

## COMPARATIVE ANALYSIS OF THE INFLUENCE OF COACHES' BELIEFS ON THE ATTITUDE OF ATHLETES TO THE USE OF PROHIBITED SUBSTANCES\*

**Areg Hovhannisyán** <https://orcid.org/0009-0009-8333-3954>

Prof., doctor of biological science, Deputy Director of “Anti-Doping Agency” SNCO of Armenia, Board Member of Trustees of the Yerevan State University.

Email: [armantidopingservice@outlook.com](mailto:armantidopingservice@outlook.com)

**Gohar Sahakyan** <https://orcid.org/0009-0004-6130-1357>

Quality manager of the “Anti-Doping Agency” SNCO of Armenia.

Email: [gohar.sahakyan1303@gmail.com](mailto:gohar.sahakyan1303@gmail.com)

**Teimuraz Ukleba** <https://orcid.org/0009-0003-7420-3345>

National Anti-Doping Agency, Deputy Director, Tbilisi, Georgia.

Email: [tukleba06@gmail.com](mailto:tukleba06@gmail.com)

**Elena Arhip** <https://orcid.org/0009-0004-5711-9050>

National Anti-Doping Agency of Moldova, Deputy Director, Kishinev, Moldova.

Email: [elenaarhip@anad.gov.md](mailto:elenaarhip@anad.gov.md)

**Geoffrey Jalleh** <https://orcid.org/0000-0001-8801-8640>

Survey Research Centre, School of Medical and Health Sciences, Edith Cowan University, Australia. Email: [g.jalleh@ecu.edu.au](mailto:g.jalleh@ecu.edu.au)

**Rob Donovan** <https://orcid.org/0000-0003-4160-2967>

PhD, Adjunct Professor School of Human Sciences University of Western Australia

Email: [r.donovan1@outlook.com](mailto:r.donovan1@outlook.com)

**Abstract.** *This study presents the results of a survey of coaches and athletes to explore the similarities and differences between their beliefs regarding athletes' use of prohibited substances and methods in sport. The study was conducted in Armenia, Georgia and Moldova members of the Eastern European Regional Anti-Doping Organization in 2008-2021 and certified to comply with WADA standards. 270 coaches and 810 athletes were selected to participate in the study. Questionnaires for self-completion by coaches and athletes have been developed and approved by WADA. The ultimate goal of the study was to identify the main components of an anti-doping education program for coaches, which will ensure the positive influence of coaches on the attitude of athletes to doping. The results of the study allow us to conclude that it is necessary to include the following aspects in the education program for coaches in Armenia, Georgia and Moldova: clarification of the role of anti-doping organizations responsible for testing and disqualification of national and international athletes, a detailed explanation of the difference between substances prohibited all the time and only in-competitions, an explanation of the differences between the use of specific and non-specific substances, familiarization with the world statistics of*

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*Այս նախագիծը ֆինանսավորվել է և աջակցվել է Համաշխարհային հակադոպինգային գործակալության կողմից որպես սոցիալական գիտությունների հետազոտական իրավաչնորհային ծրագրի մաս:*

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*anti-doping rule violations. The results of the correlation analysis allow us to conclude that in important factors of doping use, coaches generally have a positive impact on their athletes. However, on the other hand, coaching misconceptions are also passed on to athletes, which are formed as a result of receiving incorrect information from other coaches or the media, which can lead to the accidental use of prohibited specific substances and athlete disqualification.*

**Key words:** *social science research, coaches, athletes, beliefs about doping in sport, a cross-national investigation*

**ԱՐԳԵԼՎԱԾ ՆՅՈՒԹԵՐԻ ՕԳՏԱԳՈՐԾՄԱՆ ՆԿԱՏԱՍԲ  
ՄԱՐԶԻԿՆԵՐԻ ՎԵՐԱԲԵՐՄՈՒՆՔԻ ՎՐԱ ՄԱՐԶԻՉՆԵՐԻ  
ՀԱՍՈՁՄՈՒՆՔՆԵՐԻ ԱԶԴԵՑՈՒԹՅԱՆ ՀԱՄԵՄԱՏԱԿԱՆ  
ՎԵՐԼՈՒԾՈՒԹՅՈՒՆ**

**Արեգ Հովհաննիսյան** <https://orcid.org/0009-0009-8333-3954>

Կենսաբանական գիտությունների դոկտոր, պրոֆեսոր, Հայաստանի «Հակադոպինգային գործակալություն» ՊՈԱԿ-ի փոխտնօրեն, Երևանի պետական համալսարանի հոգաբարձուների խորհրդի անդամ:

Email: [armantidopingservice@outlook.com](mailto:armantidopingservice@outlook.com)

**Գոհար Սահակյան** <https://orcid.org/0009-0004-6130-1357>

Հայաստանի «Հակադոպինգային գործակալություն» ՊՈԱԿ-ի որակի մենեջեր: Email: [gohar.sahakyan1303@gmail.com](mailto:gohar.sahakyan1303@gmail.com)

**Թեյմուրազ Ուլբերա** <https://orcid.org/0009-0003-7420-3345>

Վրաստանի Ազգային հակադոպինգային գործակալության փոխտնօրեն:

Email: [tukleba06@gmail.com](mailto:tukleba06@gmail.com)

**Ելենա Արհիպ** <https://orcid.org/0009-0004-5711-9050>

Մոլդովայի Ազգային հակադոպինգային գործակալության փոխտնօրեն:

Email: [elenaarhip@anad.gov.md](mailto:elenaarhip@anad.gov.md)

**Ջեֆրի Ժալլե** <https://orcid.org/0000-0001-8801-8640>

Էդիթ Քոուանի համալսարանի Բժշկական և առողջապահական գիտությունների դպրոցի հանրային հետազոտությունների կենտրոն,

Ավստրալիա: Email: [g.jalleh@ecu.edu.au](mailto:g.jalleh@ecu.edu.au)

**Ռոբ Դոնովան** <https://orcid.org/0000-0003-4160-2967>

Արևմտյան Ավստրալիայի Հասարակագիտական համալսարանի

պրոֆեսոր: Email: [r.donovan1@outlook.com](mailto:r.donovan1@outlook.com)

**Ամփոփում:** Հոդվածում ներկայացվում են մարզիչների և մարզիկների հարցման արդյունքները՝ որի նպատակն էր ուսումնասիրել Հայաստանի, Վրաստանի և Մոլդովայի մարզիչների համոզմունքների նմանություններն ու տարբերությունները սպորտում մարզիկների կողմից արգելված նյութերի և մեթոդների օգտագործման վերաբերյալ: Ուսումնասիրությունն իրականացվել է Հայաստանում, Վրաստանում և Մոլդովայում, որոնք 2008-2021 թվականներին եղել են Արևելյան Եվրոպայի տարածաշրջանային հակադոպինգային կազմակերպության անդամներ և ունեն Համաշխարհային հակադոպինգային գործակալության (ՀՀԳ) չափանիշներին համապատասխանության արտոնագրեր: Հետազոտությանը

մասնակցելու համար ընտրվել են 270 մարզիչներ և 810 մարզիկներ: Մարզիչների և մարզիկների ինքնուրույն լրացրած հարցաթերթիկները մշակել և հաստատել ՀՀԳ-ն: Հետազոտության վերջնական նպատակն էր բացահայտել մարզիչների հակադոպինգային կրթական ծրագրի հիմնական բաղադրիչները, որոնք կապահովեն մարզիչների դրական ազդեցությունը դոպինգի նկատմամբ մարզիկների վերաբերմունքի վրա: Հետազոտության արդյունքները թույլ են տալիս եզրակացնել, որ Հայաստանի, Վրաստանի և Մոլդովայի մարզիչների կրթական ծրագրում անհրաժեշտ է ներառել հետևյալ ասպեկտները. մշտապես և միայն մրցումների ժամանակ արգելված նյութերի տարբերության մանրամասն բացատրություն, առանձնահատուկ և ոչ առանձնահատուկ նյութերի օգտագործման տարբերությունների բացատրություն, հակադոպինգային կանոնների խախտման համաշխարհային վիճակագրությանը ծանոթացում: Հարաբերակցության վերլուծության արդյունքները թույլ են տալիս եզրակացնել, որ արգելված նյութերի օգտագործման կարևոր գործոններում մարզիչները հիմնականում դրական են ազդում իրենց մարզիկների վրա: Սակայն, մյուս կողմից, մարզիկներին փոխանցվում են նաև մարզչական սխալ պատկերացումներ, որոնք ձևավորվում են այլ մարզիչներից կամ լրատվամիջոցներից ոչ ճիշտ տեղեկատվություն ստանալու պատճառով, ինչը կարող է հանգեցնել արգելված նյութերի պատահական օգտագործման և մարզիկի որակազրկման:

*Բանալի բառեր – հասարակագիտական հետազոտություններ, մարզիչներ, մարզիկներ, սպորտում դոպինգի մասին համոզմունքներ, միջազգային հետազոտություն*

## СРАВНИТЕЛЬНЫЙ АНАЛИЗ ВЛИЯНИЯ УБЕЖДЕНИЙ ТРЕНЕРОВ НА ОТНОШЕНИЕ АТЛЕТОВ К ИСПОЛЬЗОВАНИЮ ЗАПРЕЩЕННЫХ СУБСТАНЦИЙ

**Արթ Եգանյան** <https://orcid.org/0000-0003-4160-2967>

Доктор биологических наук, профессор, заместитель директора ГНКО «Антидопинговое агентство» Армении, член попечительского совета Ереванского государственного университета. Email: [r.donovan1@outlook.com](mailto:r.donovan1@outlook.com)

**Գոար Տահակյան** <https://orcid.org/0009-0004-6130-1357>

Менеджер по качеству ГНКО «Антидопинговое агентство» Армении. Email: [gohar.sahakyan1303@gmail.com](mailto:gohar.sahakyan1303@gmail.com)

**Թեյմուраз Աղևաբեկ** <https://orcid.org/0009-0003-7420-3345>

Заместитель директора Национального антидопингового агентства Грузии. Email: [tukleba06@gmail.com](mailto:tukleba06@gmail.com)

**Էլենա Արխիպ** <https://orcid.org/0009-0004-5711-9050>

Заместитель директора Национального антидопингового агентства Молдовы. Email: [elenaarhip@anad.gov.md](mailto:elenaarhip@anad.gov.md)

**Դեյվիդ Դեյվիս** <https://orcid.org/0000-0001-8801-8640>

Исследовательский центр, медицинских наук, Университета Эдит Коуэн, Австралия. Email: [g.jalleh@ecu.edu.au](mailto:g.jalleh@ecu.edu.au)

**Րոբ Դոնովան** <https://orcid.org/0000-0003-4160-2967>

Профессор, Школа гуманитарных наук Университета Западной Австралии. Email: [r.donovan1@outlook.com](mailto:r.donovan1@outlook.com)

**Резюме:** В этом исследовании представлены результаты опроса тренеров и атлетов с целью изучения сходств и различий между их убеждениями в отношении использования атлетами запрещенных в спорте субстанций и методов. Исследование проводилось в Армении, Грузии и Молдове, странах, входящих в 2008-2021 в состав восточно-европейской региональной антидопинговой организации и имеющих сертификат соответствия стандартам ВАДА. Для участия в исследовании было отобрано 270 тренеров и 810 спортсменов. Анкеты для самостоятельного заполнения тренерами и спортсменами были разработаны и одобрены ВАДА. Конечной целью исследования являлось определение основных компонентов антидопинговой образовательной программы для тренеров, которые позволят обеспечить положительное влияние тренеров на отношение спортсменов к допингу. Результаты исследования позволяют сделать вывод о необходимости включения в программу обучения тренеров Армении, Грузии и Молдовы следующих аспектов: разъяснение роли антидопинговых организаций, ответственных за тестирование и дисквалификацию спортсменов национального и международного уровня, подробное объяснение разницы между веществами, запрещенными постоянно и только во время соревнований, объяснение различий между применением специфических и неспецифических субстанций, ознакомление с мировой статистикой нарушений антидопинговых правил. Результаты корреляционного анализа позволяют сделать вывод о том, что в важных факторах применения допинга тренеры в целом оказывают положительное влияние на своих спортсменов. Однако, с другой стороны, спортсменам передаются также и заблуждения тренеров, которые формируются в результате получения неверной информации от других тренеров или СМИ, что может привести к случайному использованию запрещенных специфических субстанций и дисквалификации атлетов.

**Ключевые слова:** социологические исследования, тренеры, спортсмены, представления о допинге в спорте, межнациональное исследование

### **Introduction**

Until now, vast majority of studies on the influence of coaches' beliefs towards the use of prohibited substances and methods on their athletes' attitudes towards doping has been conducted in Western European countries.

In the countries of Eastern Europe, including Armenia, Georgia, and Moldova, similar studies have not been conducted. The aim of study was to determine to what extent the state doping support system adopted in the USSR, influenced the attitudes and beliefs of coaches in the WADA certified members of the Eastern European Regional Anti-Doping Organization in 2008-2021 and to what extent these phenomena influenced the attitudes of their athletes to doping.

With funding from the WADA, a survey was conducted of coaches and athletes in Armenia, Georgia, and Moldova with respect to existing knowledge and attitudes around doping, with the aim of identifying essential components for education programs for coaches to ensure a positive impact on the attitudes and beliefs of their athletes around doping. It was considered that social and cultural norms, perceived roles and behavioral control beliefs (reflecting both internal and external control processes) would significantly predict coaches' attitudes and beliefs about doping and doping education, and those coaches' attitudes and beliefs about doping and their role in doping education will be reflected in their athletes' attitudes towards doping and doping susceptibility.

It is known that the coaches play an important role in an athlete's sporting

career, and coaches are frequently identified as a potential precipitating factor in athlete doping (Allen et al., 2015; Backhouse et al., 2007; Backhouse et al., 2012; Cleret L et al., 2011; Donovan et al., 2002; Figved, 1992; Fung et al., 2006; Laure et al., 2003; Lazuras et al., 2010; Lentillon-Kaestner et al., 2010; Smith et al., 2010, Laure et al., 2003; Laure et al., 2011; Kirby et al. 2011; Lucidi et al., 2008).

The main objectives of this study was to investigate the extent to which the differences in social and cultural norms in these countries influence the beliefs and attitudes towards doping of Coaches and Athletes and to identify how coaches are a potential precipitating factor in athletes' use of prohibited substances.

### **Aims of this study**

This study focuses on the beliefs and attitudes towards doping of Coaches and Athletes in Armenia, Georgia and Moldova and on the similarities and differences between this WADA certified members of the Eastern European Regional Anti-Doping Organization in 2008-2021 on these measures.

### **Material and Methods**

Surveys of coaches and athletes using a self-completion questionnaire.

*Coach and Athletes Selection:* Coaches and athletes were selected from National Teams. In total, two hundred and seventy coaches and eight hundred and ten athletes (three under each coach) were selected and completed the questionnaire. The selection of coaches ensured that both coaches with extensive work experience (30 years or more who began their activities in the USSR), and young coaches (who started coaching in the 2000s) were included in the sample.

**Questionnaire.** Self-completion questionnaires for coaches and athletes were developed by Hovhannisyan et al. in a first-phase Pilot study and approved by WADA (Hovhannisyan et al. 2018). The questionnaire for coaches and for athletes included 26 questions of which 17 related to the following topics: perceived motivations of doping athletes; perceived effectiveness of anti-doping programs; beliefs about doping in sport and beliefs as a coach about doping. The questionnaires were piloted with coaches and athletes in each country.

**Ethics approval:** According to the laws of Armenia, Georgia, and Moldova, State ethics approval is not required for this kind of research, but each research organization granted permission from its Ethics Committee.

### **Statistical analysis**

The questionnaire data were transformed to an Excel database for data management and statistical analyses using IBM SPSS Amos™ statistic program version 23, 2019. All statistical tests were evaluated against a 0.05 level of significance, and were two-sided tests. Before comparison of the data within or between groups, all data were checked for normality test ( $p=0.05$ ). Descriptive statistics, including the mean and standard deviation were used to compare the data for the three countries. Depending on the results of the normality test, the comparative assessment of the results between the three countries was made using the Kruskal-Wallis non-parametric one-way ANOVA rank-order test, with post hoc Dunn's Multiple Comparison Test, or parametric one-way independent measures ANOVA with Tukey's Multiple Comparison Test. Correlation analyses of the coaches' and athletes data were conducted using the Pearson or Spearman correlation coefficient depending on the results of the normality test.

## Results and Discussion

### Sample Demographic data

The mean ages of coaches and athletes were similar across all three countries. Overall, 14% of participants represented team sports disciplines and 86% represented individual sports disciplines. More than half of the athletes were international-level athletes. About 80% of coaches and athletes were males. Whilst there was some variation between the three countries in mean ages and years of experience, none of these was statistically significant (Table 1).

Table 1

Age and working/training experiences of survey participants

Country	Age, years		Experiences, years	
	Coaches	Athletes	Coaches	Athletes
Armenia	45.51±13.9	24.30±5.5	13.88±9.6	10.4±5.6
Georgia	42.93±10.7	19.98±2.7	10.44± 6.7	6.76±3.3
Moldova	43.30±10.7	20.53±3.1	11.41±7.0	7.58±3.3

### Beliefs about influences on an athlete's decision to dope

Coaches and athletes were presented with five possible reasons for athletes' decisions to get involved in performance enhancing doping and asked to indicate whether they agreed or disagreed with each factor as a potential influence in athletes' decision to dope. The five factors and the percent agreeing with each of these are presented in Table 2.

Table 2

Percent of coaches and athletes in each country agreeing that each of the listed factors 'potentially influences an athlete's decision to dope.

Reason for Doping	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
Economic/monetary	40.0	51.7	42.2	26.7	46.7	25.6	43.1	41.4
Speed up recovery from injury	33.0	73.7	38.9	70.4	45.6	32.6	39.7	59.1
Improve performance	75.6	53.0	66.7	25.9	75.6	30.4	71.6	36.4
Prolong career in sport	46.7	80.7	51.1	20.4	46.7	27.8	48.1	43.8
Due to peer pressure	23.6	68.2	37.8	17.4	30.0	21.1	30.5	36.4

Table 2 shows that, whilst the percentages for the various factors vary between countries and between athletes and coaches, each of the five factors was nominated as influencing athletes' decision to dope by substantial proportions of respondents (i.e., from 21% to 81%). The factor most frequently nominated by Coaches across all three countries was "To improve performance" (71.6%; versus 36.4% for athletes), whereas the factor most frequently nominated by athletes, particularly in Armenia and Georgia, was "To speed up recovery" (59.1%; versus 39.7% for Coaches). Table 2 also shows that Athletes in Armenia are more likely to nominate each of these factors than Georgian and Moldovan athletes, and particularly "To prolong a career in sport".

### Perceived Effectiveness of Current Anti-Doping Activities

Coaches and athletes were asked to indicate whether they agreed or disagreed that the current system of drug testing is effective in catching dopers both in-competition and out-of-competition. They were then asked to indicate whether they agreed or disagreed that anti-doping education programs are effective in deterring athletes from doping, and whether the current sanction of a 4-year ban for a first doping offence is sufficiently strict to deter athletes from doping. The percentages agreeing with each of these factors are shown in Table 3.

*Table 3*

#### Beliefs about the effectiveness of anti-doping activities: % agreeing with these statements.

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
The current system of drug testing is effective in catching dopers <i>in-competition</i>	82.3	58.9	83.3	51.8	81.3	73.7	<b>81.7</b>	<b>61.9</b>
The current system of drug testing is effective in catching dopers <i>out of competition</i>	83.3	53.3	72.2	80.7	72.5	71.5	<b>85.6</b>	<b>68.5</b>
Anti-Doping education programs are effective in deterring athletes from doping	87.8	64.4	80.0	67.8	80.2	75.2	<b>75.6</b>	<b>68.5</b>
The current sanction of a 4 year ban for a first doping offence is sufficiently strict to deter athletes from doping	75.6	61.4	72.2	73.7	73.6	66.7	<b>76.0</b>	<b>57.3</b>

Table 3 shows that overall, a substantial majority of coaches and athletes across all three countries agree that current drug testing, both in and out of competition, is effective in catching dopers, and that anti-doping education programs and the current 4-year ban for a first offence are effective deterrents to doping. However, apart from Georgia for ‘out of competition testing’ and ‘the current sanction’, coaches across all three countries are more likely than athletes to agree that each of these current activities is ‘effective’.

Coaches and athletes were also asked whether they had ‘any suggestions for how the current drug testing and sanctions system and how the content or delivery of anti-doping education could be improved’. The percent answering ‘yes’ to this question are shown in Table 4. Consistent with the high percentages agreeing that the above four factors were ‘effective’, and/or reflecting a lack knowledge in these areas, Table 4 shows that very few coaches and athletes across all three countries had any suggestions for improvements in these areas of education, testing and sanctions.

### Societal Issues

Respondents were asked their opinion on two broad societal issues: whether or not they believed that ‘the media blows the doping issue out of proportion’ and whether or not they believed that ‘legalizing performance enhancements would be

beneficial for sports'. The percent stating they agreed with each of these statements is shown in Table 5.

Table 4

**Percent nominating any suggestions for improvement of drug testing and sanctions and the content or delivery of anti-doping education.**

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
Improvement for drug testing and sanctions	2.2	2.6	2.2	3.3	3.3	3.7	2.2	3.4
Improvement for anti-doping education	11.1	3.7	5.6	3.3	5.5	4.1	7.5	3.6

Table 5

**Percent Agreement with Societal Issues**

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
The media blows the doping issue out of proportion	29	77.0	68.9	76.7	67.0	66.3	55.0	73.1
Legalizing performance enhancements drugs would be beneficial for sports	18	31.5	8.9	29.3	9.9	25.6	12.3	28.6

Table 5 shows that around two-thirds or more of coaches and athletes in Georgia and Moldova, and three quarters of athletes in Armenia believe that the media blows the doping issue out of proportion.

With respect to the legalization of performance enhancements substances, Table 5 shows that whilst the vast majority of both athletes and coaches in all three countries *disagreed* with this proposition, higher proportions of athletes in each country agreed with this proposition compared to coaches.

**Beliefs About Coach Behaviors That Could Contribute to Doping by Athletes**

Respondents were presented with the four Coach behaviors listed in Table 6 and asked whether they agreed or disagreed that these behaviors contributed to athletes being positively disposed toward doping. The percentages agreeing with each coach behavior contributing to a positive attitude to doping amongst athletes are shown in Table 6.

Table 6 shows that almost 60% of Coaches (versus 24% of athletes) agree that both '*punishing mistakes by shouting at or dropping the athlete in question*' and '*actively encouraging rivalry*' could contribute to positive doping attitudes amongst athletes. In contrast, athletes most frequently nominated '*Showing favoritism towards the best athletes*' as contributing to a positive doping attitude amongst athletes (50.4% versus 34.9% of Coaches).

Table 6

**Percent Agreement that Coach Behaviors could contribute to positive doping attitudes amongst Athletes**

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes



Failing to reward effort/ improvement by athletes	63.3	9.6	7.8	9.6	18.7	33.7	<b>29.8</b>	<b>16.9</b>
Punishing mistakes by shouting at or dropping the athlete in question	61.1	6.3	65.5	40.4	49.4	27.8	<b>58.7</b>	<b>24.3</b>
Showing favoritism towards the best athletes in the group	13.3	58.5	51.1	45.9	38.4	47.4	<b>34.9</b>	<b>50.4</b>
Actively encouraging rivalry between team- mates/training partners	61.1	6.3	65.5	40.4	49.4	27.8	<b>58.2</b>	<b>24.4</b>

Table 6 also shows some variation between coaches' and athletes' responses by country. For example, only 13.3% of Armenian coaches nominated 'favoritism' as an influencing factor, versus 51.1% and 38.4% of Georgian and Moldovan Coaches, and only 7.8% of Georgian Coaches and 18.7% of Moldovan Coaches nominated 'failing to reward effort' versus 63.3% of Armenian Coaches.

**Actions Would Take if Respondents Became Aware of or Suspected that an Athlete Possessed a Prohibited Substance**

Respondents were presented with the five actions listed in Table 7 and asked which action they thought they would take if they saw or knew that an athlete accepted or bought a prohibited substance. Table 7 shows that overall; a substantial majority of both Coaches (78.7%) and Athletes (69.5%) would report this behavior either to their National Anti-Doping Organization (NADO) (45.1% and 44.2% respectively) or their Sports Federation (33.6% and 25.3% respectively).

However, there are a number of notable differences between the countries for both Coaches and Athletes. For example, Armenian Coaches are far more likely to report the behavior to their NADO (73.3%), whereas Georgian and Moldovan Coaches are more likely to report the behavior to their Sports Federation: 37.8% and 52.7% respectively. It is also of concern that 11.4% of all Coaches stated they would 'explain to the athlete how to take the substance', with the percentages much higher in Georgia (13.3%) and Moldova (15.4%) than in Armenia (5.6%). With respect to Athletes, far fewer Moldovan than Armenian and Georgian Athletes would report this behavior to their NADO or Sports Federation: 36.7% versus 84.9% and 87.0% respectively.

**Table 7**  
**Percent Nominating Action They Would Take if Respondents Became Aware of or Suspected that an Athlete Possessed a Prohibited Substance**

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
I will report this to the ADO	73.3	51.6	30.0	68.5	31.9	12.6	<b>45.1</b>	<b>44.2</b>
I will report this to the sports federation	10.0	33.3	37.8	18.5	52.7	24.1	<b>33.6</b>	<b>25.3</b>
I will talk with the athlete	11.1	8.1	18.9	7.4	0.0	56.7	<b>10.0</b>	<b>24.1</b>
I will explain to the athlete how to take it	5.6	6.3	13.3	5.6	15.4	5.1	<b>11.4</b>	<b>5.7</b>
I will not take any action	0.0	0.7	0.0	0.0	0.0	1.5	<b>0.0</b>	<b>0.4</b>

Respondents were presented with the three actions in Table 8 and asked which one they would take if they became aware that an athlete had received information on how long a particular prohibited substance would take to be removed from their body.

Consistent with the results in Table 8, Moldovan Coaches were far less likely than Armenian and Georgian Coaches to state they ‘would tell them to ignore that information and to never use any prohibited substance’: 67% versus 94.4% and 86.7% respectively. Conversely, Moldovan Athletes were more likely than Moldovan Coaches to ‘tell them to ignore that information and to never use any prohibited substance’ (83% versus 67%), and more likely than Armenian and Georgian Athletes to nominate this action. Overall, substantial percentages of either athletes or coaches across all three countries indicate a tolerance of athletes using a prohibited substance.

### Coaches’ Beliefs about their Role in Anti-Doping

Coaches were presented with the three statements in Table 9 and asked whether they agreed or disagreed with each statement. Table 9 shows the percent agreeing with each statement. Overall, across all three countries, 80% or more of Coaches agree that they are ‘expected to deter their athletes from doping’ and that they ‘plan to provide their athletes with anti-doping information’. Around three-quarters or more also state that they ‘feel under pressure to promote anti-doping’. Whilst the 80% of Coaches ‘plan to provide their athletes with anti-doping information’, around one in five Georgian and Moldovan Coaches ‘do not plan to do so’.

*Table 8*

**Percent nominating action that coaches and athletes would take if became aware that an athlete received information about how long a Prohibited substance remained in their body**

Statement	% agree							
	Armenia		Georgia		Moldova		Total	
	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes	Coaches	Athletes
I would tell them to ignore that information and to never use any prohibited substance	94.4	66.3	86.7	66.6	67.0	83.0	<b>82.7</b>	<b>72.0</b>
I would make the appropriate calculations and recommend using this substance on that basis	4.4	30.4	10.0	29.3	9.9	8.9	<b>8.1</b>	<b>22.9</b>
I would check the information via the Internet or from sports doctors and on the basis of the information received, recommend it to be used or not	1.1	3.3	3.3	4.1	23.1	8.1	<b>9.2</b>	<b>5.2</b>

*Table 9*

### Coaches’ Beliefs about Their Role in Anti-Doping

Statement	% agree			
	Armenia	Georgia	Moldova	Total
It is expected of me that I deter the athletes I work with from doping	82.3	83.3	81.3	<b>82.3</b>

I feel under pressure in my role as a coach to promote anti-doping	83.3	72.2	72.5	<b>76.0</b>
I plan to provide anti-doping information to athletes I work with	87.8	80.0	80.2	<b>82.7</b>

## Discussion

### *The similarities and differences between countries.*

Analyzing the obtained results of similarities and differences between Armenia, Georgia and Moldova, it can be concluded that the differences in social and cultural norms in these countries to a much lesser extent determine the beliefs of coaches about doping, which can be transmitted to athletes. Despite the differences above the situation regarding Coaches' Beliefs about their role in Anti-Doping is approximately the same in all countries and shows that coaches understand their role in preventing the use of prohibited substances by their athletes.

To a much greater extent, the positive impact of coaches on their athletes depends on the degree of education and awareness of coaches in the anti-doping field. With respect to differences between countries, it appears to be a need for greater education of Coaches in Moldova and Georgia with respect to reporting an athlete suspected of possessing a prohibited substance, and/or more proactive action by the NADOs in those countries to encourage and support such reporting, and a need for reducing the tolerance of doping by Coaches and Athletes in Moldova.

There was no significant difference in the distribution of answers regarding the effectiveness of the current system of In-Competition and Out-of-Competition testing. More than 70% in all countries of coaches believe that the current system Out-of-competition and In-competition testing are effective. The same situation was registered for education programs and sanction in all three countries. Less than 10% of coaches agree that the testing, sanctions and education system should improve in Armenia, Georgia and Moldova.

More than half of coaches in Georgia and Moldova believe that the media blows the doping issue out of proportion an opposite situation was registered in Armenia where the media practically does not interfere in Armenian NADO after the formation of the Anti-Dopin Agency and after creating the special page on Facebook and new website. Practically all coaches (> 80%) in all countries were against legalizing of the prohibited substances and methods (performance enhancing substances).

The beliefs of coaches on the extent to which coaches can contribute to the positive attitude of athletes towards doping are highly divided. The significant difference were obtained in the beliefs regarding 'Failing to reward effort/improvement by athletes' between Armenia and other counties. The same situation was obtained for "*Showing favoritism towards the best athletes in the group*". The responses of survey participants in Georgia and Moldova are similar, in contrast with Armenia. At the same time, in the remaining two aspects "Punishing mistakes by shouting at or dropping the athlete in question" and "Actively encouraging rivalry between team-mates/training partner", the beliefs of coaches in all countries is approximately the same.

Only a small percentage of Coaches in all three countries would explain to the athlete how to take a prohibited substance. Less than 10% of coaches are sure that if they have the necessary information they will recommend to their athletes to take a prohibited substance. Despite the differences above the situation regarding

Coaches' Beliefs about their role in Anti-Doping is approximately the same in all countries and shows that coaches understand their role in preventing the use of prohibited substances by their athletes. With respect to differences between countries, there appears to be a need for greater education of Coaches in Moldova and Georgia with respect to reporting an athlete suspected of possessing a prohibited substance, and/or more proactive action by the NADOs in those countries to encourage and support such reporting, and a need for reducing the tolerance of doping by Coaches and Athletes in Moldova.

The only misconception of coaches, the cause of which is the legacy that remains from the propaganda that was conducted in the USSR and continues in the Russian media "all athletes use doping but only the USSR athletes are being sanctioned", is the attitude of coaches to the problem, which can be assessed as a negative impact on athletes, for example the Athletes beliefs regarding the legalizing performance enhancements drugs. All other differences are due more to the quality of work of the Anti-Doping Agencies than to differences in Social and cultural norms.

***The similarities and differences between coaches and athletes.***

The results of statistical analysis show that it was big statistical difference between Athletes and Coaches believes in following aspects:

The significant difference between athletes and Coaches believes was obtained for evaluation the factors of reasons behind athletes' decisions to get involved in performance enhancing substances. The interesting difference were obtained only the factors "To speed up recovery from injury" and "To improve their performance" ( $p < 0.0001^{***}$  and  $p < 0.8$ ). Unlike coaches, athletes are not sure that main reason of use the prohibited substance and method is "To improve their performance". It can be concluded that in this matter the influence of coaches on athletes is very insignificant.

The athletes in contrast with the coaches in all three countries much less agree that the current testing, sanctions and education system is good and no need to improve ( $p < 0.0001^{***}$  and  $p < 0.8$ ). The latter is especially true in relation to sanctions. However, when participants were asked to indicate whether the testing and education system needed to be improved ( $p > 0.05ns$  and  $p > 0.8$ ), but vast majority of coaches and athletes did not have any suggestion for improvement.

The beliefs of coaches Behaviors could not contribute to positive doping attitudes amongst Athletes show following. Beliefs of athletes significantly different from the opinion of coaches on the extent to which coaches can contribute to the positive attitude of athletes towards doping are highly divided. If in some aspects, such as "Showing favoritism towards the best athletes in the group", the answers of survey participants as coaches as well as athletes in Georgia and Moldova are similar in their answers, then in other points the opinions are divided.

Approximately 2 times less athletes are convinced that the behavior of coaches indicated in the questionnaires cannot significantly influence their decision to use prohibited substances. Only a small percentage of Coaches and athletes in all three countries would explain to the athlete how to take a prohibited substance. An analysis of the situation as a whole allows us to think that coaches need to pay attention to these situations and influence athletes in terms of the inadmissibility of taking prohibited substances by anyone in principle. Probably in Moldova more

attention should be paid to this issue during education seminars.

In contrast the beliefs of coaches and athletes are same in many ways, which may indicate a positive effect of coaches on athletes. For example more than half of Coaches and more than 70% of athletes believe that the media blows the doping issue out of proportion ( $p > 0.05^{ns}$  and  $\rho > 0.9$ ). More than half of Coaches and athletes in all countries were against legalizing of performance enhancements drugs, and the influence of coaches beliefs to athletes is significant ( $\rho > 0.9$ ). Despite the fact that statistically significant differences were found in the answers of athletes and coaches ( $p < 0.001^{**}$ ), but, in general it can be concluded that only a small part of athletes believe that legalizing of performance enhancements substances would be beneficial for sports.

The data clearly shows that almost all Coaches in all three countries are ready to dissuade their athletes from using prohibited substance. It is interesting to note that only some of the beliefs of the coaches of athletes are completely particularly consistent, such as the assessment of current testing systems or the duration of sanctions.

Overall, and not unexpectedly, the results for all three countries combined showed a number of differences between Coaches' and Athletes' beliefs that indicate a need for increased anti-doping activities in various areas. For example, Athletes were less likely than Coaches to:

- (i) agree that current anti-doping activities were effective;
- (ii) report an athlete's possession of a prohibited substance to their NADO or Sports Federation;
- (iii) to tell an athlete to never use any prohibited substance.

### **Conclusion**

Analyzing the obtained results, it can be concluded that differences in social and cultural norms in the countries of the study participants to a much lesser extent determine the beliefs of coaches about doping, which can be transmitted to athletes. In conclusion, attitudes towards the use of doping among coaches in all three countries differ somewhat, which may relate to differences in the quality of educational programs.

The latter conclusion makes it mandatory to include some information in the educational programs for coaches, about the athletes' duties, ways and means to control their behavior, revealing in detail the mechanisms of such control.

A necessary condition for the new Educational program for coaches may also be the holding of education seminars and workshops for athletes with the obligatory presence of their coaches using "the coach and his athletes" formula. During the workshops the participants will be given the task of learning how to use the NADO and WADA websites, from where they can get correct information about anti-doping rules and standards, about their rights and obligations, the side effects of prohibited substances and present the materials for using such information in their coaching practice.

Unlike the case of awareness as stated by A.Hovhannisyan in the previous study (Hovhannisyan, 2022), there is a big difference in the influence of coaches' beliefs on the attitude of athletes to the use of prohibited substances, both between countries and between coaches and athletes.

In the case of Armenia, Georgia and Moldova, where the majority of coaches and athletes know only the national language, the role of national anti-doping agencies is more important, which should be able to correctly explain the duties and role of coaches in the process of preventing the use of prohibited substances and methods and enforcing anti-doping rules.

Summing up the results of the study, we can conclude that, in general, the results are useful especially in terms of how to improve the educational program in each country, namely which of the issues related to the use of prohibited substances and methods should receive additional attention. In order to increase the positive influence of coaches on the beliefs of athletes, it is also necessary to conduct joint seminars of coaches and athletes, paying attention to the discussion of the social behavior of coaches.

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