

## **Methodological arguments support in maintaining the development of an anti-doping competence in the formal education of high school sports program students**

VALENTINA MACOVEI (ALEXANDRESCU)<sup>1</sup>, LILIANA MIHAILESCU<sup>2</sup>

<sup>1</sup>University of Pitesti, Pitesti, ROMANIA

<sup>2</sup>University of Pitesti, Pitesti, ROMANIA

Published online: December 30, 2021

(Accepted for publication December 15, 2021)

**DOI:10.7752/jpes.2021.06484**

### **Abstract**

The purpose of the research was to provide scientific arguments in support of the introduction of a general competence in the discipline of Sports Theoretical Training for the students enrolled in high school level sports programs with an aim to prevent and fight doping in sport. The research was carried out in order to verify whether the two following hypotheses are confirmed: I1. The contribution of the discipline Sports Theoretical Training to the vocational-sports high school cycle can also extend to the shaping and development of a proactive conduct supporting the prevention and fight against doping in sport, based on expanding the contents of this discipline with input consisting in elementary notions of anti-doping education; I2. The development of a competence geared towards pro-active anti-doping attitudes and values instilled in the students enrolled in the vocational-sports high school cycle, fosters the educational nature of the discipline and enables the acquisition of a responsible behavior of the athletes. In order to achieve the purpose of the research, the following methods were used: the method of documentation, the method of pedagogical observation, the method of pedagogical experiment, the statistical-mathematical method, the questionnaire-based survey method. The pedagogical experiment was carried out in 2021, at the level of grade 11 high-school students - as we deemed that the students enrolled at this level have the required age, intellectual level and psychological training to assimilate anti-doping information. The outcomes of the experiment indicated that the two hypotheses are confirmed and that it is appropriate to integrate anti-doping notions in the content of the Theoretical Sports Training discipline - at grade 11 level.

**Keywords: anti-doping education, Theoretical Sports Training, general competence, specific skills**

### **Introduction**

In recent decades, the impact of the scourge of doping in sport has grown exponentially. Unfortunately, it is inevitable to talk about sports without talking about doping. From year to year, the fight against cheaters in sport is intensifying to defend the rights of clean athletes and protect the integrity of the values of sport.

In the early stages, the fight against doping consisted solely in doping controls targeting athletes during sports competitions. Subsequently, by perfecting the strategies developed and implemented by the anti-doping organizations, doping tests were introduced out of competition without prior notice. Their share has increased in recent years reaching a share of over 50% of the total number of tests.

Practice has shown us that doping testing and the application of coercive measures on those who practice doping are not necessarily the most effective ways of fighting this fraudulent conduct in sport. Rather, a conduct of rejection of doping - favorable to the observance of clean sport and the level playing field - is acquired through a coherent educational process. To succeed in sport, one is required to have the right approach. Honesty, dignity, respect, teamwork, commitment and courage are essential for the successful practice of elite sports. All these values must be shaped from an early age. To preserve moral and social values, or to change them for the better, we must start with children. Values such as fair-play, compliance with the rules or equity, begin to stand out in the school years and can be promoted all the way through. (Palaiologou, I.,2016, Epuran M.)

Such as in any field with prevalent social value, sport is regulated via forms of coordination that tend to encourage a unified practice of promoting the values of sport. In the context of international law, the role of global regulator was conferred since 1999 to the World Anti-Doping Agency (WADA), which ensures the uniform and substantial application of anti-doping regulations. The main instrument on which the implementation of WADA's prerogatives is based is the World Anti-Doping Code (the Code), a regulatory instrument accepted by a large number of Signatories in the anti-doping sphere globally.

Through its role as a global regulator, WADA has encouraged anti-doping organizations to develop and innovate national anti-doping education programs. For both athletes and their support personnel, WADA has

devised several educational tools and an integrated e-platform. (Dvorak J, Baume N, Botré F, Broséus J, Budgett R, Frey W, <https://www.wada-ama.org>)

As such, in our country all activities dedicated to the prevention and fight against doping in sport - both in performance sports and in recreational sport - represent a priority endorsed by a well-established legal framework and a complex strategy with a multidisciplinary approach.

At national level, the National Anti-Doping Agency (ANAD) – a public institution in the coordination of the Romanian Government – is the entity responsible for the development and implementation of the national anti-doping program through the National Anti-Doping Strategy and the Action Plan. In consideration of its mandate - to coordinate the prevention and fight against doping in sport at domestic level - the National Anti-Doping Agency is tasked to implement the international law regulations mentioned above via several operational programs: the testing program, the international cooperation program, the program for the prevention and deterrence of manufacturing and trafficking of high-risk doping substances, the scientific research program and, last but not least, the education, information and prevention program.

In the context of the education program, several educational campaigns have been carried out focused on athletes - both seniors and juniors and also on their support personnel. The results of the educational activities were not long in coming, but they did not always meet the expectations of the experts from the Agency. As we know, it is very difficult to change behaviors in grown-up athletes. On the other hand, the daily schedule and routine of the athletes is very strict, it has them juggle training sessions, relaxation and schooling, and as such their spare time is very limited. It makes it challenging for them to assimilate a large amount of information in a short span of time, all them more as we are referring here to a rather technical domain which involves knowledge from other fields (i.e. biology, chemistry, etc.).

The large number of athletes at national level, their expanded distribution around the country, the fact that in some sports most of the training is conducted overseas have limited the overall number and outreach of the education activities conducted by the experts of the national anti-doping agency – and several athletes could not be in attendance. In consideration of all these factors, the domestic approach was to seek to improve the content of the educational program and to identify new development strategies. Thus, several concrete actions ensued: senior-level athletes were subject to an increased number of education activities; steps were taken to develop a legislative framework to introduce anti-doping education in the curricula of higher education sports and physical education institutions to transfer to the future teachers-coaches the appropriate knowledge on the topic of anti-doping regulations.

When assessing the current landscape of the prevention and fight against doping in sport, it was noted that most doping cases occurred in the range of junior athletes, that there are still P.E. teachers who lack anti-doping information. Therefore, we reached the view that there are grounds to introduce anti-doping education at the level of sports high-schools – for the underage athletes to benefit from sufficient information supporting the development of conduct of rejecting doping and thus protecting the values of sport.

In order to identify good practices in relation with the introduction of anti-doping education in the curricula of educational institutions with sports profile, we have studied several researches in the field of anti-doping education carried out in Spain, Japan and the United Kingdom. The common conclusion reached in these researches was that it is beneficial for anti-doping education to be organized in a formal framework. (Dunn, M., Thomas, J., Swift, W., Burns, L., & Mattick, 2009; Goulet C., Valois P., Buist A., & Côté M., 2010; *Javier Álvarez Medina, Pedro Manonelles Marqueta, Alberto Grao Cruces, Enrique Oliete Blanco, Víctor Murillo Lorente, Alberto Nuviala Nuviala, 2019*)

Doping has multidisciplinary implications - physical education, psychology, biochemistry, etc. For a good understanding of the risks that athletes are subjected to when they use prohibited substances - we refer here to the side effects that prohibited substances have on health - athletes must have minimal knowledge of anatomy, chemistry -subjects that are taught in the curricula of middle school and high school.

Therefore, we concluded that it would be appropriate to introduce notions of anti-doping education in the discipline of Theoretical Sports Training, a discipline that is taught at high-school level in the vocational sports program. To this end, we conducted a preliminary research that highlighted the fact that both at international and national level there is an ongoing and extensive concern for the development of projects / studies / researches that support innovation-based strategies in anti-doping education that take into account the specifics / profile / needs of the various age categories of athletes and that, at the moment, there is an interest for introducing the notions of anti-doping in the curricula of schools with sports programs. This approach is the result of a coherent policy at national level – with the following necessary steps being taken: educating the existing support personnel through educational campaigns and enhancing the training of potential coaches by introducing an anti-doping education course in the university curricula.

In the process of establishing the opportunity of introducing these notions in the discipline of Theoretical Sports Training, we have carried out experimental research. The purpose of the experimental research was to bring scientific arguments for the introduction of a general competence in the discipline "Theoretical Sports Training" for the sports program high school students – focused on the prevention and fight against doping in sport.

To achieve this goal, we have streamlined the following objectives:

- development of a general competence and specific competences supporting a pro-active behavior of sports high-school students towards the prevention and fight against doping in sport;
- evaluation of the efficiency and effectiveness of the teaching strategy designed and implemented in the pedagogical experiment in order to achieve the specific competences and the proposed general competence.

The research was carried out to verify whether the two proposed hypotheses are confirmed, namely:

1) The contribution of the discipline of Sports Theoretical Training to the vocational-sports high school cycle can also extend to shaping and developing a pro-active behavior towards the prevention and fight against doping in sport, based on completing the contents of this discipline with the elementary notions of anti-doping education.

2) The development of a competence oriented towards anti-doping attitudes and pro-active values in the students of the vocational-sports high school cycle favors the educational features of the discipline and allows the acquisition of a responsible behavior of the athletes.

### **Organization of research and methods used**

The research was carried out in two vocational education units, respectively the "Nicolae Rotaru" Sports High School in Constanța and the "Viitorul" Sports Program High School in Pitesti, based on the protocols initiated by us for the development of the experiment and signed by the Doctoral School Science of Sport and Physical Education, University of Pitesti.

The subjects of the research were 11<sup>th</sup> grade students from the two sports educational institutions, namely the "Nicolae Rotaru" Sports High School in Constanța and the "Viitorul" High School in Pitesti.

In order to perform the experiment, the subjects were randomly divided into two groups: an experimental group and a control group. Both groups were applied the questionnaire at the beginning of the experiment, and the experiment group was applied the questionnaire also after completing the module of teaching the anti-doping contents. The experimental group consisted of 57 students and the witness group of 78 students.

As the experiment unfolded, the Covid-19 pandemics triggered measures implemented by the Romanian Government which moved schooling into the online system. As such, the lessons and the questionnaires within this research were conducted and applied online.

The curriculum for the 11<sup>th</sup> grade provides 2 hours/week for Theoretical Sports Training. As a result, for a 4-week period, we taught 2 hours/week in each of the classes. The courses were delivered the platforms used by the above-mentioned education institutions - Google Classroom and Kinderpedia.

The research was carried out between March 2021 and June 2021, in five stages devised to deliver the projected activities, as follows:

- January-March 2021, studying the scientific literature to identify the type of knowledge in the field of biology, chemistry required by high school students in order to be able to assimilate specific anti-doping notions and what is their degree of understanding relative to their age. The anti-doping notions that students need to acquire were identified and structured by categories of content;
- March-April 2021, we selected the educational institutions where we conducted the experiment, we decided for the lessons to be taught at the grade 11 level within the high schools with sports program and we established the teaching contents. We also initiated and entered collaboration protocols with the said institutions.
- April-June 2021, the conduct of the survey on the knowledge of the issue of anti-doping education by the sports students, the analysis and interpretation of the survey results and the conduct of the experiment;
- June-July 2021, analysis and interpretation of the results of the experiment, drawing conclusions;
- devising the conclusions of the research and the proposals on the contents and forms of organization of anti-doping education in schools.

In the experimental research we used the following: the method of documentation, the method of pedagogical observation, the method of pedagogical experiment, the statistical-mathematical method, the questionnaire-based survey method.

The questionnaire applied in the conducted experiment was the main source of information on the level of anti-doping knowledge of the students. The questions comprised in the questionnaire were formulated in such a way as to cover the subjects with reference to which we want to introduce content to the theoretical discipline of sports and at the same time to provide us with valuable information on the attitudes manifested by the athlete regarding doping and the importance they attach to this field.

In order to determine the consistency of the research items, we have analyzed the alpha cronbach index by identifying the item variables, making descriptive statistics and analyzing the validity of the items.

Descriptive statistics have highlighted the fact that overall athletes scored an average score of 46 points, less than half the maximum value (100). Considering that from the point of view of the score, the most important variable analyzed, the values do not form a normal curve (skewness =0 and kurtosis =3), it can be stated that athletes do not have the minimum necessary knowledge of the anti-doping rules in sport.

In determining the contents for the anti-doping module, we took into account several factors, such as: the level of anti-doping knowledge of the students, their age and the capacity of analysis and synthesis as well as the number of hours that is limited.

The knowledge of the students in the field of doping was not acquired in the framework of formal education, some of them never received such information, others only from the media, and some had the opportunity to attend activities implemented within the anti-doping campaigns carried out by the national anti-doping organization or were educated by the teacher coaches.

Consequently, the chosen contents constitute basic notions, principles and rules that must be known and respected by every athlete, whether we are talking about a performance athlete or a recreational one.

The proposed general competence is as follows: *"Manifesting a pro-active anti-doping behavior based on attitudes and values of education to prevent and fight against doping in sport"*. With an aim to shape this behavior, we have submitted three proposed competences specific to high-school grade 11. These are presented in the table below.

**Table 1 - Specific competencies – high-school grade 11**

No crt	Specific competences	Content/units
1.	Correct use of specific terminology in the field of anti-doping, identification and observance of ethical principles in sport	Doping in sport - history, ethical values, the world anti-doping program; Prohibited List-International Standard of the World Anti-Doping Agency Definition of doping
2.	Capitalizing on the specific terminology used in doping control and showing appropriate behavior during doping testing	Athlete's rights and obligations Doping control
3.	Awareness of the negative consequences of doping on the body and sports performance and the manifestation of an appropriate behavior.	Adverse effects of prohibited substances

## Results

In the table below are presented the results obtained by the students of the experimental group in the questionnaire applied before and after the pedagogical experiment.

**Table 2 - Comparative analysis of the results of the experimental group**

Item No.	Questionnaire items	No. of correct answers initial application	No. of correct answers final application
1.	The Prohibited List includes: -substances prohibited in sport -substances, supplements and methods prohibited in sports -substances and methods prohibited in sport	13 (22,8%)	46(80,7%)
2.	Caffeine is a substance: -prohibited in competition -it is not prohibited -forbidden both in- competition and out-of-competition	36 (63,15%)	46(80,7%)
3.	The minimum amount of urine that an athlete must emit during the doping control is: -90ml -75 ml -120 ml	36 (63,15%)	52(91,22%)
4.	The sealing of the A and B containers containing the biological urine sample of the athlete is done by: -the athlete -doping control officer -any person in the doping control station provided that he thoroughly checks it	20(35,08%)	39(68,42%)
5.	If the amount of urine is insufficient, the athlete will proceed to: -sealing the sample, completing the documentation and leaving the station -sealing the partial sample and, subsequently, issuing another sample so as to reach the minimum necessary	40(70,17%)	36(63,15%)

	-keeping the urine recipient until a new sample can be issued so that it has the minimum required quantity		
6.	The athlete may be subjected to a doping control during a competition even if he has not competed: - true - false	35(61,40%)	48(84,21%)
7.	If I want to respect my sports discipline and be the best as an athlete I must: -realize that the most important thing is to win; -do anything to gain an advantage; -know that a failure is something wrong; -none of the above	31(54,38%)	51(89,47%)
8.	If the doping control result tests positive, you have the right to: -request the analysis of sample B -to participate and be represented at the opening of the B sample -ask for copies of the laboratory's package of documents -all of the above	32(56,14%)	50(87,71%)
9.	Who is authorized to collect a blood sample? -an OCD who is certified to perform venous puncture -a registered nurse -a competent chaperone -all of the above	20(35,08%)	42(73,68%)
10	After I give a sample (blood and / or urine), for how long can it be kept and reanalyzed? -an unlimited period of time -10 years -2 years - it cannot be kept	4(7,01%)	42(73,68%)

In reviewing the results scored by the students on the first versus the second application of the questionnaire, after attending the classes focused on teaching anti-doping notions, we reached the conclusion that their level of relevant knowledge had improved. We also noted that the number of correct answers to the key-questions had increased (namely the questions referring to the possible circumstances leading to the violation of anti-doping rules). For instance, question #7 referred to what it means to be the best in the sport they practice. By the second application of the questionnaire, we noted that athletes no longer replied that one must do anything in order to win. When one is willing to do anything to win one becomes vulnerable to doping and can easily be persuaded to resort to it. It is also important that athletes have noted that a sample can be kept for a period of 10 years and that during this period it can be re-examined using more advanced technologies than at the time of sample collection.

Where prohibited substances are used and they were not detected at the time of the first analysis, one cannot enjoy either the medal or the other benefits (including the financial ones) because a positive result can be revealed later and that leads to the withdrawal of the medal and all the other benefits.

At the first application of the questionnaire, we found that athletes do not have sufficient knowledge of anti-doping terms and procedures. We also found that most of the knowledge they have refers to the doping control procedure, yet this knowledge is not sound and does not include what is actually important to grasp.

For example, an important aspect in the procedure of collecting urine samples is their sealing. The students had no clear knowledge of who should seal the test (only 20 out of 57 students of the experimental group knew). The sealing must be done exclusively by the athlete, because the responsibility for handling the test lies with the athlete. This is the only way to ensure that the biological sample has not been replaced or contaminated. Anti-doping regulations also state the rights athletes have during the doping control. A good knowledge of their rights is an additional measure to ensure that the doping control process is carried out in a fair way, including the procedure for results management of the doping control. Also noted was an increase in the number of correct answers to the question on the rights of the athlete where the analytical result stemming from the analysis of his/her biological sample indicates the presence of a prohibited substance.

Further, the anti-doping regulations also provide for the obligations of the athletes. Failure to know one's obligations as an athlete can lead to a possible violation of anti-doping rules. From the first application of the questionnaire, we learned that not many students were aware that they were required to undergo the doping testing in a competition even if they do not compete on that occasion. They could therefore unintentionally commit an anti-doping rule violation. At the second application, it was noted by the extent of the correct answers that 84.2% of the students acquired this information.

**Discussions:**

The students expressed an interest in the anti-doping information and, moreover, within a brief span of time, they acquired additional knowledge. We are of the view that, should the students have been availed more time to take stock of the information, the final questionnaire results had improved. On one hand, this shows that the contents were appropriately selected and this enabled them to make them operational and usable. On the other hand, their answers to the key questions (the ones focused on the circumstances leading to resorting to doping) were honest and indicated that they could run the risk of doping due to the lack of information. This serves as confirmation that many doping cases incurred by junior athletes are accidents due to failing to know the regulations in the field.

At the same time, by providing students with appropriate information on the extent of the risks to which they are exposed to by resorting to doping, both from a medical and from a sporting point of view, we offer them the opportunity to make an informed decision on whether or not they choose to use doping. On the other hand, by being properly informed it is certain that the prevailing influence of the support personnel is diminished.

**Conclusions**

The level of knowledge of coach-teachers allows them to teach students the basic anti-doping notions. Also, they appear aware of the role they hold in the life of athletes and find it beneficial for anti-doping education to be implemented via theoretical teaching as it enables the shaping of specific approaches in the education of high-school level students in the subject of Theoretical Sports Training.

In order to understand the notions taught in the respective subject, students must have basic knowledge in the field of biology and organic chemistry and skills that allow the assimilation and use of notions that require the correlation of several information from different fields. The results of the experimental research have highlighted that grade 11 students have the age, intellectual level and acquired skills to assimilate information in the field of anti-doping. At this age, with few exceptions, athletes are preparing to change the sports category, to move from junior to senior level. Therefore, they should have a portfolio of anti-doping knowledge, with attitudes of rejection of doping already acquired and a pro-active behavior against doping that allows them to successfully cope with the anti-doping requirements established for high-level competitions in sport.

The results of the survey initially carried out in the experiment reveal that the students do not have solid information, the knowledge necessary for a solid anti-doping education, most of the correct answers were given only to questions that concerned the doping control procedure and less to those of an ethical nature and the management of the results. The results highlight that the grade 11 students who participated in experimental research have empirical knowledge of important issues on key issues but they are interested in the field. This attitude was also manifested in the experiment group during the classes, the students showing interest in knowing about the anti-doping activity. The results of the questionnaire initially applied may also be correlated with the existing information on doping cases recorded, at national level, in the range of junior athletes. They are rendered vulnerable by the lack of knowledge of topics such as the doping control procedure; for example, they do not know that the doping control officer is not allowed to manipulate the sample or that they are not allowed to hydrate themselves from unsealed containers handed by the event organizers or other athletes. The results of the experiment validate the correctness of the selection of the contents. These contents took into account the basic notions and information that help the sports students in their performance and training. The selection of contents was supported by the author's experience as lecturer in anti-doping education programs which enabled a direct observation of the athletes' conduct in relation to anti-doping and to their information and education needs. From a different perspective, the author's background as member of the Hearing Commission allowed for the opportunity to listen first hand to the story of each athlete who resorted to doping, to identify the causes that led to this choice. These two perspectives allowed for a selection of contents to be taught in support of a solid relay of relevant anti-doping learning.

Based on the results recorded by the student athletes from the experimental group, who have displayed a significant evolution in the knowledge of the basic notions of doping and its harmful effects, we are of the view that the first hypothesis of the research is confirmed. Students have proven that they have the ability to assimilate basic anti-doping notions, that they are directly interested in the topic. In fact, after learning about the negative impact on health and sports careers when choosing doping, I noticed from the attitudes manifested during the classes that they have become much more careful and responsible in their choices. It is natural that when one is well informed on the subject to reflect much more whether or not to choose to break the rules. Thus, we believe that even for the athlete support personnel it will be more difficult to persuade athletes to resort to doping.

For instance, when learning that an athlete can win a medal, can rejoice in the glory and the material benefits until such time when improved analytical technics reveal the use of doping – determines young athletes to reflect thoroughly on the risks of doping. We can conclude by stating that, YES, the shaping of a general competence oriented towards pro-active anti-doping attitudes and values in the students of the vocational high school cycle classes, based on theoretical knowledge framed in an adequate didactic strategy, allows the acquisition of a responsible behavior of the sports students.

We consider that the results of the pedagogical experiment provide objective arguments in supporting formal education in acquiring a competence that highlights knowledge, values, attitudes and pro-active anti-

doping behavior and based on these we have formulated the proposal to introduce the contents proposed in the school curricula to the subject of Theoretical Sports Training, which we submitted to the Ministry of Education.

**Conflicts of interest** – There is no conflicts of interest to declare.

## References

- Barkoukis, V., Kartali, K., Lazuras, L., & Tsorbatzoudis, H. (2016). Evaluation of an anti-doping intervention for adolescents: Findings from a school-based study. *Sport Management Review*, 19, 23–34. <https://doi.org/10.1016/j.smr.2015.12.003>
- Cook T.D., Campbell D.T. *Quasy-Experimentation Design and Analysis Issues for Field Settings*, Chicago, USA, 104-109;
- Leedy, P. D., Ormrod, J., 2009, *Practical research: Planning and design*. 9th edition. Harlow, UK: Pearson Education Limited
- Epuran M. (1980). *Psychology of Physical Education*, Didactic and Pedagogical Publishing House, Bucharest
- Enciclopedia Educației Fizice și Sportului, 2015, coord. Prof. Dr. Nicu Alexe, ediția a IIa, volumul VIII, Ed. Maiastra, Bucuresti
- Edlund, J. E., Nichols, A. L., 2019, *Advanced research methods for the social and behavioral sciences*. Cambridge: Cambridge University Press.
- Flick, U., 2018, *An introduction to qualitative research*. 6th edition. London: Sage Publications, Ltd
- Dvorak J, Baume N, Botré F, Broséus J, Budgett R, Frey WO, et al. Time for change: a roadmap to guide the implementation of the world anti-doping Code 2015. *Br J Sports Med*. 2014; 48:801–6.
- Dunn, M., Thomas, J., Swift, W., Burns, L., & Mattick, R. (2010). Drug testing in sport: The attitudes and experiences of elite athletes. *The International Journal on Drug Policy*, 21(4), 330-332. <https://doi.org/10.1016/j.drugpo.2009.12.005>
- Goulet C., Valois P., Buist A., & Côté M. (2010). Predictors of the use of performance-enhancing substances by young athletes. *Clinical Journal of Sport Medicine*, 20(4), 243-248. <https://doi.org/10.1097/JSM.0b013e3181e0b935>
- Lambert, M. ,2019, *Practical research methods in education: An early researcher's critical guide*. New York: Routledge
- Louveau, C. și colab., 1995, *Dopage et performance sportive. Analyse d'une pratique prohibée*. INSEP Publications, Paris, 43-75
- MacNamara, Á., and Collins, D., Why athletes say no to doping: A qualitative exploration of the reasons underpinning athletes' decision not to dope, Available at <http://clok.uclan.ac.uk/12447/>
- Ngulube, P., 2020, *Handbook of research on connecting research methods for information science research*. Hershey, PA: IGI Global
- Javier Álvarez Medina, Pedro Manonelles Marqueta, Alberto Grao Cruces, Enrique Oliete Blanco, Víctor Murillo Lorente, Alberto Nuviala Nuviala, “Effectiveness of a school-based doping prevention programme in Spanish adolescents”, 2019, <https://doi.org/10.14198/jhse.2019.144.10>
- Japan Sports Agency. Improve transparency, equitability and fairness of the sports world. Efforts to prevent doping. [http://www.mext.go.jp/sports/b\\_menu/sports/meatetop10/list/1372215.htm](http://www.mext.go.jp/sports/b_menu/sports/meatetop10/list/1372215.htm). (accesat ianuarie 2019).
- Palaiologou, I., 2016, *Child observation: A guide for students of early childhood*. 4th edition. Thousand Oaks, CA: Sage Publications, Inc
- Patten, M., 2017, *Questionnaire research: A practical guide*. 4th edition. New York: Routledge
- Ridder, H. G., 2017, The theory contribution of case study research designs. *Business Research*, 10(2), 281-305. <https://doi.org/10.100740685-017-0045-z>
- Todd, T., 1987, Anabolic Steroids, *Journal of Sport History*, 14, Illinois, 87- 107
- Vâjială, G. E. ,2007, *Doping in sport. Prevention and fight against doping in sport*, Editura FEST, Bucuresti
- Züll, C. (2016). Open-Ended Questions. *GESIS Survey Guidelines*. Mannheim, Germany: GESIS – Leibniz Institute for the Social Sciences. [https://doi.org/10.15465/gesis-sg\\_en\\_002](https://doi.org/10.15465/gesis-sg_en_002)
- World Anti-Doping Agency. WADA launches new anti-doping eLearning platform (ADeL). 2018. <https://www.wada-ama.org/en/media/news/2018-01/wadalaunches-new-anti-doping-elearning-platform-adel>. (accesat 2019)
- World Anti-Doping Agency. Wada launches ALPHA: a fresh approach to anti-doping elearning for athletes. ([www.wada-ama.org](http://www.wada-ama.org), accesat 2019)
- World Anti-Doping Agency (WADA). World Anti-Doping Code 2015. 2015. <https://www.wada-ama.org/en/resources/the-code/world-anti-doping-code>. (accesat decembrie 2019)