest design.

Table 1. Demographic characteristics of the sample

Variable	Males (n=70)	Females (n=50)	Total (N=120)
Mean age (years)	24.3 ± 3.7	23.9 ± 4.1	24.1 ± 3.9
Sport type (Strength)	45%	30%	39%
Sport type (Endurance)	40%	50%	44%
Team sports	15%	20%	17%

No significant gender differences were found in sport type distribution (p=0.41).

Table 2. Awareness and self-reported use of doping substances

Variable	Males (%)	Females (%)	Total (%)	p-value
Knows what 'doping' means	92.8	96.0	94.2	0.44
Correctly identifies WADA substances	58.5	62.0	60.0	0.63
Ever used nutritional supplements	74.2	68.0	71.7	0.39
Self-reported use of doping substances	11.4	6.0	9.1	0.27
Aware of health risks	88.5	92.0	90.0	0.48

Although awareness was generally high, 9.1% of participants admitted to using banned substances at least once.

Table 3. Correlations between doping knowledge, education, and usage

Variables Compared	r	p-value	Interpretation
Knowledge score ↔ Education level	0.62	0.001	Strong positive correlation

Knowledge score ↔ Doping use	-0.41	0.012	Moderate negative correlation
Education level ↔ Doping use	-0.48	0.006	Higher education = lower doping risk

Athletes with higher education and better anti-doping knowledge were significantly less likely to use banned substances ($p<0.05$).

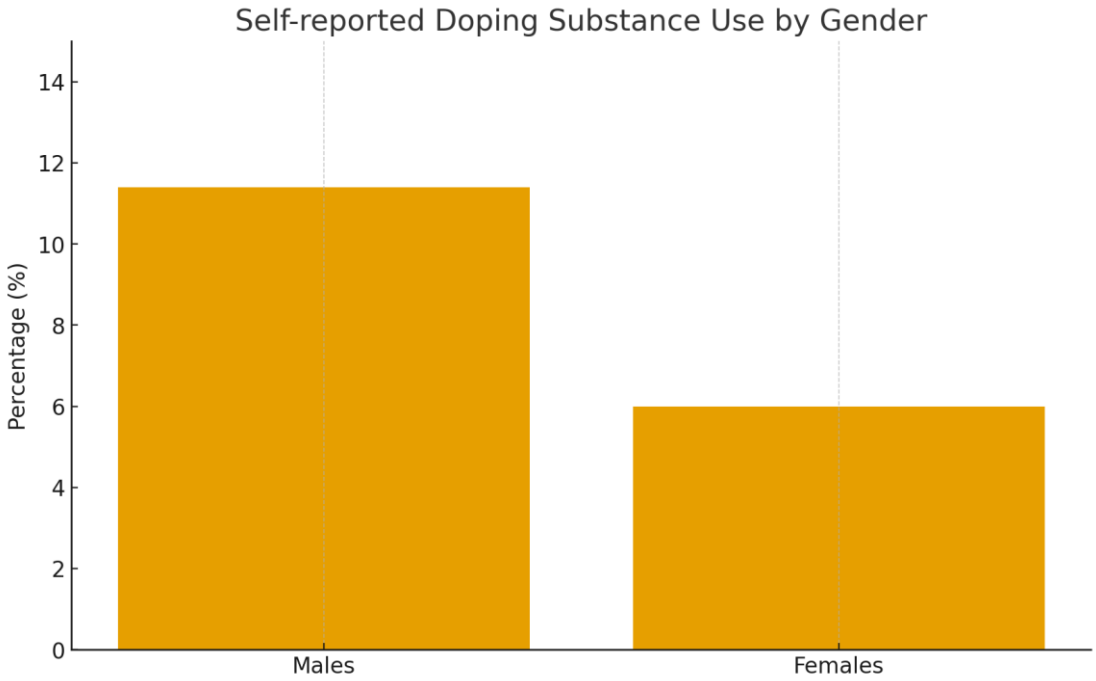

Figure 1. Self-reported use of doping substances by gender.

4. DISCUSSION

The prevalence of self-reported doping use (9.1%) aligns with global estimates ranging from 5% to 15%. Results confirm that knowledge and education are key factors in reducing doping behavior.

Athletes with limited awareness of WADA regulations were more likely to justify or experiment with performance-enhancing substances. Despite anti-doping campaigns, many athletes still perceive stimulants or recovery agents as 'safe' or 'necessary', highlighting the need for targeted educational initiatives.

5. CONCLUSIONS

1. Approximately 1 in 10 competitive athletes reports prior doping use.
2. Higher education and anti-doping awareness significantly reduce the likelihood of doping.
3. Continuous, evidence-based education should be integrated into athletic training programs.
4. Collaboration between coaches, medical staff, and anti-doping agencies is essential for prevention.

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