# World Anti Doping Agency (WADA)
## Ethics and Education Committee

### Application Form for Social Science Research Grant

## A. GENERAL INFORMATION ON PROJECT

**Date of Application:**

**Project Category** (please check only one box)**:**

- X Increasing knowledge of causes and of risk and protective factors in doping behavior
- ❑ Evaluating anti-doping intervention programs
- ❑ Improving social science research on doping prevention

| **Project Title: Risk Factors within Doping Behavior Related to Personality Structure and Social Environment of the Athletes** | |
|---|---|
| **Duration of Project** (max. 3 years) | Start (10/01/2006):<br>End (10/01/2008): |
| **Amount requested from WADA for each year** | Year 1: 7.500 USD<br>Year 2: 12.500 USD<br>Year 3: - USD<br>**TOTAL 20.000 USD** |

**Significance for Doping Prevention**

Understanding the phenomenon from an inter-disciplinary perspective may lead to learning a new dimension of the doping phenomenon, of some mechanisms and factors that may influence the athletes' behavior towards fair-play attitudes.

Obtaining this information about doping phenomenon by the research performed on the athletes in Romania allows ANAD and its operational structures to build a scientific base for the educational interventions. The "targets" of the educational interventions will be: children and adolescent athletes, high level amateur and professional athletes.

The main purpose of this project was to asses the athletes in Romania's attitudes towards the use of substances that increase the performance and the possible correlations between such orientations and the type of personality, other psychological factors and their social influences. Based on the results obtained by the analysis of the subjective conditions (personality structure and attitudes) and the influences of the environment that favored the temptation and the use of prohibited substances we may conduct in the future effective education and information campaigns for the high risk population. Even more, the finality of this demarche helps obtaining a realistic image of the doping substances use issue in Romania.

**Relevance of Project to Your Institution or Anti-Doping Program**

This research project is a major source of information, which leaded us to the elaboration of some previsions regarding the trends towards doping behavior. This is

useful for all the people involved in sport activity, from coaches and the persons in the athletes' entourage to the managers of the sport structures and the persons in charge with the decision making.

The conclusions and the propositions of this research will be the base of some future information programs' design, adapted to the types of personality predisposed to doping behavior, enforcing the efficiency of the actions of fight against the doping practices in Romania.

The development of this project was implemented also by the aid of the funds provided by the National Anti-Doping Agency – Romania, which paid the travel and accommodation expenses for the researchers as well as the wages. RANAD also provided the researchers with office equipments: PC, copier, fax and unlimited access to Internet. The value of this contribution exceeded the sum in the project's budget (more than 25.000$).

# CHAPTER 1 INTRODUCTION

## 1. General framework

The phenomenon of prohibited substance use among athletes, intending to increase artificially their performance has its origins in the ancient times and it is now so present, as it is supported and fed by the professional sport, so much commercialized and mediated.

In the current study, we take into account that according to the humanistic psychology, the individual is free to decide over his or her life, being capable to make decisions and to lead himself or herself. Although each individual is unique, he lives in a collectivity, which is on its turn unique. From the synthesis of the two systems results a specific behavior of the individual athlete, who lives the sport activities specific situations.

The efforts of the militants for a *clean sport* which are now or efforts, must be based on a good knowledge of the *personality traits* of the athletes and the impact of the impact of the *entourage* over them. All educational activities aiming to reduce and finally eradicate doping in all sports should be developed on these bases.

## 2. Risk factors

The Risk factors are the events or variables which might facilitate the occurrence of a disorder or an unwanted, not-functional, aberrant and anti-social behavior. The correlation between such variables and a deviant behavior does not have a causal character. When disorder or a dysfunction occurs, a case analysis should be developed and the prevention actions should be implemented. By knowing a certain type of behavior or personality, the educational factors (school, family, coaches, doctors) have the possibility to intervene in order to protect and prevent.

Generally, when a somatic or psychic dysfunction occurs, it is supposed to have many factors involved, with a summative action and different ponders. The factors may be genetic or they may be related to the individual traits and life style. In every day life, risk factors such as tobacco, alcohol, too much food are invoked as causes of disorders. There are people who live gong despite the fact they don’t follow the hygiene rules. Nevertheless, the statistic expresses how right it is to associate the disorder with the above-mentioned hygienic factors.

*The risk factors are variables associated to the risk, in terms of probability, where one or more variable in some circumstances may be boosts for a deviant behavior such as the use of prohibited substances among athletes.*

*The risk in sport*

Some performance sports are by definition characterized by potential risks of injuries and accidents, sometimes rough. On the one hand, there are the sports named “rough”, such as soccer, rugby, kick-boxing while on the other hand, there are the extreme sports, practiced in nature, in incertitude, such as delta-plan, solitary climbing, motorcycling, skiing and ski-flying. It is clear that many injuries occurs in all sports and for subjective causes, related to psychical factors, such as absentmindedness, impulsivity, high arousal, sub-evaluation of the situations or opponents, irrationality etc. As a general rule, most of the athletes feel high arousal as unpleasant.

The reality shows that in sport there are athletes characterized as willing to live exhilarating and exciting experiences and to risk. All these athletes are in the category of athletes with high achievement motivation or paratelic motivation (Bouet, Kerr, Maslow). In the paratelic state behavior tends to be oriented towards the present and is concerned with the pleasure of immediate sensation, usually of high intensity. The athletes are looking for or even cause states of high arousal, as sources of pleasure. The main personality traits are to look for the risk, to accept the risk and the challenge and to look for high arousal. An well known French stunt of the last century 50’s described the feelings of courage and fear he felt and documented them in his book "Risk is my job" (1971). Apter (cf Kerr; 1982) describes this type of behavior in *reversal theory* "the degree of motivational intensity which an individual experience inconscienciousness at a given time.", a felt arousal, closely related with physiological arousal.

The two states, courage and fear exist together in pairs of opposites in what are described as bistable system. In the bistable system an individual may prefer to be in one or other of these stable phenomenological states. (Kerr, 1982, p. 186)

One of these meta-motivational states is the pair *telic state* and *paratelic state*. In the telic state, the subject is oriented towards certain purposes projected in the future. In the paratelic state, the subject is oriented towards the present and interested in the pleasure of immediate, normally high intensive sensation.

Reporting the two states to the high or low level of activation, the author underlines exactly the emotional excitement, exhilaration produced by the high risk situations where the subject’s activation (setting, motivation) is high.

| | **Telic state** | **Paratelic state** |
|---|---|---|
| **High activation** | **Unpleasant (anxiety)** | **Pleasant (excitement)** |
| **Low activation** | **Pleasant (relaxation)** | **Unpleasant (boredom)** |

**Table no. 1 – Relationship between the meta-motivational Telic and paratelic states and the preferred level of activation**

Most of the athletes with such a motivation are aware of the possible danger and establish the behavior most suitable to the situations. The cause of some injuries may be an unpredictable association of events with negative effect.

The subjective reasons may be influenced by unconscious mechanisms (defense, suppression, sublimation), the information received being invested with different significations, biased. Risk behavior may be determined by a conscious estimation or a profound latent reason (supra-compensation, addiction). The solutions considered the best on a certain temporal dimension prove to be a failure. (cf. Gorgos, 1989)

The psychological risk is appreciation and outreach of the probability of success or failure in a dangerous situation, with unpredictable traits, when the decisional behavior of the subject denotes that he feels responsible for his action. The decision of risk is opposed to the hedonic decision to avoid danger.

The conclusion of the above lines is that in the large population of athletes, there are some individuals whose personality traits are related to looking for extreme sensations and high risk. These traits are predicable factors for an agonistic hyperactive behavior, with high arousal.

*The risk to adopt some anti-sport attitudes*

"Nothing ventured, nothing gained" may be the slogan of some athletes who wish to win the competition or other people esteem no matter what the costs.

In case of athletes presumably endangered to use prohibited substances to increase unnaturally the performance, the definition of Paul Popescu-Neveanu about: "*concept characterizing the decisional behavior occurred in an uncertain situation that may involve danger and failure"* (1978, p. 626) suites their condition.

To look for risk is a particular trait of many athletes within the category “super”. It is an attitude of facing a “challenge” submitted by the nature or by the technological and artificial condition of the space, time and psycho-behavioral barriers, while the ones who tend to use doping, it is the frustrations of those interdictions. (cf. Epuran, 1990)

The athletes who use *doping* substances risk severe administrative sanctions when they are caught by the mean of a doping control (ineligibility for a period of time or even lifetime ineligibility).

The question is why some athletes manifest favorable attitudes towards the use of prohibited substances, why they accept the competitors who use doping, why do they use such practices?

Usually we look for the explanation in the *motivation* of this behavior, in the mechanisms of the sport specific motivation psychology, in the cognitive mechanisms of the decision as well as in the factors causing it. It is more difficult to know well the causes, as it is obvious that there are many factors

involved in the phenomenon, individual, collective-social, cultural and situational factors.

Empiric researches were developed in anti-doping lately, leading to answers to problems specific to the institutions responsible and to perspectives for more efficient actions to fight against the use of prohibited substances phenomenon.

In looking for an answer to the problem of our program we use as basis the idea that *the athlete, as individual, is unique and the group he or she is a part of is also unique.*

In the same time, we underline that one can not perform experiments in doping to find out the risk quota (getting sick and sanction) as one can not perform experiments on people not using the seatbelt to find out the quota of getting injured or death.

As result, the psychological, pedagogical researches shall be limited to *case studies, survey.* (We do not talk about the biochemical techniques of prohibited substances detection and their level of danger).

Trying to understand the causes and the conditions favoring the use of unfair practices by some athletes led to an hypotheses, the one of *risk factors* in doping being the most suitable and productive one.

The risk to become a victim (to get sick, to worsen the physical and psychical state) becomes possible as result of *certain influences* performed by different factors, such as the personal, social and situational ones, which may action individual or associated, even more than one. Some factors may action concurrently, the ones with a larger ponder and more powerful subjective and statistic signification being more important.

The approach used in our research took into account since the hypothetic stage that the psychological factor (personality structure and some traits determined by the decision related to risk) are associated to the external social and situational factors (the entourage and the agonistic specific of sport activity).

*Models of approaching the risk factors associated to the use of prohibited substances*

1. *The "Risk and Protective Factors" model*

It is developed by Find Youth Info (2009) and it is a Program Tool Risk Factors, where the risk factors are shown as conversely protective factors. Risk factors and *protective factors* are distributed in five categories: * *Individual;* * *Family;* * *School;* * *Peer group;* * *Community.* The factors of this model present psychosocial determination and they are related especially to anti-social behavior, such as accepting drugs, intellectual disabilities, life stressors, low parent educational level, inadequate school climate, etc.

In 2001 Linn Goldber proposed the ATLAS/ Athletic Training and Learning to Avoid Steroids Program. In 2007 the ATLAS program is sponsored by Sport Illustrated in several US States

2. *The Petroczi - Aldman (2008) model*

The authors think the risk factors are distributed in three structures: 1. Personality Factors (performance enhancement, commitment, low self-esteem, high trait anxiety); 2. Systemic Factors (motivational climate, authority structure), and 3. Situational Factors (peer interaction, role model, environmental factors). Some personality traits can act as inhibitors of doping engagement (e.g. positive and stable self-esteem, conscientiousness and low risk-taking propensity).

3. *The Wiefferink et al. (2006) model*

The authors initiated a behaviorist model, using Ajen's Theory of Planned Behavior and Bandura Self-efficacy Theory to models determinants of doping use. The integration of these two theories leads to three major constructs that explain behavior, namely *attitudes, social influences, and self-efficacy*. In Wierrerink's model, these constructs are influenced by *Background variables* e. g. knowledge, personal goals, sport modality, and demographic characteristics.

4. *The Strelan and Boeckman (2003) model*

This model is based on an application of deterrence theory, explaining athletes' Performance Enhancing Drug (PED) use in terms of criminal behavior. The model posits an athlete's decision to use PED as the consequence of an analysis of deterrents (e.g., sanctions) relative to benefits (e.g., sponsorship) moderated by situational factors (e.g., type of drug or perceived prevalence). The only empirical test of this theory uses AFL players (Strelan & Boeckman, 2006) and shows the model has merit as an explanation of the psychology underlying an athlete's decision making on PED use.

Many of the models and theories that aim to explain drug use in sport are limited by a focus on individual athlete decision-making that centers on the socioeconomic costs and benefits of using drugs. However, this limitation narrows the debate to how various penalties and sanctions might curb use. The authors suggest that to broaden the debate the investigation should include an exploration of the context in which drug use occurs and a situational diagnosis of the assumptions, values, and beliefs that underpin drug use in sport. To this end, the authors have developed a model of drug use in sport that combines the micro orientation of individual athlete and interpersonal behavior with the macro orientation of sporting context, structure, and culture. They use this contextualized model to contrast a use-reduction policy with a harm-minimization policy that allows sport organizations and athletes to manage their drug use in a safe and secure environment. (Cf. J. Mazurov, 2008)

5. *The A.N.A.D. - Romania model*

This model distributes the risk factors in three groups shown for the first time in the following table:

| *1. Individual* | *2. Social* | *3. Situational* |
|---|---|---|
| 1.1. Personality traits<br>1.2. Performance motivation;<br>Victory no matter the costs<br>1.3. Self image<br>1.4. Specific attitudes<br>1.5. Culture and education level | 2.1. The affiliation group:<br>Family<br>Class or professional institution<br>Leisure group<br>Sport team<br>Sport club<br>2.2. Social environment - mass-media, civil society; social representations over the sport and athletes' statutes | 3. 1. Competition and performance need<br>3.2. Rivalry perceived as threat<br>3.3. Factors of uncertainty in the competition area |

**Table no. 2 – Romanian model of approaching the risk factors associated to the use of prohibited substances**

The list and the description of the risk factors are done as it is necessary to check the hypothesis of the research. The risk factors **shall be described with a negative connotation but we should keep in mind all over the diachronic speech that when they are seen with a positive connotation, they become protection and correct development factors for the athletes' behavior.**

*The structure of the personality*

The human personality is a hyper complex system of functions, processes and psychic mechanisms, expressed in consciousness, thinking, memory, attention, communication, affectivity, motivation, will and it actions usually unitary in behavior adequate to one's own needs and to keep the balance with the social-cultural ambiance.

For our study we limited and took into consideration only some elements we considered important for the theme of our research and we appreciated we can make objective to ensure the efficiency of our demarche.

The studies of personality, which refers to the way people are different, are based on two types of concepts. On the one hand they are interested in describing many ways some people are different from others. These studies are described in a big number of theoretical concepts but all of them are interested by *traits, types, motives, values, temperament, schemas and beliefs*. On the other hand, they are interested in developing ways of quantitative measurement of these individual differences. By these ways distinct individual qualities, thoughts, feelings and motivations may be determined.

*Traits and types.*

A theoretical and methodological issue is the one of *point of view* of approaching the athlete's personality. It is well known the method of describing the personality through traits and it is supported by the personality inventories, from which the best known are *16 P. F.* (Cattel), *Minnesota* (Lubin et al), *Anxiety* (Spielberger) etc. The typology reunites descriptive traits under a

label/denomination. The physical (somatic), physiological and psychological typologies are well known. From the last ones we recall about the *temperamental and character typologies*, among them some with double affiliation, C. G. Jung's typology – *introversion and extraversion*. The last decades were in favor of H. Eysenck's conception development, where the two points of view are combined, namely the traits and types, investigated with more variants of questionnaires, designed to reveal *traits and characteristics* in the structure of *the fundamental types* of introversion-extraversion.

**1. Individual factors**

The science of psychology considers personality the largest and the most complex concept. This way are explained so many theories trying to describe and explain this concept. We remind about the psychic-analytical, psychic-dynamic, behaviorist-cognitive, biological, humanistic, social-cognitive, phenomenological, existentialistic, as well as the modern themes of attribution, motivation, the spot of control, stress etc.

*1.1. About personality*

General aspects: the most general construct of the psychological theory, the nucleus of the human being determined by genetic factors, of learning, by social influences.

The personality structure is seen from many perspectives or points of view: of the mechanisms or processes (knowledge, affectivity, and conation), of the types or traits (temperament, character, and attitudes), of the abyssal factors (instincts and unconscious but involuntary pulsate manifestations), of communication and learning etc.

*The theory of the behavior conditioned by the personality traits and situations (Paul Fraisse)*

Practically, it is known as the formula of Paul Fraisse who establishes that the answers (individual's behavior) to the stimuli of the "situations" depend on his personality structure.

We may adopt the point of view and the scheme proposed by Paul Fraisse (1967, I, p. 78-79) by taking into consideration the general behavior of the person who practices physical exercises less systematically as being influences by them. The French author considers "the conduit as relation", as a system of physiological and psychological components in interaction with the situation. The way the individual shall behave, his answer (**R**) shall depend on the stimulus of the situation (**S**) existent in a certain moment and on the structure of his personality (**P**), in other words, on his body, experience, temperaments and needs (p. 75-79). This point of view results in the formula ***R = f (S <=> P). The answer, the behavior depends on the interaction between the situation and personality***, an affirmation fully valid in the study and understanding of the human being's behavior no matter his activities.

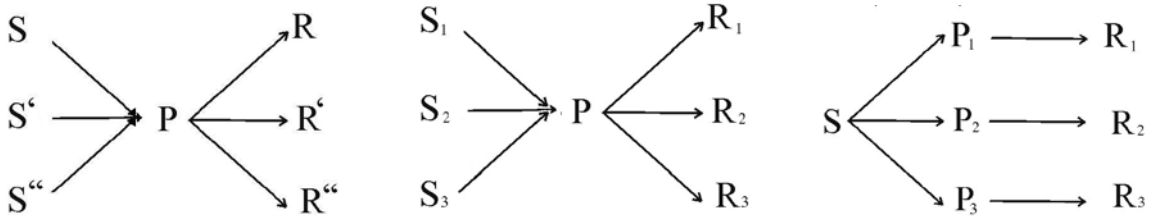


**Diagram no 1 – Relation between the situations, personality and answers**

1) *Functional relation:*

*S, S', S" are systemic variations (qualitative and quantitative) of the variable stimuli/situation, leading to different answers (R, R', R'')*

2) *Factorial relation*

*S1, S2, S3 are <u>different</u> variable stimuli/situations leading to different answers of the same subject $R_1$, $R_2$, $R_3$*

3) *Differential relation:*

*<u>Different</u> subjects ($P_1$, $P_2$, $P_3$) shall react ($R_1$, $R_2$, $R_3$) <u>different</u> situation or stimulus, based on their individual (personal) characteristics of age, gender, education etc.*

*Personality* (P) shows different integration levels and somatic, motric, psychic, physiologic particularities on different ages and genders. The personality traits are considered *invoked variables.*

*Situations (S)* consists in environment stimuli (winter, summer, temperature, closed spaces, open, altitude etc.), specific stimuli (type of activity, effort, duration, exercises, structure and other characteristics), variations of the natural and social environment, as well as the types of activities (education and training, competition, recovery etc.). The psycho-social factors (entourage, colleagues, opponents, coaches, managers, mass-media, fans etc.). In psychological and pedagogical researches, they talk about stimuli, some of them as tests (psychical reactive) or items from questionnaires.

From our point of view, the *answer (R)* may be considered under different forms: different psychic manifestations in situations of learning or exam, group psychic-social manifestations, behavior in competition and extreme situations, emotional or over-motivated behavior, level of physical development, reaction to effort, tactic answer, performance in competitions or different contests and tests etc. . As I. Radu (1993, p. 14) underlines, behind the answer there is a complex sum of feelings and psychic manifestations that should be interpreted.

*The Theory of Planned Behavior /Reasoned Action*

Some researchers of the athletes' behavior (Petroczi, 2008), Fung & Yuan, Wiwffenik (1996) adopted as guiding framework the theory of reasoned/planned behavior. Ajzen and Fishbein formulated in 1980 the theory of

reasoned action. Later, the theory was colled the Theory of Planned Behavior (Ajen, 1985). The theory of planned behavior is a theory which predicts deliberate behavior, because behavior can be deliberative and planned.

"Theory of Reasoned Action suggests that a person's behavior is determined by his/her intention to perform the behavior and that this intention is, in turn, a function of his/her attitude toward the behavior and his/her subjective norm. The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavioral control. The theory of planned behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior. In addition to measuring attitudes toward the behavior, we also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. These predictors lead to intention. A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question." (Universiteit Twente, 2004)

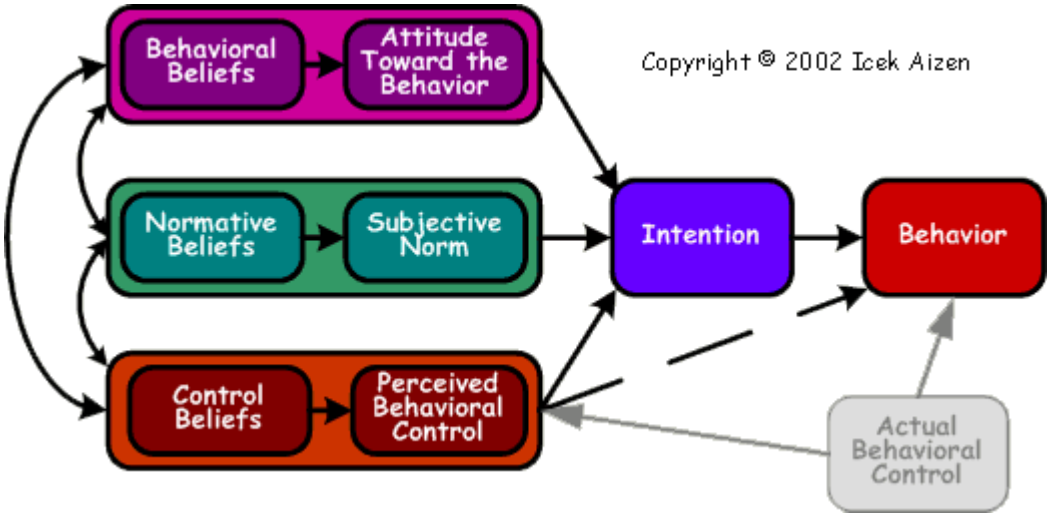


**Diagram no. 2 – The theory of Planned behavior**. Source: Ajzen, I. (1991). *Organizational Behavior and Human Decision Processes*, 50, p. 179-211.

By comparing the diagram of Fraisse with the one of Ajen, we notice that the latter does not take into consideration the objective factors (situational and ambiental) which are the external determinants of the subjects' mental. Sport activity and the entourage produce the perceptions, knowledge, beliefs,

imposing in the same time the norms. It is obvious that the original structure of personality and the one acquired shall influence the shades of athletes' feelings.

*Structure of personality*

The psychological literature treats personality from different points of view. One is the one of *structure,* considered as having cognitive, affective-motivational, learning components, adaptive and development mechanisms, communication, moral development, intelligence and decision etc. There is another point of view, the one of the personologists who study the diachrony of personality development and the theories characterizing it, focusing on individual's traits and attributes. Supporters of behaviorism, dynamic psychology, the psychology of self, cognitivism, humanism, phenomenology described many aspects of the hyper complex system that is human personality.

In our research theme we have decided to focus on the fundamental personality structure, especially on the theories of traits and types (Eysenck-Wilson (1985) and M.I. Friedman and R.N. Rosenman (1974) and the way these interact with the social environment. *We underline the idea that different types arranged in classes by the literature are described in terms of traits, characteristics or attributes.*

*The theory of Type A Behavior Pattern*.

In 1974, M.I. Friedman and R.N. Rosenman published the paper work "Type Behavior and Your Heart", since they noticed an increased number of people suffering from cardio-vascular disorder among the patients with personality traits named by the authors type A.

The questionnaire - *Type A and Type B Behavior* (Walker - Brokaw, 1986) follows the subjects' description based on the scale they belong to: Extreme Type B; Type B, Both Type A and B; Type A; Extreme Type A.

Traditionally, Type A of Behavior Pattern (TABP) - first introduced by Friedman and Rosenman - is considered risk factor in coronary heart diseases. Recent studies revealed the connection between this type of behavior and different psychological variables, such as extraversion - introversion, self-perfectionism, a high level of competitiveness, a high need for achievements and recognition, ambition, overwork for aiming the purposes, hostility, aggressiveness, behavior reflecting impatience. In transversal descriptive studies, it had been connected with fear for negative evaluation. Generally, these individuals talks fast, acts fast as well, they interrupt their interlocutors and shows signs of impatience. They present a higher level of extraversion than type B personality subjects, being more neurotic, more hurriedness and more impatient.

The behavior of Type A Behavior Pattern (TABP) is ruled by three factors: *competitiveness, impatience* and *aggressiveness*. Lifestyle associated to this type of behavior develops specific mechanisms of protection against what is perceived as a possible obstacle or tension factor. Thus, the researches

developed by Hassmen P, Stah I R, Borg G show that personality type is a influence factor in the evaluation of self image and of perceived effort as well as of resistance against doping and alcohol. (Kirkcaldy, Shephard, Siefen).

*The questionnaire Toughmindeness/Tendermindeness (Eysenck-Wilson, 1985 )*shows that the individual belongs to a class both attitudinal and behavioral and underlines traits we find in Type A of personality, among which the most significant are: aggressiveness, assertiveness, achievement orientation, manipulation, sensation seeking, dogmatism, and masculinity.

The questionnaire *Profile of Mood States* (POMS) proposed by McNair et al. (1992) also comprises scales relevant for personality and behavior traits under study. These scales are: 1. Tension/Anxiety; 2. Depression/ Dejection; 3. Anger/ Hostility; 4. Vigor/ Activity; 5. Fatigue/ Inertia; 6. Confusion/ Bewilderment.
(See the description of these traits in the chapter "Methods of research").

As we know that human personality is a complex mixture product of heredity, education and environment, we take into account the echo of social and situational – sportive factors on athletes' personality and behavior. To learn about these determinations, we think the questionnaires for *self consciousness, for motivation and for motivation and attitudes* designed for the athletes are adequate.

*The personality of elite athletes*

The question asked in the middle of last century related to whether sport develops specific traits in the performer or these are structured in his private structure hasn't been answered yet categorically. Many decades of researches revealed that elite athletes are characterized by some "stressed" traits, such as:
- reduced pro-social behavior (such as giving help or cooperation) and increased anti-social tendencies. Both tendencies are affected especially by defeats. (Barnett & Bryan);
- irrational rivalry (Kagen & Madsen);
- reduced altruism and lack of fair-play, values subordinated to victory as experience in sport enriches. (Web)

Based on the results provided by the authors quoted above, Thelma Horn (1992, p. 49) went to the following conclusion: "Therefore, literature shows that practicing sport leads to increased rivalry attitudes and anti-social behavior and does not build "characters" or personality traits valuable from the social point of view. This dark image has the power to draw our attention on the importance of educating the athletes as some of them live a risky life, for victory "no matter the costs" because of a supra-motivation supported by ambient factors with no cultural value.

In a few words: each athlete is unique, with singular characteristics, with typical, common traits in his structure. Some of these traits may constitute risk factors for the use of prohibited substances.

*1.2. Performance motivation*

Performance motivation is a trait of almost all individuals. According to J.W. Atkinson, this expresses the individuals' need to accomplish. The individuals with high achievement are the ones who detach from among the majority. Some athletes are characterized as low-achievers, while others are high-achievers, more ambitious and inclined to risk decisions. They will feel the activation pleasure high, they will accept the fight with strong opponents, they will avoid failure and sometimes will wish *victory or success no matter the costs.* This is a trait of the athletes who wish *both consciously and unconsciously* to win, to satisfy their ambitions, ego. They may be characterized by a low moral spirit and indifferent towards the fair-play rules. Radovanovic et al (1998) made a list of the reasons of doping use:

a. Professional athletes: 1. doping exists and is an advantage for the performance; it is easy to purchase the substances; the legal background shows holes; addiction may be added; 2. reasons related to athlete's personality: personality's structure, discontent related to inefficiency and lack of progress, attempts of coping with anxiety and stress, belief that others use doping too, incomplete ethical values, under other people's influence, lack of self confidence, not knowing the side effects. 3. reasons coming from athlete's environment: coaches, family, friends, audience, supporters, mass-media, society, financial and material benefits, national and politic grounds etc.

b. Amateur athletes: - some of the above-mentioned might be less significant or absent – unsatisfactory perception over the physical appearance; fight to become exceptional (macho), small progress of the results.

Despite the fact that our research did not approach this aspect, we presume some athletes with aggressive behavior belong to *psychopathologist syndrome of the champion* described by F. Antonelli by: attitudes of superiority, nerve, hyper-evaluation, exaggerated admiration, fanatism. "Without these premises it would be difficult to explain the 'doping' phenomenon, which is totally against sport", says the author. (1974, p. 196)

*1.3. Self image*

Self-image is the ensemble of the representations about oneself person, relative to capacities, own body, character, described by cognitive elaboration, unity and organization. It may be expressed in confidence - self-confidence or lack of self-confidence - diffidence, and in the feeling of self-worth. Optimal self-confidence is the requirement of a good performance. Overconfidence is a false confidence, many athletes are influenced by the praises of the people around them and by the successes in other areas.

On the other hand, many athletes live the disappointment of not accomplishing the targets. The repeated failures lead to negative expectations, which are followed by failure and consequently diffidence; the cycle goes on all over again.

The will to obtain good performances in a short time or with less effort becomes an distrait feeling and generates compensations behaviors, sometimes unethical.

*1.4. Sport specific attitudes*

Performance sport is solicitant both physically and mentally. It is a real stress when adequate coping techniques are not used. Many athletes develop the fear of failure syndrome and in case of repeated failures, the nonpossumus syndrome.(Antonelli, 1974).

The frustrations caused by not accomplishing the targets and failures become decision factors in using prohibited actions.

The decision to risk of these athletes is elaborated, thought upon a long time, with rumination and anxiety, sometimes guilt. The unconscious tendencies, aggressiveness and hostility are more powerful than the faculty of reasoning.

*1.5. Level of culture and education*

Lack of information and cognitive distortions are in the first place. The latter, together with the wrong beliefs are expressed in sentences such as “others use it, too”, “it’s not gonna be me the tested one”.

To decrease and in time to eradicate doping shall be caused by athletes’ training and education, as they become aware of the fact that they are directly responsible for what they are doing.

***2. Social factors***

*2.1. Affiliation group*

Usually we report to the social environment which is one of the first factors ensuring the development of the individual (together with heredity and education). In case of doping risk behavior, we would rather use the term affiliation group, *entourage*, the entourage meaning all the persons within the particular social environment of someone that is usually around the person.

*The entourage*

Hypothetically, a certain entourage may be considered risk factor in accepting or using doping. The positive and negative influences are well known (from ethical – attitudinal point of view) the affiliation group or social and cultural factors generate.

We consider more suitable the orientation towards the analysis of *entourage* (social environment) influences reported to the general concept of *environment.* (cf. Larousse) for our theme.

There’s no doubt, the athlete has his destiny in his hands and he is responsible of what he thinks and does. But it is also a sure fact that he lives in a social and cultural environment that influences and shapes him.

It is difficult to maintain the balance between *nature and nurture*, which causes the targeted educational actions, understood as support for the orientation of genetic factors (aggressiveness, restlessness) and interventions aiming to develop ethical and pro-social attitudes.

School-mates, sport-mates, friends, parents, school, coach and cultural factors and mass-media shall add, each of them, positive or negative shades to the attitudinal structure, to the perception over life or personal philosophy. There is the opinion that the coach's personality marks deeply athlete's attitudes and behavior, especially during the beginning of sport activity. The coach it is grounded thought to be in the same time technician, educator and animator-motivator ot at least this is what he should be. According to Pocwrdowski et al. (citați de A. Dodge & B. Robertson (2004), the relationship between coach and athlete has three major components: a. the technical component, b. the psychical-social component and c. the spiritual component. The coach accomplishes changes in athletes behavior related to loyalty and obedience by his activity and *authority.*.

The family, class or professional unit, the leisure group, the sport team is the environment where the athlete grows, develops, learns and succeeds. It is known that the group has multiple functions to satisfy his needs of security, affiliation, communication, social and professional integration, in a few words, to succeed.

It is known that the group has also negative influences over its members, resulting in risk factors for banned behavior.

The negative effects are supported by the wrong style of the group leaders. The group of friends does not have educational purposes; even more, the punctual attitudes and non-conformist behavior are stimulated.

The sport club has a particular position, aiming to performance. Educational activities are pragmatic. There are though situations where the club becomes *pressure group* over the athletes, who are insistently asked for positive results, victories. The pressure becomes thus a risk factor, increased by the fact that the coach and the doctor put on the athletes the same pressure they perceive from their managers. The vicious circle is there! The weak result endangers athletes and coaches status, and they must use and recommend cheating as they lack moral censorship.

*2.2. Social environment*

The large groups, society and usually the audience who are perceived as important by the athlete have expectations and exigencies from them. The development of mass-media in the last decades put an even stronger pressure, every day, in different forms. Elite sport is a show and a mean of confirmation of the sport value, important motivational stimuli, making the athletes, the coaches and the managers working for an image of excellence. The behavior models this environment cultivates are not entirely correct.

We shall include among the social factors the educational and protective institutions, responsible to organize the sport activity and in the same time to ensure the fairness of all the people participating.

**3. Situational factors**

As the athlete is simultaneously affiliated to many groups, he also lives diachronically many situations in the same time.

Usually, the situation is defined as a combination of all the things that are happening and all the conditions that exists at a particular place.

The situation is the one making the individual to get adapted. The situation comprises itself the traits of the environment (physical and social) and the entourage (social factors important to the individual – family, friends, school, job). The report with the situation is marked by the personality structure such as age, gender, temperamental and character traits, philosophy of life, beliefs, life experience, praxiological structured cognition, all of these expressed through many attitudes, aspirations, motifs and behavioral capacities.

*3.1. Competition and need of performance*

Sport, by definition, is an agonist activity, of fight, of contest.

The athlete lives situations characterizing this activity: coaching, contests, recovery, rest – all over his career, *since childhood to grown up,* in different environments and always changing. The experimental research puts two different subjects' groups in two different environments and studies their reactions. Sport may be considered an experiment on the means of getting over one individual's limits, but the research methodology is much more complex and ramified.

Trainings and contests are physically and psychically solicitant and by keeping the individual away of his family and "large" society it s also solicitant from the social pint of view. While on the peak of performance the athletes become the property of some managers, therefore a product to be sold.

*3.2 Rivalry is perceived as threatening*

The proper activity consists in different situations characterized by learning behaviors (routines, habits), as well as in *ad hoc* behavior for adaptation, because the contests present conditions and situations which are *uncertain and sometimes hostile and threatening* for the affective and self image balance. Sport will use *the adaptation energy,* described by H. Selye aiming to win. The uncertainty of the situations, including the superior value of the opponents is a source of anxiety and difficulties in decision making process. Even more, the opponents are perceived as threaten for the entire person of the athlete.

The typology of sport contests, involving successive stages to climb in the peak of the hierarchy such as trials, value requirements (criteria performances) to get the right to participate, the large temporal distance between the main competitions, all together are solicitant for the balance of the whole personality of the athlete.

3.3. *Incertitude and risk decision*

The specific of training solicitations, the requirements of selection and promotion in the peak of the hierarchy, the difficulty of the decisions made in situations of uncertainty (nature, unknown opponents, unpredictable phenomena

and situations), all of these are in front of the athlete motivated intrinsic and extrinsic to self-accomplish, sometimes willing to cross the line outside the proper behavior.

To take the risk is a free choice, responsible and aware. Sometimes the decision is caused by unconscious mechanisms of defending the ego (denial of reality, compensation, repress) acting simultaneously to diminish the pressure caused by fear, anguish, restlessness, including the exigencies of instincts and needs. In this case, the athlete risks with little concern for the possible adverse consequences.

*Conclusions*

The ANAD - Romania model is a hypothetical-deductive model of risk factors for the intention and use of prohibited substances and comprises three groups of elements, all very complex: athlete's personality, entourage and social conditions, sport specific activities. Last elements are *complex stimuli* which act simultaneously over the individual's personality. The action of these stimuli may be additive, with different t ponders. Some of them will act also in contrary direction, resulting in interface mechanisms, such as, for example, the conflict between the moral attitude of the family and the contrary influences of the group of friends, between the intention to cheat and being aware of the unpleasant followings (the well known approach and avoidance conflict, described by N. E. Miller.)

Sport activity takes a long time while the decision related to doping intention is made following a long period of evaluation of benefits and costs.
The area of decisions related to doping intention is limited in relation with many individual, social and situational variables. The low level of information, moral censorship and the dominance of some personality traits or characteristics below the limit of balance and self-control will lower the balance towards accepting ideas and even use prohibited substances. All of these contrary to the official regulations and the advice, recommendations, interdictions and sanctions explained by the ant-doping bodies. Subjectively, the athlete must take into consideration first of all *the moral blame* that is going to follow him for the rest of his life once he steps outside the principle of fair-play and then the sanctions that might end his sport life.

# CHAPTER 2 LITERATURE DATA

To the doping related literature presented by us when sustaining the Project, we would like to add the elements that support the hypothesis.

## Type A and B Behavior Theories. TABP (Type A Behavior Pattern)

In 1974, M.I. Friedman and R.N. Rosenman have published the paper work "Type Behavior and Your Heart", after they had established a wider incidence of the cardio-vascular diseases on patients with personality traits, named by the authors Type A. the subjects having a strong Type A personality may be characterized by:
1. *purpose orientation;* 2. *pressure and emergency feeling;* 3. *anger / hostility;* 4. *fear of failure,* to which Petroczi & Aidman (2008) also add: achievement orientation, self-belief, self-esteem, self-efficacy, trait anxiety, risk-taking / avesion, etc.

*Type A Behavior Pattern*

*Type A Behavior Pattern* is specific to that group of subjects, who share a well-structured behaviors' ensemble, which characterizes their way of understanding the daily life, a behavior that is marked particularly by the competition spirit, eagerness for social or professional success, hyperactivity, impatience, time compressing feeling and tension translated into the facial mimicry, which could be interpreted as hostility towards the others. Type B is opposed to Type A. (C. Levy-Leboyer, 1993).

*Type A and B Behavior Theory.* In their paper work "Type Behavior and Your Heart" (1974), M.I. Friedman and R.N. Rosenman have revealed that the Type A behavior is three times more predisposed to heart diseases than the other individuals, considered to have Type B behavior. The hypothesis of a specific traits model has appeared based on the observations made in relation with the patients' behavior in the waiting room. The ones who had suffered coronary accidents without being under the influence of the common risk factors (smoking, junk food, etc.) have had in common some behavioral traits grouped under the name of TABP (*Type A Behavior Pattern*). Subsequently, Glass (1977) has considered that the individuals with Type A behavior pattern are particularly responsive to stress sources threatening their control over the ambiance. Their reaction towards the stressing events increases the risk of a heart disease.

According to Rosenman (1978), quoted by C. Levy-Leboyer, the Type A individuals "engage themselves in a chronic fight for accomplishing the objectives that are generally inexhaustible, as quick as possible and despite any opponent individuals or situations." The behavior of Type A subjects with a

Type A personality is dominated by three factors: *competitiveness, impatience and aggressiveness.* The life style associated to this behavior builds up some defense specific mechanisms in front of what is perceived as an eventual obstacle or a stress factor. Thus, the researches conducted by P. Hassmen, R. Sthal and G. Borg reveals tha fact that the personality type is an influence factor in assessing the self-image and the perceived effort – the resistance to drugs and alcohol (B.D. Kirkcaldy, R.J. Shepard and R.G. Siefen)

The traits characterizing the subjects with a strong Type A personality are:

1. *Purpose orientation*: individuals tend to be very critical and exigent with respect to their own objectives, without resenting, as compensation, the pleasure of the efforts made or fulfilled. At the same time, they are characterized by a particular work commitment;
2. *Pressure and emergency feeling*: the individuals are permanently on time trial. Very often, they become impatient when the work rhythm is slowing or the agenda is changing. They are inclined to plan the works' final stages in a much to short time and try to accomplish multiple activities simultaneously;
3. *Anger / hostility*: Type A individuals tend to have anger or hostility feelings, which are not explicitly shown;
4. *Fear of failure*.

(acc. Baron, Russell & Arms, 1985; Carver & Glass, 1978; Chesney, Frautschi & Rosenman, 1985; Friedman & Rosenman, 1974; Jenkins, 1976)

In addition to the traits above, Suinn (1977) suggests another two factors that might contribute to Type A behavior pattern: *the stress* and the consolidation of some *previous success attitudes*, which might generalize and transform into behavioral archetypes that will be applied by the subject in domains that normally do not require a maximal resources' concentration, such as the recreative activities. Thus, the tension felt by the subjects with a strong Type A behavior is much bigger in comparison with other subjects in similar conditions.

The questionnaire - *Type A and Type B Behavior* (Walker - Brokaw, 1986) aims to characterize the subjects according to their affiliation to one of the scale: Extreme Type B; Type B; Both Type A and B; Type A; Extreme Type A.

The Eysenk-Wilson test *Tough-mindedness / Tender-mindedness* reveals the individual's affiliation to a class that is both attitudinal and behavioral, highlights some traits that we also find in Type A personality, among which the more significant are: aggressiveness, assertiveness, achievement orientation, manipulation, sensation seeking, dogmatism and masculinity.

*Common traits of the two opinions*

The traits studies have synthesized two main directions for the individual personality's characterization: by *traits and types.* Even if the Friedman and Rosenman's researches are in the cardiology field, the psychological factors of the *life style* characterize the Type A behavior. At the same time, H. Eysenck is

also a partisan of the traits' theory and the typology, judging that the different traits (personality sub-factors) highlight the behavior types.

The empiric researches of the latest decades have uses different questionnaires and tests in order to diagnose the personality traits, such as Cattell's 16 Personality Factors, M.M.P.I, California, Esenck's Extraversion-introversion and Eysenck & Wilson's Tough-mindedness / Tender-mindedness. For instance, von Knorring et al. (2007) have found big scores for sensation-seeking, impulsivity, thrill and adventure seeking on subjects (n= 96) who were drug abusers.

## The questionnaire Profile of Mood States (POMS)

The questionnaire *Profile of Mood States* (POMS) proposed by McNair et al. (1992) also includes scales with relevance for the personality and behavior traits that are studied. These scales are: 1. Tension/Anxiety; 2. Depression/ Dejection; 3. Anger/ Hostility; 4. Vigor/ Activity; 5. Fatigue/ Inertia; 6. Confusion/ Bewilderment.

The results of the Morgan's studies suggest that the positive psychic states are associated with high performances. The mental state of health is positively correlated with the athletic success. The main contribution is that he has proven the strong correlation between the positive emotional state and the level of athletic performance. Morgan named this positive condition as "*iceberg profile*" characterized by low scores for the factors *tension, depression, aggressiveness, vigor, fatigue, confusion* and high scores for the factor *vigor*.

The initial results achieved by Morgan have stood at the basis of numerous studies when the researchers have examined different categories of population. The existence of the "iceberg profile" has been noticed at the long distance runners (Morgan, O'Connor, Ellickson, Bradley,1988), the cyclists (Hagberg, Bahrke, Limburg, 1979), the rowers and wrestlers (Morgan, 1980), as well as to the athletes included in the Italy's national teams (Manili, Cei, Taddei, 1995). There are also studies that didn't highlight the existence of the profile proposed by Morgan. Daiss, LeUnies, Nation (1986) didn't find significant differences between the high level athletes (American football) and the low level athletes. Other studies have shown that the athletes have a positive state in the moments preceding the training, while after tough training sessions or when over-training, the level is much lower. (Ragli, Morgan, Luchsinger, 1990; Morgan, Costill, Flynn, 1988).

Tanya Berry and Bruce Howe (1995) have conducted a study aiming to asses how the POMS profile of an athletes' group will change when the test is conducted on multiple occasions and different situations. The chosen subjects were Australian rugby players, to whom it has been applied the POMS questionnaire during four sessions over four consecutive weeks. The study has revealed the fact that this type of questionnaire is not suitable for assessing some stable traits of the personality, but it could be useful to detect the changes that appear in the affective, emotional register of the athletes during different

training stages. These changes can be a sign for the coaches that there is a need to intervene in order to prevent the performances' decrease or they can indicate exhaustion, overtiredness. Such an approach is even closer to the initial purposes of the questionnaire.

The affective dispositions are dynamic and they can change rapidly, depending on a series of personal or situational variables. For this reason, some researches have been focused on investigating the relation between the personality's variables and the pre-competition affective states. (Prapavessis, Grove, 1994).

The differences between the emotional profiles of team players depending on the titular or reserve status of a player during a training period represented the subject of the research conducted by Beccarini, Cei and Manili (1994), on the Italian rugby team.

## The Self Consciousness Scale

The Self Consciousness Scale - Allan Fenigstein, Michael Scheier and Arnold Buss (1984).

Scales: Private Self-Consciousness; Public Self-Consciousness; Social Anxiety.

The test is based on the Jung's theory on introversion, completed by Mead about the public self consciousness. The Private Self-Consciousness refers to the individual's way of perceiving the internal events known by him only.

The Self-Consciousness is one of the main personality's dimension and the instructive-educative process aims, among other objectives, to its development. The term "consciousness" is one of the fundamental terms of psychology, a category of a maximal generality. The "consciousness" is not only aboput knowing something, but also about the way of knowing what the human being intends, follows or appreciates what he is doing, be reporting to himself, to others, to the ideal norms and values of the affiliation group and the society.

The Self-Consciousness represents one of the fundamental dimensions of the individual's intellectual and moral personality. Its building up is a long-lasting process, which begins with drawing the corporal scheme from the first childhood and ends during adolescence, when it includes not only the individual's self-reporting but also the reporting to others, not only in a particular moment, in an isolated situation but also in the social activity's dynamics. Obviously, the self-image is timely dynamic both as structure and depth, taking into account the successive passing of the years and the subsequent adequate growing up, as well as the multiple and different social influences.

It is considered that the self-image is very important in the athletic activity too, both for athletes and for coaches. The coach is advised to develop, first of all, the Self-Consciousness in order to get to know himself better, because it is the only way to help the athletes and he might want for himself to be more competent in all the aspects of his life. Margaret Mead (1934, 1963) analyzes thoroughly the relationship between the "self" and the environment. According to the author, an

individual's "self" is developing starting from the judgments expressed by others about him, within a context where this individual interacts with another one. The "self" is absent from the birth, but he develops all along the social activity and experience. In M. Mead's opinion, the groups to which the individual is affiliated shall serve as reference for the "self" building.

The social and cultural context may represent a series of very solid determinants, which alters the individual's identification, the definition of his distinctive traits and, through this, the "self" building. The affiliation to a genre, the existence of an ethnic group to which the individual report himself or some groups from which the individual tries to keep the distance, the appearance culture induce the possibility for some specific traits to be included in the "self" building. Thus, the second element for the "self's" integration, according to W. James is the social "self", the consideration received from his environment. "The human being has as many social "egos" as the number of individuals who could "know" him and make an opinion about him. But, as he is part of different groups, we may say that a human being has as many social "egos" as the number of distinct groups, whose opinion is of interest to him." (James, 1890/1946, p. 231).

The social anxiety is the unpleasant state felt by an individual in particular situations, a condition that, according to the relevant psychological studies, it is rarely investigated, diagnosed and treated, although it is one of the most predominant and invalidating mental disorders of childhood and adolescence. The social anxiety's effects can last for a lifetime. According to the conducted studies, the children and adolescents suffer acutely of the impossibility of integrating in social contexts, in school, at home or in any other type of relationships. The biggest danger is that, in latency, this situation will continue in adult life and turn the life's trajectory, from an ideal and quiet path to a very possible unpleasant one.

Although the researchers don't know the exact reason for the social anxiety's appearance or whether the daily stress and the tragic events' impact could have a significant role in its release, the people suffering from social phobia are usually considered to be predisposed to panic and hostility. Therefore, they become solitary and don't have friends. This disorder usually appears during childhood and develops during adolescence. It is seen mostly on women that on men, the ratio being even 2:1. For now, the causes are only supposed, but the scientist mention some cerebellum structures, which are responsible for controlling the fear and anxiety. Other conducted tests blame the heredity and the hormonal involvement for the disease's development. The sociologists describe the influence of the environment over the children and the process of their "shaping".

## Attitudes

The attitudes are structural components of the human personality, resulting mostly from the education and social influences.

The main characteristic is composed of the relatively constant and organized availability of the human psychic system to perceive and judge the reality and to react somehow to this.

Each individual is characterized by a complex of personal attitudes, with different structure and stability. These attitudes are strongly influenced by the unconscious mechanism for processing the data provided by the personal experiences lived through the needs and the tendencies

The needs and tendencies represent the personality's infrastructure, while the attitudes represent its structure (R. Binois, 1946).

Due to these reasons, we shall include into the attitudes' system, the motivation too, whose triple bio-psycho-social determination brings it closer to the human's fundamental attitudes, as it is a system of "internal motives of the behavior, either native or acquired, conscious or unconscious, simple biological tendencies or abstract ideals" (A. Roşca, 1943).

## Researches on different anti-doping themes

The Type A personality inventory developed by Friedman and Rosenman in 1974 is based on 4 behavioral trends: extreme competitivity, unbalanced life style (particularly associated with serious work involvement), strong hostility and anger feelings, as well as the extreme need of impatience and of doing everything under the time pressure.

There are a big number of researches developed based on this typology. For pointing out Type A Behavior Pattern, Jenkins Activity Survey has been used. As a result of these researches, it has been revealed a strong correlation between Type A Behavior Pattern and ambition. Therefore, in the research "Disentangling Type A Behavior: The Roles of Ambition, Insensitivity and Anxiety"(1983), Robert O. Hansson, Robert Hogan, John A. Johnson and David Schroeder have done some association between type pattern and driving, using in parallel scales from California Psychological Inventory.

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In "The relationship between physical activity and self-image and problem behavior among adolescents" (2002), B.D. Kirkcaldy, RJ Shepard, RG Siefen show on 1000 adolescents questioned that the practice of physical endurance exercises is associated with a favorable self image as well as with a type pattern resistant to drugs and alcohol addiction. In general, participants to sports activities are associated with lower anxiety-depression as well as with

social behaviors less inhibited. But this research does not take into account the use of performance enhancement substances; it concerns just drug and tobacco addiction.

There are some researches developed on young people, adolescents or children. In the work "Sport for all but is it suitable for children?"(l994), research coordinator Paul Melia observes that motivation for androgenous anabolic steroids use is not just sportive performance enhancement but improvement of body aspect as well. Although the number of prohibited substances users is small, the level of use is higher after 14 years, 59,7% of users being men. In this study, a very concerning fact is that 29,4% use AAS injected and 1/3 share the needles with other users. This study revealed that prohibited substances use, especially the use of anabolic steroids occurs on athletes of all ages. In spite of the fact that there are many factors that determines PED use, the most important is the belief that these substances are correlated with performance. Following this demarche, there has been initiated an information campaign entitled "Spirit of Sport". But this research is just about young athletes, not involving high performance athletes.

In "Physical Education Student's Attitude Towards Doping" (2005), Lukasz Krzych states that older athletes are more aware of doping than the younger one, but this is just the opinion of the students from Physical Education Academy of Katowice.

In "Cheating and doping in sport: an analysis of relevant psychological variables" (2004), Kate Kirby, Aidan Moran, Suzanne Guerin and Tadhg MacIntyre have reached to the conclusion that Irish athletes present a sophisticated way of understanding "cheating", perceiving it as a quantum of behaviors from "smart play" to doping. This is influenced by numerous contextual, social and psychological factors: orientation towards purpose, theme and one's own person, motivational climate, low moral reasoning, high level of aggression, low levels of sportpersonship, type of sport, rules nature, coach and mates' influence. But this study is developed only on 42 subjects and a pilot-study on a focus-group of 4 persons, being impossible to be extended to an edificatory transversal study.

In the works presented on "Conference on Ethics and Social Science Research in Anti-Doping", Cyprus (2006) the actual issues of prohibited substances use, their side effects as well as the amplitude of their use on body-builders are debated more. In the study "Words of deviants: case of cycling 1990-2003", Christophe Brissonneau reaches to the conclusion that as long as the practice of using vitamins on children who exercise does exist, we should not be amazed by the fact that they will take later prohibited substances for enhancing performance. This longitudinal study is edificatory but it involves cyclists only.

In the research "Lo sport e la salute: indagine conoscitiva sulle abitudini e Ie tendenze giovanili", C. Gambelunghe, P. Melai, R. Conti, R Paradisi and R. Rossi state in the conclusions that doping phenomenon is not perceived negatively; it is seen only as a way of improving body aspect. Sportive output,

health and psychological comfort also appear as motivation, but on a secondary plan. This work shows the evident gapes subjects present regarding doping, but they are not elite athletes, they just practice physical exercises on gyms.

There is a series of works based on the Theory of Planned Behavior. One person's behavior is determined by its attitude towards this behavior. A study of that kind is "Performance Enhancement Drugs (PED): Knowledge, Attitude And Intended Behavior Among Community Coaches In Hong Kong" developed by Lena Fung and Yvonne Yuan, which use as subjects athletes and coaches as well. According to their results, coaches relatively support anti-doping actions and as they are more informed about PED and doping control, they become more aware of the fact that doping is an issue much more complicated than they used to know from previous sources. The limit of this study is that it is not sensible enough so that it could capture opinions about doping issues on elite athletes.

The work "Good sport - On and Off the Field" (2005), intends to identify the accepted and unaccepted behaviors in sports. Authors' conclusion is that those behaviors which are accepted in every day life are accepted in sport too. The limit of this study is the use of qualitative methods only, statistic estimations not being its purpose. Instead, qualitative research aims to identify issues and perceptions and explore the widest possible range of views and opinions.

In researches about doping in sport the models based on Ajzens' Theory of Planned Behavior and Bandura's Self-Efficacy Theory (Wiefferink et al, 2005, 2006), where background variables are a) knowledge, personal goals, sport modality, demographic characteristics; b) the system of attitudes, social influence, and self-efficacy are notable. These variables will lead one way or another together or independently to Intentional Behavior. Intentional Behavior may be obstructed (we consider both moral censorship and the fear of sanctions as main obstacles). Finally, we shall evaluate the manifest, opened behavior.

Recent researches in psychology-sociology domain explore behaviors taking into account certain situations. In this type of researches are included also the ones regarding the individuals with Type A personality. These studies reveal other traits than the initial ones, which are characteristic for Type A personality individual as well as how they influence their behaviors and attitudes in certain situation (while driving, in violent confrontations etc.)

In anti-doping domain, most social researches are conducted by universities on athletes subjects who attend the classes of these institutions. These studies present the attitudes, side effects, distribution and proportions of prohibited substances use. The studies are also interested in doping behaviors but these researches are conducted as micro-researches and they are based on case studies. Their results can not be extended on entire society.

In the study "Justifications for Unethical Behavior in Sport: The Role of the Coach" (2004), Ann Dodge and Brenda Robertson approach as central theme the role of the coach as motivation source for athlete to assume different behaviors against ethics, as well as promoter of his ethical practices. The study

also offers valuable information on the differences between sexes within immoral behavior acceptance.

Each 4 years, Netherlands Centre for Doping Affairs conducts researches on Dutch elite athletes, in order to evaluate the existence of anti-doping policies and to increase the information and knowledge in anti-doping domain. Since 2002, the extended their domain being now interested also in psychological and sociological determiners of prohibited substances use.

There are some studies and study projects that have as main purpose the identification of the traits, which describe doping phenomenon from ontological, sociological, psychological, medical, legal and ethical point of view. These researches reveal doping practices and behaviors on relevant countries, which are necessary for the elaboration of educational strategies of national anti-doping organizations.

There are also studies initiated by Irish Sports Council and WADA, which attempt to elaborate a scale of attitudes and doping behaviors.

Some studies intend to discover social factors that are involved in these types of behaviors. The common element of these researches is the pressure exercised by coaches, training mates, owner of sports gyms, mass-media and public.

# CHAPTER 3. HYPOTHESIS

## Research Hypothesis

In our research's domain, we have developed the hypothesis that *some features of the athlete's personality structure and the social environment could represent, in certain conditions, risk factors for some athletes' doping behavior.*

The research's hypothesis has a deductive character and results from three theories:

1. The Type and Traits theories, namely a) Type A Behavior Pattern (Friedman & Rosenman; Walker & Brokaw) which considers the features as risk factors for the cardio-vascular diseases, suggesting a possible analogy with the risk of using prohibited substances in sport., and b) traits model of Eysenck & Wilson (Tough-mindednes v. Tender-mindedness), traits similar to theat of Type a Behavior;
2. The Psychological Theory of the action/determination of the behavior according to how the personality structure reacts to situations;
3. The Psycho-sociological Theory of building attitudes under the influence of the entourage.

Within the NADA-Romania model, there are particularly discussed the personality features (types and attitudes) and their determination according to the social environment. The psychological literature has debated the issue of the traits and state characteristics of personality. In our study, we have used tests for determining the Type A behavior and the Eysenck's typology - tough-mindedness/tender-mindedness. Form these tests' description it can be easily noticed the fact that the tests' items are reporting to what the psychology classifies as features.

The Type A personality and the tough-mindedness dimension's characteristics can be presumed to encourage attitudes towards the use of prohibited substances by the athletes. These characteristics are completed by other personality characteristics (attitudes, motivation, beliefs) and by the social factors' influence (entourage: colleagues, coaches, parents, media), together with the specific determinants of the sport activity.

We knew that athletes' doping behavior is determined by individual and social factors. Our projects starts from the premise that athlete's personality structure, especially the one of Type A Behavior Pattern, together with social environment factors are determiners of the behavior with risk for prohibited substances use. Therefore, the main hypothesis of this research is that there are certain social factors that encourage this behavior and that subjects with stronger Type A Behavior Pattern are predisposed to doping behavior.

In our research, one of our aims was to answer to the following secondary or alternative hypotheses too.

1. Which are the characteristic features of Type A Behavior Pattern of the athletes who compete in individual or collective sports that may lead to doping

behavior (aggressiveness, high level of competitiveness, ambitions and excessive workout, objective of achieving goals and recognition, impatient behavior, risk-taking, fear of negative evaluation) ?

2. How do social factors that request "performance by any mean" act on personality features (coaches, managers, mass-media, fans)? How does the pressure of environmental factors act on attitudes towards doping?

3. How much are these practices seen as deviant/acceptable phenomenon?

4. Theoretical and methodological substantiation of research hypothesis feasibility.

Based on the hypothesis presumptions' confirmation, the NADA – Romania will be able to improve its programs, including to increase the number of its own employees engaged in the anti-doping fight.

# CHAPTER 4. METHODOLOGY

## 4.1. The research's character and instruments

*Research's character*

The research is a psychological and sociological nature, having an ascertaining character (survey - case study), for reviewing the state hypothesis.

Our research represents the first social-humanistic approach in Romania as understanding doping phenomenon is very important from the perspective that may be offered by it regarding the particularities of sports environment in Romania, athletes' motivations for doping behavior and perception of doping as a performance enhancement practice. For this reason, we used well defined concepts on psycho-social researches, such as type of personality, motivation and attitude. The novelty of this demarche is represented by the use of these variables in the research of doping phenomenon in a manner that allows studying the way these factors interact, the way they may influence each other or may act concomitantly determining some pro-doping or anti-doping attitudes and behaviors.

Studying prohibited substances use as a deviance phenomenon leads to the approach of research perspective from the social actor point of view, for whom the deviant act is the result of a decision. While taking this decision, the author had thought more or less about the advantages and the inconvenient involved by the options he had.

The studies of personality, which refers to the way people are different, are based on two types of concepts. On the one hand they are interested in describing many ways some people are different from others. These studies are described in a big number of theoretical concepts but all of them are interested by traits, types, motives, values, temperament, schemas and beliefs. On the other hand, they are interested in developing ways of quantitative measurement of these individual differences. By these ways distinct individual qualities, thoughts, feelings and motivations were determined.

The research found out the extent in which attitudes of doping rejection or acceptance develops on athletes under the influences of requests and pressures specific to performance sport, of proximity environment (coaches, teammates etc.) or under the influence of "ambivalent ethic or moral sport culture" which contains expressions as "if other people do the same thing", "the most important is not to be caught".

We consider that from methodological point of view, our project may be placed between the paradigms elaborated by the researchers in domain, paradigms where structures and different social, psychological, individual, environmental variables, as well as incitation and obstacles are correlated.

The research is based on combined use of two distinct methodologies: a qualitative and a quantitative one. The instruments are the ones of focus-groups, in-depth interview and applied questionnaire. The necessity of using interviews

as well as questionnaires is given by the lack of clear data on prohibited substances use in Romania, which are necessary for gathering detailed information in order to develop users and risk-exposed population profiles.

*Operational Objectives*

1. Theoretical and methodological substantiation of the research hypothesis's feasibility;
2. Analysis and conceptualization of the personality structure's components and the athletes' environmental characteristics, in order to establish the investigation tools;
3. Elaboration of the empiric research's methodological design: tasks, stages, collection, data procession and interpretation, evaluation of the results' significance, drawing up of the stages' reports and the final report, drawing up the suggestions for the decisional factors (WADA, the Monitoring Group of the Anti-Doping Convention of Council of Europe, NADA, public authorities, governmental and non-governmental organizations, etc.);
4. Establishing the main pool and the secondary ones (groups of athletes and coaches), who will include the research's subjects; approximately 2000 subjects selected according to the following criteria: sport type (international, national, individual / team sport), age, level of performance, geographical area, and achieved results).
5. Establishing the correlation scale between the personality factors and the social ones identified within the research, and the risk attitudes of doping behavior.

Our research had the following objectives:

1. To examine the role of social factors (coaches, parents, friends, mass-media etc.) on stimulation or inhibition of athletes use of prohibited substances;
2. To analyze the subjective rationality of the social actor, the way group values and membership, educational level, the way actual situation is perceived or psychological balance may determine athletes to adopt doping behaviors.
3. To contribute to the increasing of the knowledge of doping behavior causes and noxious effects;
4. To establish whether in Romania prohibited substances use is seen as a serious violation of the norms, which should be sanctioned compulsory because it is a way to avoid the obstacles and a fast way to reach the aims;
5. To contribute to pedagogical and ethical base of the relevant phenomenon prevention means.

The originality of our research is represented by the integration on a commune perspective of some psychological approaches in interdependence with social factors, of group factors, of the way sports environment pressure acts. All this in an attempt of approaching doping behavior phenomenon's complexity from a multi-dimensional perspective.

## 4.2. Subjects

*Sampling*

The sampling was a simple random multi-strata cluster type pattern with random circulation. Each member of the studied population is affiliated to a group or cluster than the clusters were selected randomly and all the members of the selected cluster were included in the pattern.

The sociological research was performed on a pattern representative for the sport population in Romania. The pattern was different pending on the applied questionnaires. A pattern consisting in a number of almost 1000 people is representative for any type of groups in most cases, reported to the whole population of Romania. It is even more representative in relation with the sport population because 130151 athletes are registered in Romania and approximately 2000 of them are in the category of elite athletes.

*Subjects data*

The athletes subject to the study were aged 14 years – 30 years. (Diagram no.3). Approximately 75% of the investigated subjects are aged 16 years to 21 years, namely the age when an athlete begins to have good results. The average age of the group is 19.75 years, which is greater than the median (19), and the most frequent age within the pattern is 17 years.

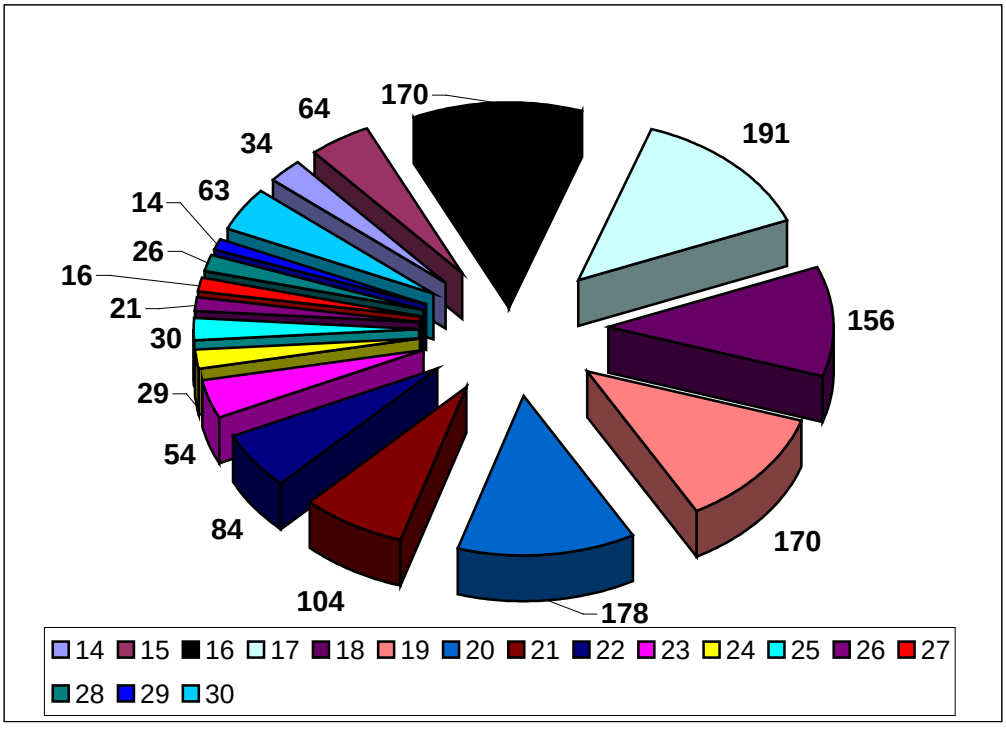



**Diagram no. 3 – The distribution of the athletes based on their age**

From the point of view of group's homogeneity, we may say that the pattern consists in a homogenous group with a little asymmetric distribution, a data distribution left oriented and leptokurtic. (Table no.3)

| Descriptives | Statistic | Std. Error |
|---|---|---|
| Mean | 19.75 | .103 |
| Median | 19.00 | |
| Variance | 14.786 | |
| Std. Deviation | 3.845 | |
| Minimum | 14 | |
| Maximum | 30 | |
| Range | 16 | |
| Skewness | 1.098 | .065 |
| Kurtosis | .767 | .131 |

**Table no. 3 – The values of static indexes for the athletes' age**

56.2% of the subjects are senior, 43.8% practice sport as juniors. (Diagram no.4)

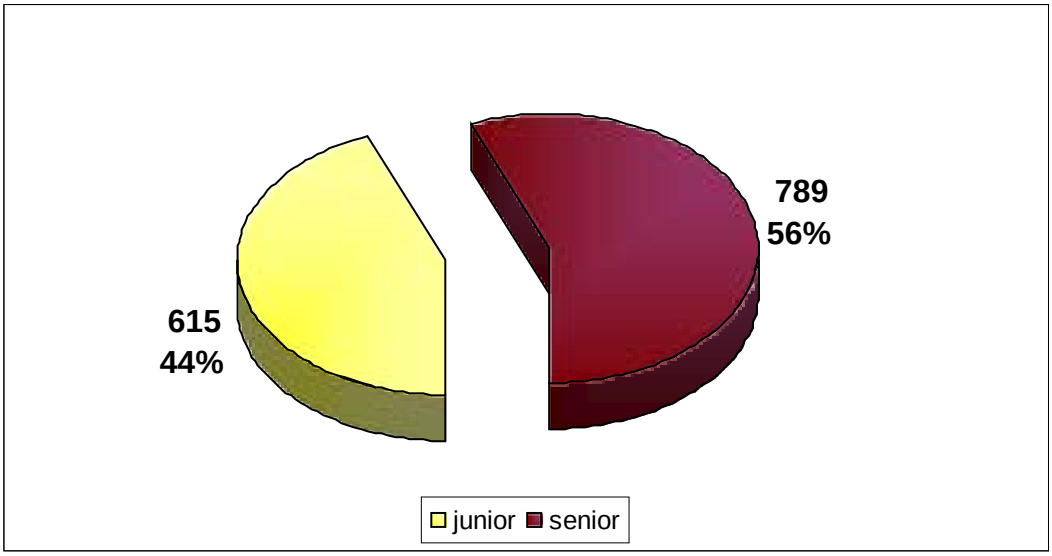



**Diagram no. 4 – Distribution of subjects based on sport categories**

The questionnaires were applied during training or following courses. 3000 sets of questionnaires for athletes have been printed, as a brochure. They were distributed to many county sport directorates (Alba, Arad, Argeş, Braşov, Buzău, Caraş Severin, Constanța, Covasna, Dâmbovița, Dolj, Giurgiu, Harghita, Olt, Satu Mare, Sibiu) and Universities in the country (Iaşi, Braşov, Timişoara, Bacău, Cluj Napoca, Constanța, Craiova, Oradea, Piteşti, Sibiu). Each institution designated one or more persons to apply the set of tests as investigation operators. They were trained by the experts within the Testing and Social-Educational Programs Department. All investigation operators received a set of instructions for themselves as well as a set of instructions for the subjects. The counties were the athletes live are shown in the diagram no. 5.

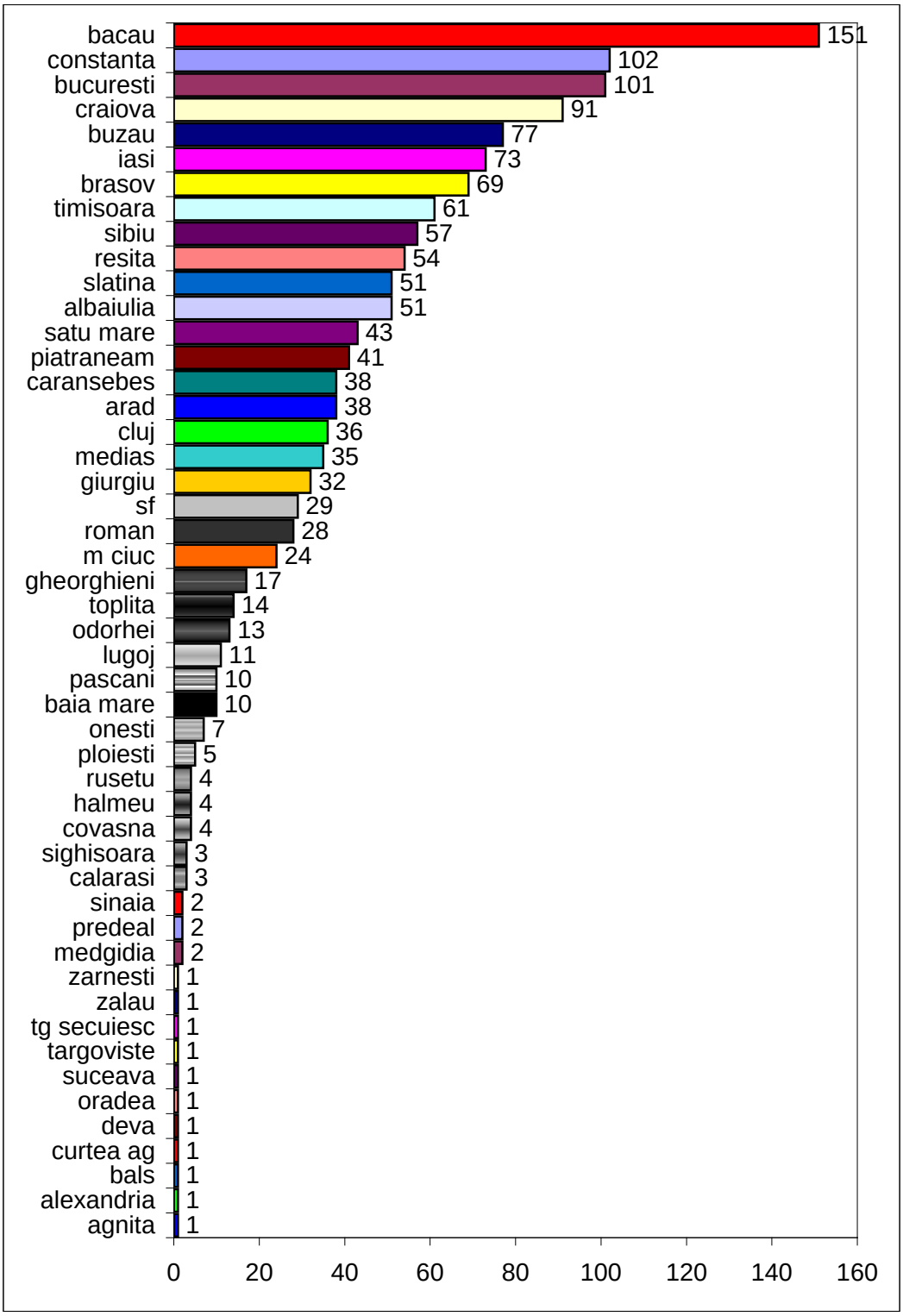



**Diagram no. 5 – Distribution of the subjects based on the towns they live in**

The athletes – subjects are practicing many sport disciplines (Diagram no. 6).

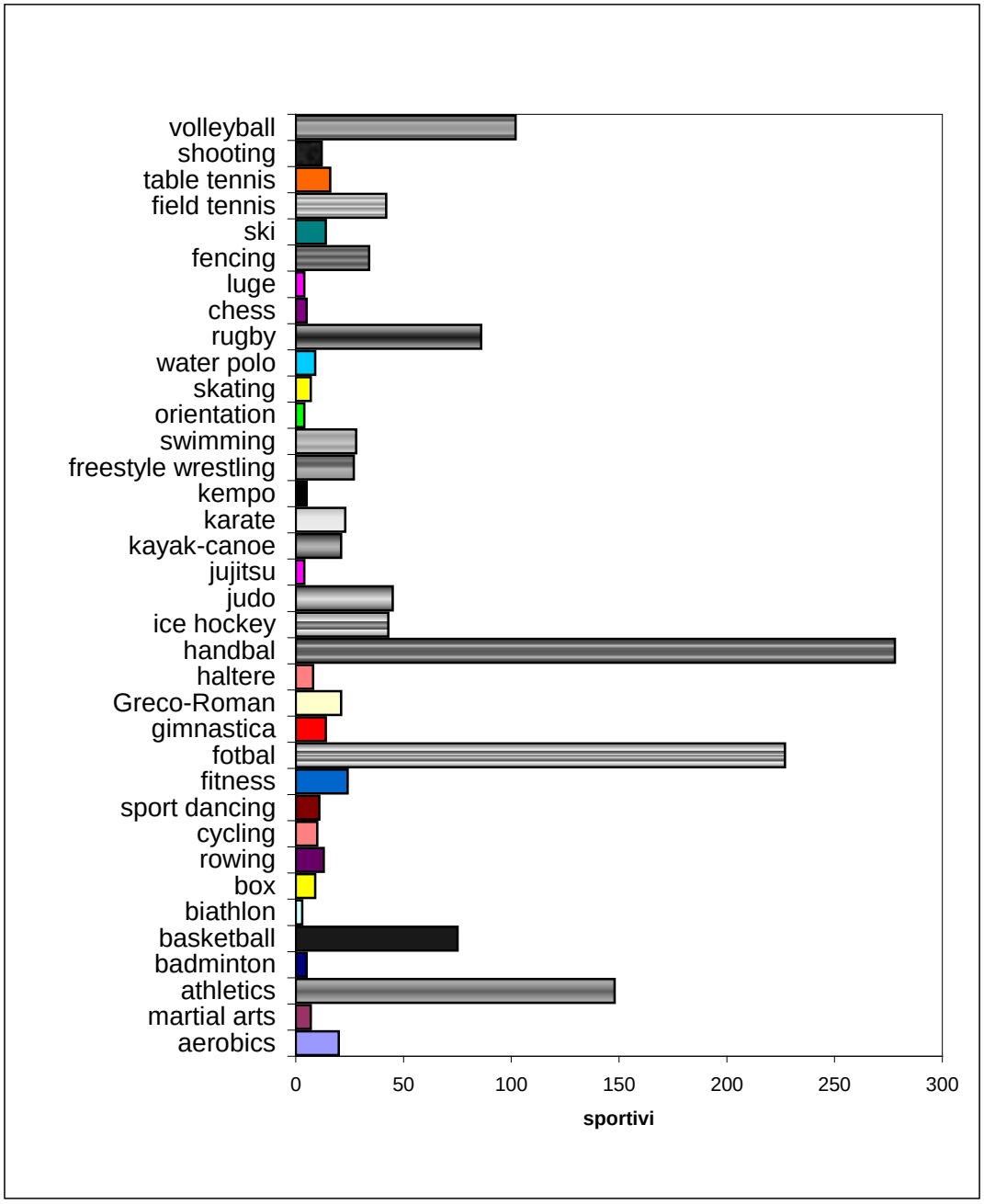



**Diagram no. 6 – Distribution of subjects based on the sport they practice**

The athletes subjects to the study have been practicing sport for an average of 8.83 years (Diagram no. 7). Most of them are athletes practicing sport for 8 years, the ones in this category being the mean of the pattern in the same time.

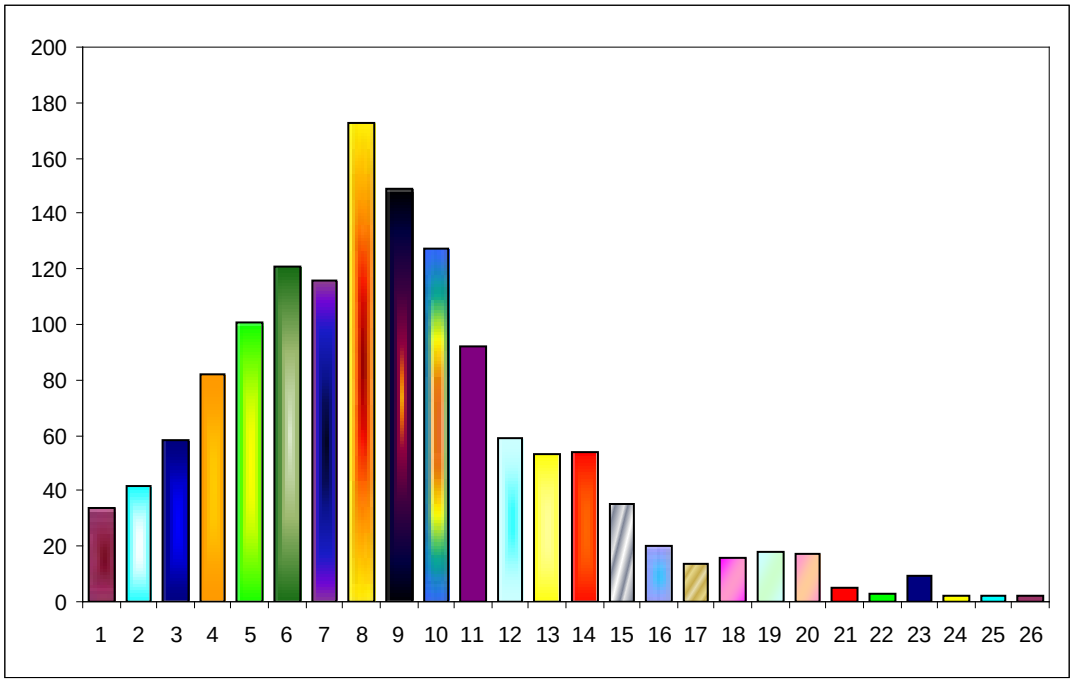



**Diagram no. 7 – Distribution of subjects based on the period of sport practice**

From the point of view of group's homogeneity, we may say that the pattern consists in a homogenous group with a little asymmetric distribution, a data distribution left oriented and leptokurtic. (Table no.4)

| Descriptives | Statistic | Std. Error |
|---|---|---|
| Mean | 8.83 | .119 |
| Median | 8.00 | |
| Variance | 19.757 | |
| Std. Deviation | 4.445 | |
| Minimum | 1 | |
| Maximum | 26 | |
| Range | 25 | |
| Skewness | .809 | .065 |
| Kurtosis | .914 | .131 |

**Table no. 4 – The values of statistic indexes for the period of sport practice**

Most of the investigated subjects did not have significant results (48.8%) (Diagram no. 8). Most of the athletes with good results are the ones who won the title of National Champion (20.7%), while the ones with good results in the international competitions (Olympic Games, World Championships, European Championships, Balcanic Championships) are 6.8% of the investigated athletes.

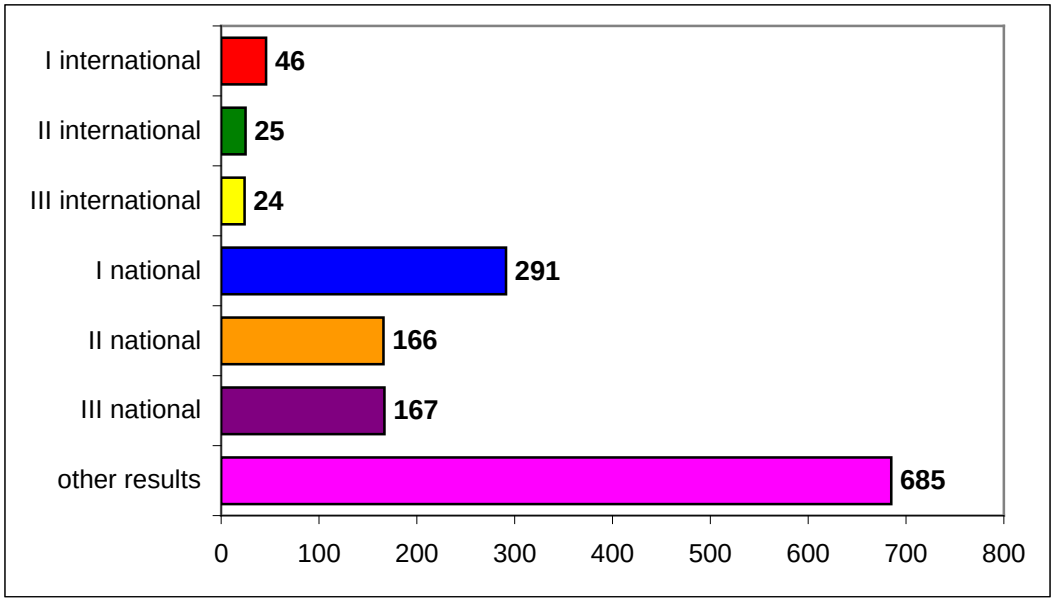



**Diagram no. 8 – Distribution of subjects based on the results they obtained**

As for the education level, 738 subjects are high-school students, 413 are students and 63 are secondary school students. The rest of 190 athletes are employees and graduated. (Diagram no. 9).

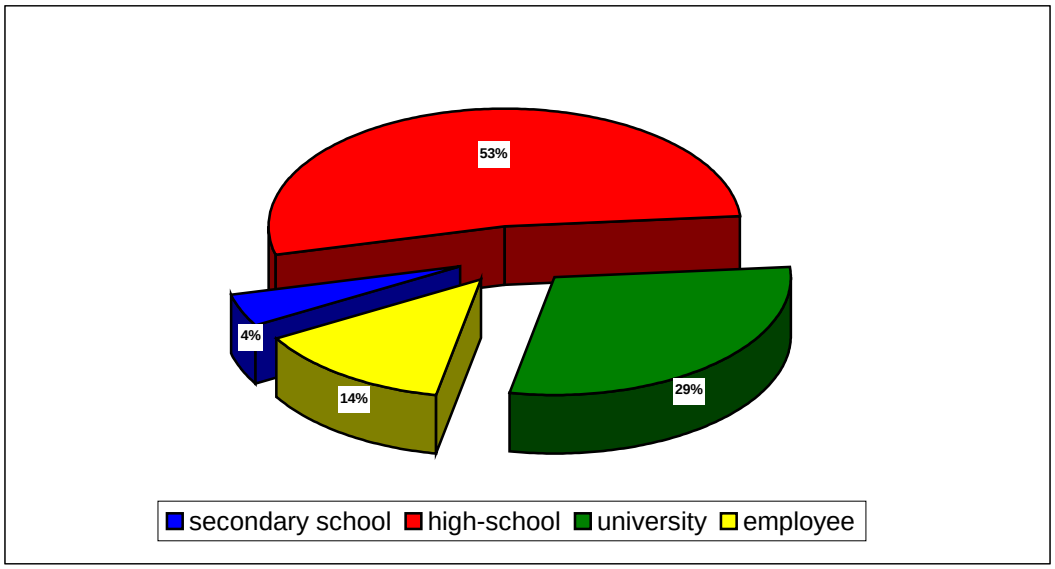



**Diagram no. 9. – Distribution of subjects based on the education level**

The questionnaire with 22 items for coaches was applied to 497 subjects. The sample was randomized; there was no an unique criterion used to establish it. Analyzing the answers, we observe that the majority of coaches have their best results in national competition for seniors and juniors. (Diagram no.10)

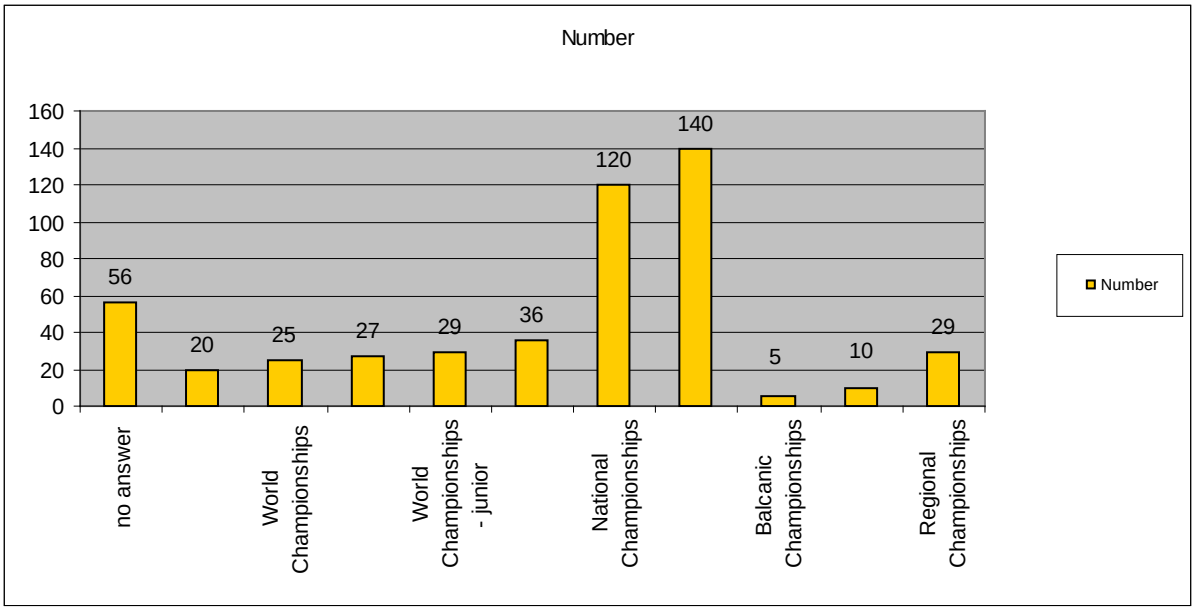
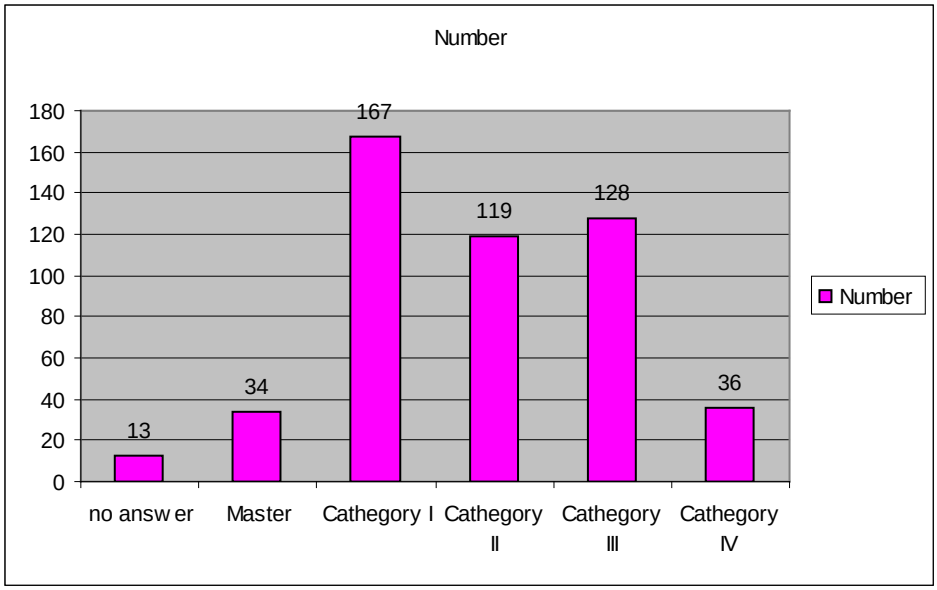


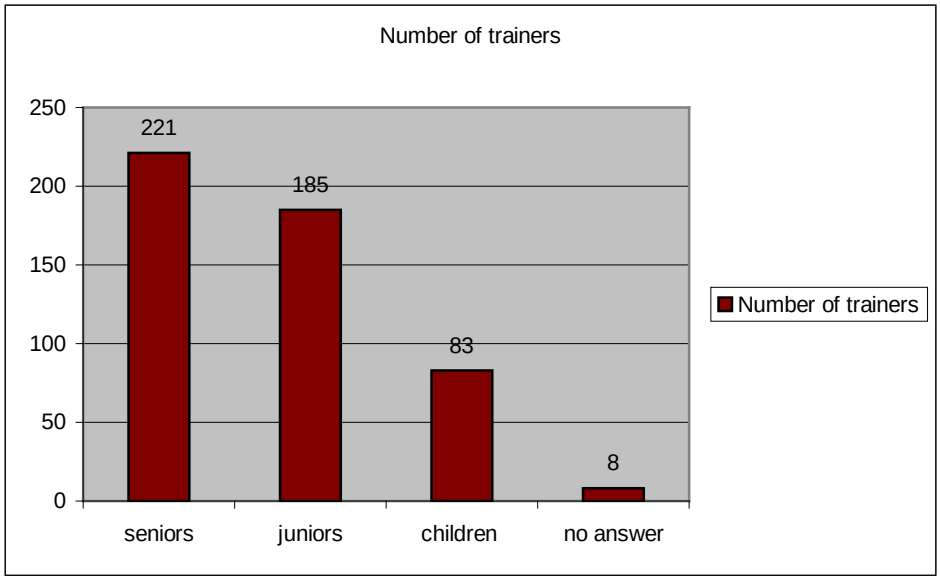

**Diagram no.10. Types of competions in which it was obtained the best results**

In the same time, the coaches have different qualification levels, so their general opinion is not linked to their professional training level. (Diagram no.11)




**Graph no.11. Categories of coaches' professional qualification**

In order to appreciate the relevance of their answers, we also analyze the performance level at which the coaches work. As we present in graph no.12, the majority (221 subjects) train the elite athletes (national and league teams) and their experience is about 14.29 years. From all the coaches, 21 had athletes which were detected positive at anti-doping tests.




**Graph no. 12. Athletes categories with who the coaches work**

## Research Design and Methods

Our project was centered on the (TABP) in relation with the social ambiance variables. We considered that Types A and B Behavior Pattern (TABP) contain some essential traits described by the researchers in this domain, traits that may characterize the athletes who are tempted to dope or to avoid doping behavior such as: the need of achievement, aggression, hostility, hard-driving, time urgency, speed, power, assertiveness, anxiety, sensation-seeking, risk-proneness etc.

The research aimed to find out the extent to which the attitudes of doping rejection or acceptance develops on athletes, under the influences of requests and pressures that are specific to the performance sport, of proximity environment (coaches, teammates etc.) or under the influence of " ethic or moral ambivalent sport culture", which contains expressions as "if other people do the same thing", "the most important is not to be caught".

We consider that from methodological point of view, our project may be placed within the paradigms elaborated by the researchers in the field, paradigms where structures and different social, psychological, individual, environmental variables, as well as incitation and obstacles are correlated.

The research was based on combined use of two distinct methodologies: a qualitative and a quantitative one. The instruments were the ones of focus-groups, in-depth interview and applied questionnaire. The necessity of using interviews as well as questionnaires was given by the lack of clear data on prohibited substances' use in Romania, which were necessary for gathering detailed information in order to develop users and risk-exposed population's profiles.

A significant number of subjects were submitted to integral survey by measuring personality traits and environmental factors. Inventories and questionnaires selected in the purpose of this project were applied.

## 4.3. Methods

*Questionnaires*

The choice of the instruments used in the research was done starting from the declared hypothesis, which we considered to be an alternative to the Freiedman and Rosemberg's hypothesis that the Type A behavior is a risk factor for the coronary diseases.

We considered that Types A and B Behavior Pattern (TABP) contain some essential traits described by the researchers in this domain, traits that may characterize the athletes temped to dope or to avoid such behavior such as: need of achievement, aggression-hostility, hard-driving, time urgency, speed, power, assertiveness, anxiety, sensation-seeking, risk-proneness etc.

A significant number of subjects were submitted to integral survey by measuring personality traits and environmental factors. It was applied inventories and questionnaires selected in the purpose of this project.

*Tools used in the research*

1. Type A and Type B Behavior Questionnaire by Thomas E. Mirabeal (1986) ( Walker - Brokaw - Type A and Type B Behavior ): Scales: Extreme Type B; Type B, Both Type A and B; Type A; Extreme Type A.
2. Tough-mindedness/Tender-mindedness Questionnaire by Eysenck-Wilson (1985)
3. Profile of Mood States (POMS) Questionnaire by McNair et al. (1992)
4. The scale of Self-Consciousness by Allan Fenigstein, Michael Scheier & Arnold Buss (1986), Questionnaire regarding *self-consciousness and social consciousness:* Scales: 1. Personal Self-Consciousness (CSP-A); 2. Public Self-Consciousness (CSP-B), Social anxiety (AS) and General Self-Consciousness (CSG), as a sum of the three scales.
5. The Questionnaire for athletes (signalectic data, attitudes)
6. The Questionnaire for coaches (signalectic data, attitudes)

*Tools' Description*

**1. Eysenck-Wilson Questionnaire (1985)** *Tough-mindedness / Tender-mindedness*

Scales: Aggressiveness/Peacefulness; Assertiveness/Submissiveness; Achievement orientation/ Unambitioness; Manipulation/Empathy;
Sensation-seeking / Unadventurosness; Dogmatism / Flexibility; Masculinity / Feminty.

*Scales' description*

*1. Aggressiveness / Peacefulness*

High scorers are given to the direct or indirect expression of aggression, for example through behaviors such as temper tantrums, fighting, violent argument and sarcasm. They take no nonsense from anyone and feel compelled to re-turn fire or 'get back' at anyone who transgresses against them. Low scorers are gentle, even-tempered, prefer to avoid personal conflict, and are not given to violence either physical or indirect. As with all the scales in this cluster, males score higher on average, and since the difference is real in the sense that it almost certainly is biologically based, it would be misleading to make a sex correction in the norms.

*2. Assertiveness / Submissiveness*

This is closely related to aggressiveness but is a slightly more civilized form. High scorers have what is sometimes called a 'strong personality'; they are independent, dominant, and stand up for their rights, perhaps to the extent of being viewed as 'pushy'. Low scorers are humble, timid, submissive, disinclined to take any initiatives in an interpersonal situation and may be easily imposed upon.

*3. Achievement orientation / Unambitioness*

High scorers are ambitious, hard-working, competitive, keen to improve their social standing and place a high value on productivity and creativity. Low scorers place little value on competitive performance or creative output. Many are also apathetic, retiring and aimless, but these are not invariable characteristics of the person without strong achievement motivation.

*4. Manipulation / Empathy*

High scorers are detached, calculated, shrewd, worldly, expedient and self-interested in their dealings with other people. Low scorers are warm-hearted, trusting, empathetic, straightforward and altruistic, perhaps also a little naive and gullible. This trait is sometimes called Machiavellianism because it corresponds to some extent with the political philosophy expounded by the Italian writer Niccolo Machiavelli (a sort of Renaissance Henry Kissinger).

*5. Sensation seeking / Unadventurosness*

High scorers are forever seeking thrills in life; they have an insatiable thirst for novel experiences and require regular 'jags' in order to stave off boredom. To this end they will accept a moderate level of danger to life and limb. Low scorers have little need for excitement or adventure; instead they prefer the secure and familiar comforts of 'home'. The association of this dare-devil 'Evel Knievel syndrome' with traditional masculinity is obvious.

*Risk-taking*

This is again fairly self-explanatory. High scorers like to live dangerously and seek rewards with little concern for the possible adverse consequences. Characteristically, they are gamblers who believe that 'an element of risk adds spice to life'. Low scores indicate a preference for familiarity, safety and security, even if this means sacrificing some degree of excitement in life. The risk-taking factor is quite closely related to 'impulsiveness'. It is also quite closely related to 'sensation-

seeking' which, it may surprise the reader to note, falls into the tough-mindedness group of factors. This illustrates one of the complications of personality classification mentioned, that a primary factor may fall diagonally between two major factors, just as the same item may contribute to two or more primary factors. The fact is that risk-taking and sensation-seeking may be used as measures of both extraversion and tough-mindedness; they fall almost midway between the two independent major factors. However, because risk-taking is a little closer to the extraversion axis and sensation-seeking a little closer to the tough-mindedness axis they have been classified accordingly. (acc. Eysenk & Wilson, 1985, p. 60; 110).

*6. Dogmatism / Flexibility*

High scorers have set, uncompromising views on most matters, and they are likely to defend them vigorously and vociferously. Low scorers are less rigid and less likely to see things in black and white; they are open to rational persuasion and very tolerant of uncertainty.

*7. Masculinity / Feminity*

People scoring high on this factor are unconcerned about crawling insects, the sight of blood and other gruesome spectacles; they are tolerant of— and probably enjoy—violence, obscenity and swearing; they are disinclined to show weakness or sentimentality of any kind, for example by crying or expressing love and rely on reason rather than intuition. Low scorers are easily upset by bugs, blood, brutality, etcetera, and have a high interest in delicate matters such as romance, children, fine arts, flowers and clothes. Obviously men score much higher on average than women, but there is also a great deal of variation within each sex. People whose scores resemble those typical of the opposite sex rather than their own are likely to have occupations atypical of their sex, but there is certainly no implication of homosexuality.

**2. Walker - Brokaw (1986) - *Type A and Type B Behavior***

Scales: Extreme Type B; Type B, Both Type A and B; Type A; Extreme Type A.

**3. McNair et al. (1992) - *Profile of Mood States (POMS)***

Scales: Tension/Anxiety; Depression/ Dejection; Anger/ Hostility; Vigor/ Activity; Fatigue/ Inertia; Confusion/ Bewilderment.

*Scales' description*

The affective dispositions' profile - POMS (Profile of Mood States), developed by McNair, Lorr and Droppleman (1971) was used for identifying and assessing the affective disposition. It comprises 65 items, which are 5 points ranked on a Likert scale.

The POMS test has psychometric characteristics revealed through specific studies (Smith et al., 1993).

Conceived by its authors for the evaluation the affective-emotional states' changes on persons with psychic disorders, during and after specific treatment

periods, its application was extended to other categories of persons too, among who there are also the athletes.

By applying POMS in the studies on athletes' personality and the relation between the affective-emotional states and the level of performance, there was reached a typical model of the mood state, specific to the elite level athletes. This model has been created by Morgan and his collaborators, following some researches on a large number of American elite athletes (1979, 1980, 1987, 1988).

**4. Self-Consciousness Scale**

The Self-Consciousness Scale - Allan Fenigstein, Michael Scheier şi Arnold Buss (1984):

Scales: *Private Self-Consciousness; Public Self-Consciousness; Social Anxiety.*

The test is based on the Jung's theory on introversion, completed by Mead with respect to the Public Self-Consciousness. The Private Consciousness refers to individual's way of perceiving the internal events known by him only; the Public Consciousness refers to individual's way of perceiving the other persons' reaction; the social anxiety is the unpleasant state felt by the individual in some particular situations.

*Scales' description*

Each scale has a dimension, given by a series of numbers (score), as follows: *Private Self-Consciousness* has maximum 40 points*; Public Self-Consciousness* has maximum 28 points; *Social Anxiety* has maximum 24 points. The average interval established by the test's authors is characteristic for the individuals who have a good balance on each of the three scales. The authors have also suggested a fourth scale, a general one.

For the interpretation of the subjects' answers, the scores of each of them are compared with the scales' amplitude and their average intervals.

The Self-Consciousness Scale was developed by Fenigstein et al. (1975) to measure two distinct dimensions of self-consciousness. The first sub-scale assesses private self-consciousness, defined as the extent to which test takers are aware of their own moods, attitudes, thoughts, and bodily states.

The second subscale measures public self-consciousness, or the extent to which people are aware of and concerned about themselves in social situations.

Like other well-constructed trait measures, test-retest correlations indicate that both of these self-conscious subscales have reasonably good reliability. In addition, normative data show an absence of gender differences. The validity of the test has been established by comparing the social behavior of people who score high and low, respectively, on each subscale. Many studies indicate that people who score high in private self-consciousness behave in ways that are more consistent with their inner traits, values, and attitudes (Fenigstein, 1987; Carver & Scheier, 1987). In addition, these high scorers are better able to predict how they will act in a variety of circumstances and are more acutely aware of their emotional reactions

to events (Scheier et al., 1978; Scheier & Carver, 1977). Not surprisingly, people who score high in public self-consciousness are more sensitive to what others think of them and conform more to social norms to avoid negative evaluations than do those who score low on this trait. People who score high on this subscale are also more concerned with their physical appearance than those who score low. (L.A., Hjele & D.J., Ziegler, 1992, p. 62-63)

**5. The Questionnaire for athletes and the Questionnaire for coaches**

The items of these two questionnaires are related to:

a) the subjects' knowledge on the types of prohibited substances and their effects;

b) the knowledge of the sanctions they may be imposed if they are caught using prohibited substances;

c) rejection or acceptance attitudes towards prohibited substances use;

d) the reasons for which the athlete may assume the risk of using prohibited substances;

e) proximity social environment (sport group, teammates) and mass-media factors that may influence subjects attitudes towards doping;

f) suggestions for athletes and their entourage education for rejecting doping;

g) self-references to prohibited substances use and its consequences.

If reported to our theoretical “model", the followings can be related: attitudes, information, decisions and entourage’s influence. We can presume that the questioned subjects have lived the sport related, as these are reflected in the answers to the underlined items.

*Research Ethics Safeguards*

In this research we were concerned about the rights of the athletes who were subjects in the survey (cf. Tuckman, 1978), namely:

- The right to intimacy or non-participation. The right was complied with by establishing a previous agreement of the subjects (or their parents in case of athletes aged under 18 years) regarding the participation to the research. Also, subjects were provided with the opportunity to withdraw at any time from the test participation;
- The right to remain anonymous. To respect this right, none of the research recorded the names of the subjects;
- The right to privacy. This was ensured by the confidentiality agreement signed by the researchers of the project team. The subjects were informed that only the researchers who have signed the above-mentioned agreement have access to the data that could lead to their identification.

The National Institute for Research in Sport evaluated the level of research ethical norms compliance based on a file consisting in:

- The description of the means of subjects’ selection;

- Notification of athletes regarding the research they were going to be subjects to: purpose, objectives, research methods, means to use the results obtained in research;
- The agreements to become subjects of the research (of the athletes, of the athletes' parents in case they are under 18years);

The agreements of collaboration with the institutions responsible with athletes' training (Romanian Olympic and Sports Committee, sport clubs).

The athletes subjects in the research are part of two categories:

- Athletes registered in different sport clubs;
- Students, peers practicing sport as leisure time.

The sport disciplines practiced were chosen with the purpose to have the pattern answering to the objectives of the research. The research methods were applied by the project team with National Sport Federations' agreement.

The athletes participated in research voluntarily. Each athlete was requested for a voluntary participation agreement and ensured he could withdraw from the research anytime.

## Proper research activities

The project was elaborated for two calendar years, 2007 and 2008. In those two years of the research, the following objectives have been accomplished:

1. preparation of research instruments (Jan. 2007)
2. elaboration of guides for interviews and questionnaires (Jan-Feb 2007)
3. selection of types of subjects and patterning (Feb. 2007)
4. implementation of pilot-study (Mar.-Apr. 2007)
5. correction and recalibration of work instruments (Apr. 2007)
6. implementation of the research on the athletes who tested positive (May – June 2007)
7. implementation of inventory sets and interviews with athletes (May 2007 – Sept. 2008)
8. data introduction (Aug. – Nov. 2008)
9. data processing (Sept. – Dec. 2008)
10. dissemination and evaluation of results (Sept. 2008 – Feb. 2009)
11. elaboration of research report (Jan. 2009 – Mar. 2009)

The accomplishment of research's objectives was possible as a result of developing the activity according to the steps and calendar intervals approved by WADA. Thus, the first step of the research, „preparation of research instruments", was developed in January 2007. Within this step, all the personality questionnaires have been translated into Romanian, also The questionnaire for the athletes and the questionnaire for coaches had been elaborated.

In the next step of the research, developed in February 2007 and named "elaboration of guides for interviews and questionnaires", it has been elaborated: the tests' application guidelines for the study operators, the guidelines for filling in the questionnaires by the subjects and the questionnaires for the mentioned tests have been multiplied. We mention that the clarity of these guidelines has been checked by asking the opinion of 10 possible study operators.

In the same February the pattern for pilot-study and the pattern for the proper study have been established. For pilot-study 120 athletes have been questioned, athletes from different sport disciplines.

The next step of the research, "Implementation of pilot-study" has been developed in March – April and consisted in applying the questionnaires in pilot step of the research. In this step of the research, 120 sets of questionnaires have been applied and 99 of them have been fully filled in. the 99 sets of questionnaires have been filled in by athletes practicing: track and field (4), basketball(1), bob(2), bodybuilding(1), sport dancing(1), football(3), ice-hokey(23), kayak-canoe(20), karate(6), swimming(6), pentathlon (1), rugby(26), fencing(1), acrobatic sport (1), field tennis(2) and volleyball(1). (Diagram no.13)

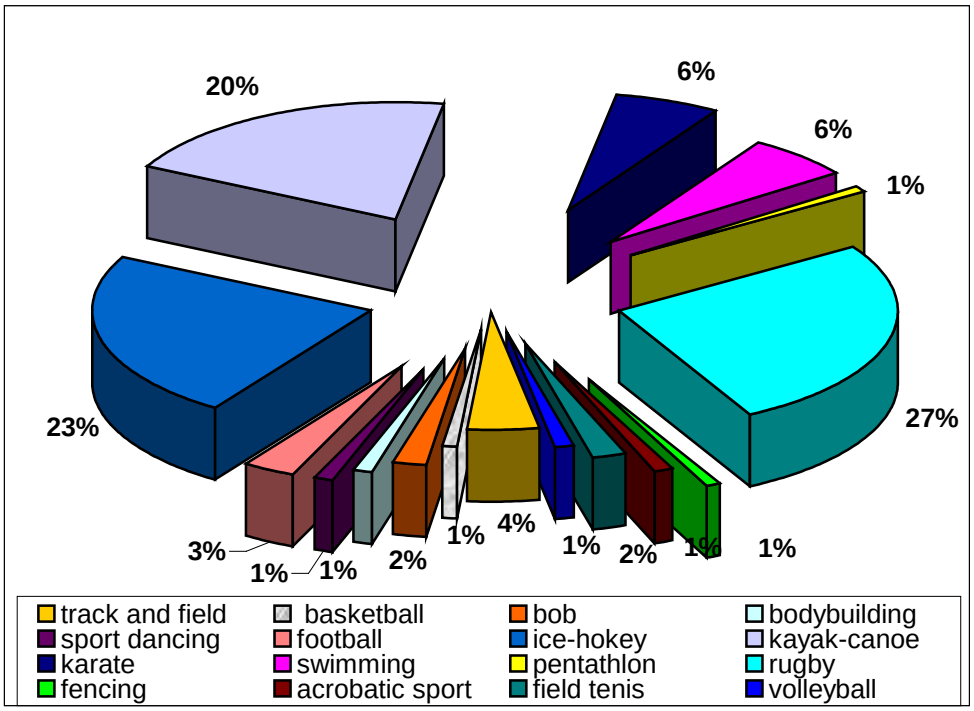



**Diagram no.13 – The sport disciplines practiced by the athletes within pilot-study**

The subjects questioned were between 13 and 33 years old. The questionnaires have been applied during training in Bucharest, Pitesti and Snagov. For the athletes in Bucharest, the study operators went to their training places, outside their training hours (NSC "Lia Manoliu", Skating rink "Mihai Flamaropol", National Academy for Physical Education and Sport).

Initially, the set of tests has been applied in two different steps. In the first step, AB questionnaire, POMS questionnaire and the questionnaire for athletes

have been applied, while in the second step, CS and P questionnaire have been applied. The disadvantage of this way of applying was that some subjects weren't available for the whole period, therefore 20 questionnaires remained filled in partially.

During pilot- study other aspects were signaled by the operators, aspects that could influence the good development of the proper study (translation of some items within tests, re-definition of the scale for answers' evaluation).

*Thus, we may state that the pilot-study step, completed at the end of April, was followed by the correction of athletes' testing instruments, as well as by the change of their application methodology, meaning that all the questionnaires have been applied in one single session.*

*Regarding the questionnaire for coaches, this one has been applied to 60 coaches. There were no changes done to this questionnaire.*

In **May – June**, the questionnaires have been applied, according to the initial planning, to nine athletes who were found positive on doping controls during January 2006 – June 2007. The athletes questioned were practicing the following sport disciplines: track and field (2), judo (1), karate kyokushin IKO2 (1), bodybuilding (1), taekwondo WTF (1), water polo (1), box (1), weightlifting. After finding these athletes positive, educational activities haven been planned and developed on the pools and clubs the relevant athletes were registered to.

The project management duties and activities between May 2007 – September 2008 have targeted mainly the followings:

- establishing the periodic sessions for analyzing the project development status;
- establishing contacts with the Counties Sport Directorates;
- establishing contacts with the representatives of physical education faculties in various university centers;
- establishing the traveling calendar in order to distribute the questionnaires;
- establishing the training sessions for survey's operators;
- maintaining permanent contact – by phone, email – with survey's operators in order to monitor the questionnaires' application process;
- collecting the applied questionnaires – by traveling in the respective locations (Arad, Timişoara, Craiova, Reşiţa, Târgovişte, Braşov, Sf. Gheorghe, Miercurea Ciuc, Sibiu, Cluj-Napoca, Satu Mare, Târgu Mureş, Bacău), or convening meetings in Bucharest with the relevant representatives.

Simultaneously, the set of tests has been applied to the other athletes. For this step, which began in May 2007 and it was developed until September 2008, 3000 sets of questionnaires for athletes have been printed, as a brochure. These were distributed to different county sports directorates (Arad, Arges, Alba, Brasov, Caras Severin, Constanta, Covasna, Dambovita, Dolj, Giurgiu, Harghita, Olt, Satu Mare, Sibiu) and to many universities within the country

(Iasi, Brasov, Timisoara, Bacau, Cluj Napoca, Constanta, Craiova, Oradea, Pitesti, Sibiu). (Annex no.1)

Each institution designated one or more persons to apply the set of tests as study operators. The persons were trained by the experts within Testing and Social – Educational Department of NADA. All study operators received a set of guidelines for themselves and a set of guidelines for the subjects.

A number of 2600 questionnaires have been distributed for athletes and 650 for coaches. By the end of the research, a number of 2300 brochures for athletes and 500 questionnaires for coaches have been returned to NADA. Another 60 questionnaires for coaches have been applied by the personnel of the Testing and Social-Educative Programs Department within NADA.

From August to October 2008, all the questionnaires were reviewed. There have been kept for research only the questionnaires fully completed, including the data for the demographic analysis (age, geographical environment, education level, performance level). All the personality questionnaires have been processed and the profiles for each subject have been determined. Then, all the information was introduced in the SPSS database. At the same time, the statistical processing of the data has been done in SPSS also and the project's partial reports have been drawn up, some of them being presented during national and international conferences.

The elaboration of the Final Report started in January 2009.

# CHAPTER 5. RESULTS AND DISCUSSIONS

## A. Athletes" Personality

This section shows the results of the tests and personality questionnaires, which looked after the personality features if type AB (**The test AB** Walker - Brokaw), Toughmindedness (The test Eysenck-Wilson), Mood states (The test POMS) and personal and social consciousness (The test Feningstein et al.). The investigated pool consisted in 1383 athletes.

### 1. The test AB. (Walker - Brokaw)

(Type A and Type B Behavior)

The scores of the test reveal: l - 47 - Extreme Type B; 48- 94 - Type B; 95-141 - Both Type A and Type B; 142-188 - Type A; 189-235 - Extreme Type A

Generally: a score greater than 20 is Type A; a score less than 120 is Type B

The analysis of the results reveals the following aspects. The scores obtained by the athletes on the test AB revealed an average of x=133.63 points, which places the athletes within the area of both type A and B of personality, preponderantly towards A. The same trend results from the highest frequency of Mo=133 and Mo=135 scores, as well as from the median of the group (Me=133), meaning the way the subjects behave in usual circumstances and the possible behavior under pressupre moments.

The table no. 5 shows the statistical indexes for the whole investigated population.

| THE TEST AB | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mean | Median | Mode | Variability | Std.deviation | Minimum | Maximum | Range | Skewness | Kurtosis |
| 133.63 | 133.00 | 133/135 | 13.36% | 17.86 | 62.00 | 208.00 | 146.00 | .359 | 1.235 |

**Table no. 5 – The values of the statistical indexes for the test AB**

Most of the subjects under 17 are under A and B typology or just A. 12 subjects are type B and eight extreme A. We may say the athletes are part of the two categories: type A or B and type A. (Diagram no. 14)

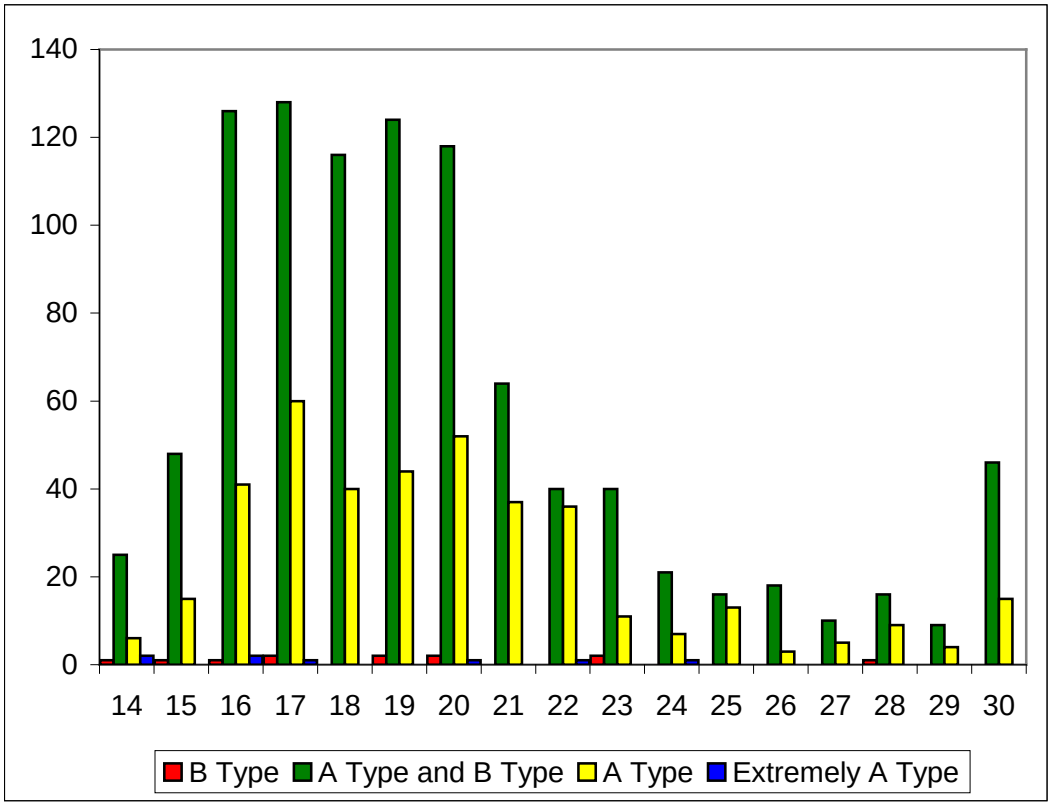



**Diagram no. 14 – A and B typology based on the subjects' age**

There are not noticeable differences between junior and senior athletes. It is noticed that most of the scores obtained in different sport disciplines reveal features of type A, the highest values being registered in weightlifting (x=145,37), rugby (x=141.19), kayak-canoe (x=140.85), biathlon (x=138.66), gymnastics (x=137.78), volleyball (x=137,22), while the lowest values were registered in jujitsu (x=118,25), cycling (x=118,10) and table tennis (x=116,75). (Diagram no. 15)

Calculation of correlation coefficients did not reveal significant values between the scores resulted in the type of personality AB and the results in competition or when sport was practiced, which enforces the idea that sport performance is determined by many factors. In the same time, there are not significant correlations with education level or the county of origin. Therefore, we may state that typology A or B does not depend on environment factors.

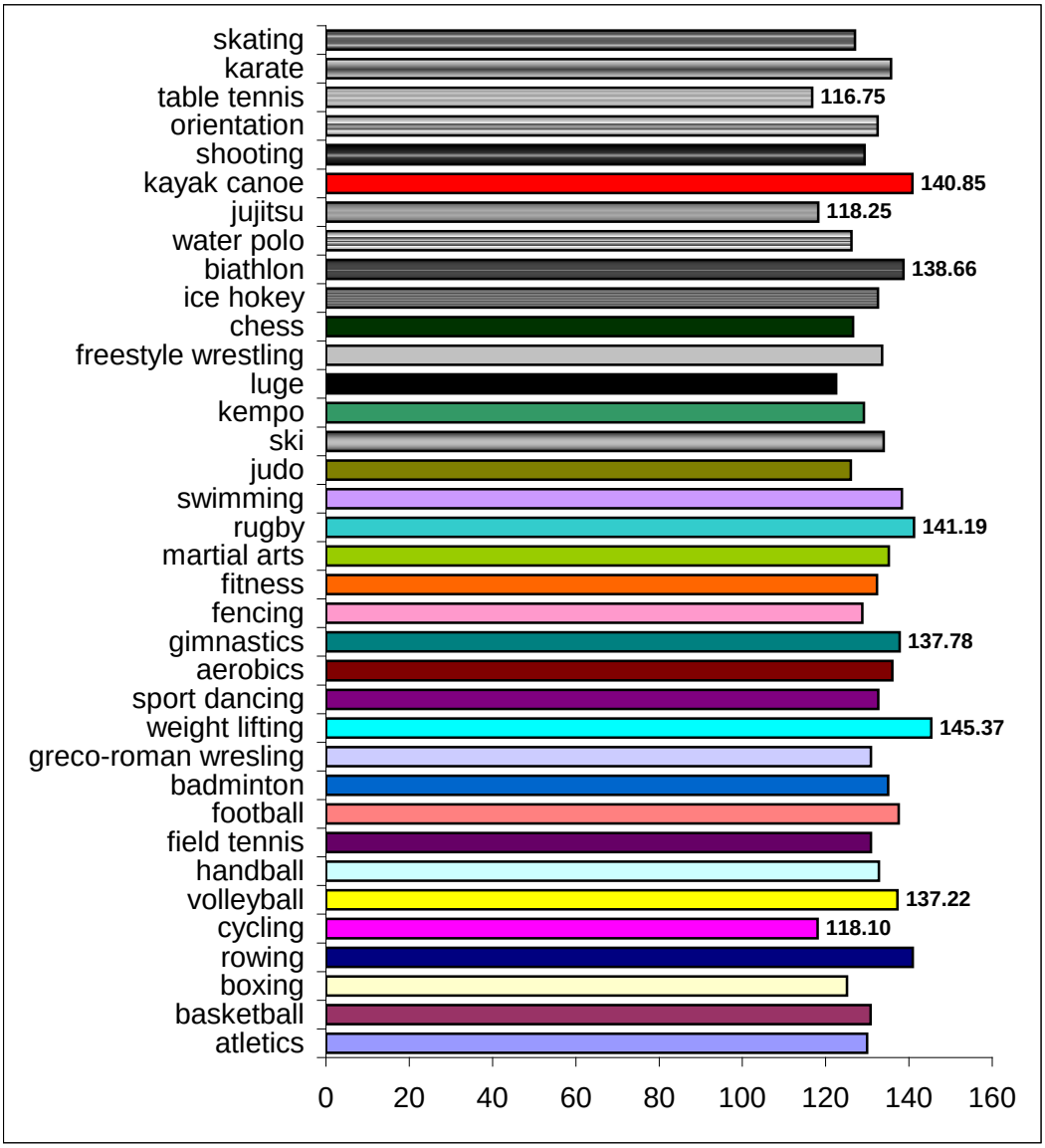



**Diagram no. 15 – The average scores in the test AB**

## 2. The test Eysenck-Wilson

(Toughmindedness/Tendermindedness)

The original test suggest the following average scores of the seven scales: Aggressiveness - 12,5; Assertiveness - 15,5; Achievement - orientation - 14,5; Manipulation - 12,5; Sensation - seeking - 15,5; Dogmatism - 14,5,; Masculinity - 11,5.

As for the personality features revealed by the questionnaire Eysenck - Wilson, it is noticed that values greater than the average occur on the group's level, which shows a certain feature as predominant.

In what the **aggressiveness** concerns, we say this is not high as long as the group's average on this scale was x=13.30, while the group's median value was Me=13. Even more, the most frequent value occurred among the investigated population was Mo=12, which is on the limit of Pacifist type (Peacefulness).

| | Aggressiveness | Assertively | Achivement Orientation | Manipulation | Sensation-seeking | Dogmatism | Masculinity |
|---|---|---|---|---|---|---|---|
| Mean | 13.30 | 18.06 | 17.6867 | 13.1237 | 13.4834 | 14.4602 | 13.8806 |
| Median | 13.00 | 18.00 | 18.0000 | 13.0000 | 14.0000 | 14.0000 | 14.0000 |
| Mode | 12 | 20 | 17 | 13 | 15 | 14 | 14 |
| Variability | 28.00% | 18.93% | 19.77% | 26.00% | 28.00% | 19.70% | 30.00% |
| Std.deviation | 3.83161 | 3.42072 | 3.49690 | 3.51822 | 3.82407 | 2.84849 | 4.18501 |
| Minimum | 2.00 | 4.00 | 5.00 | 3.00 | 2.00 | 4.00 | .00 |
| Maximum | 26.00 | 29.00 | 30.00 | 26.00 | 25.00 | 24.00 | 26.00 |
| Range | 24.00 | 25.00 | 25.00 | 23.00 | 23.00 | 20.00 | 26.00 |
| Skewness | .160 | -.278 | -.238 | .173 | -.187 | -.050 | -.116 |
| Kurtosis | -.191 | .149 | .114 | .104 | -.227 | -.088 | -.508 |

**Table no. 6 – The values of statistical indexes for the questionnaire Eysenck - Wilson**

Most of the athletes aged under 15, as well as the ones aged 26, 27, 28 and 30 belong to the type Pacifist. Most of the athletes are part of the ones who did not have results either in the national competitions or in the international competitions and they belong to the type Aggressive. The Pacifists are especially the ones on the third place in international competitions, while the ones on the second place in international competitions are equally Pacifists and Aggressive.

**The assertive behavior** is characterized by the fact that neither personal rights nor the rights of the others are breached in communication, the subjects expressing his needs, wishes, feelings and preferences in an open and honest way, in a social adequate manner. The assertive behavior proves self esteem and the esteem for the others, promotes self-development, self-control and the positive appreciation of self value. Most of the subjects have an assertive behavior (77% of the subjects). The average of the group and the median are around Me=18, while the most frequent value is Mo=20. All these aspects show clearly an assertive behavior. Even more, the distribution of data reveals the subjects' predominant trend to assertiveness. Negative correlations were registered between assertiveness and age and assertiveness and the town of origin.

This competency considers how well you set goals and derives satisfaction from the achievement of standards of excellence and improved personal performance. It considers your ability to apply yourself, to persist and to manage under pressure to achieve goals and targets. It considers the extent to which you maintain a balanced perspective that can operate with changing priorities. 81.92% of the subjects present this type of behavior. For this reason both the average result of the group (x=17.6867) and the median (Me=18.00) are in the category designating this type of behavior the same as the module of the pattern (Mo=17.00). The same as in Assertiveness, the distribution of data show a behavior oriented preponderantly towards the purpose. Most of the athletes have this behavior no matter the age, sport category, sport discipline or how long they have been practicing it, county or education level.

**Manipulation** is the action when a social actor (person, group, collectivity) is made to think and/or act in a way compatible with the initiator's interests, not with his own interests, by the use of persuasion' techniques, bending the truth under the impression of freedom of thinking and decision making. The difference between manipulation and persuasion is that in case of manipulation, the manipulated one is unaware of the intention of the one using this process. This type of behavior characterizes 56.54% of this research population. The average of the pattern has the value of x=13.1237 and is situated in the area of the same type, while the median and the module are on the edge between manipulation and empathy.

The values in table 4 show a trend towards manipulation also in the persons who have the capacity to put themselves into another's shoes.

There is a greater trend towards manipulation in the people aged 18-24, which then lowers while the people aged 28-30 show an empathic behavior. The lowest averages were registered in athletes practicing sport shooting (x=9.67), orientation (x=9.75) and jujitsu (x=10.50), while the highest were registered in biathlon (x=16.00), chess (x=15.20), and badminton (x=14.80).

**Sensation-seeking** is a feature defined by looking for various, new, complex and intense experiences and feelings and taking physical, social, legal and financial risks aiming to live such experiences (Zuckerman, 2001). By measuring "looking for sensations" and "looking for new" strong connections were done with the anti-social behavior, anti-social behavior and the abuse of substances (Zuckerman si Cloninger, 1996). This type of behavior characterizes only 24.4% of the investigated athletes. Most of the athletes reject an adventurous lifestyle, as the statistical data in table no. 4 show. All the values of the pattern's descriptive parameters – the group's average (x=13.4834), the median (Me=14.00) and the module (Mo=15.00) – occur in the area of this type of behavior. The information related to data distribution reveals that the investigated athletes show a trend towards a behavior characterized by lacking in boldness.

Significant values of the correlation coefficient (la p=0.05) were nevertheless determined between looking for sensations and the individual or team sport (r=0.065), between looking for sensations and age (r=0.083) and between looking for sensations and the time when the subjects began practicing sport (r=-0.049).

**The dogmatic** is a person characterized by rigidity and simplicity, with a mechanic or schematic behavior. The persons on the opposite pole are characterized by flexibility, having the capacity to adapt easily to new situations. These two typologies are equally seen in Romanian athletes. The group's average (x=13.1237) is also situated between the two types of behavior. The group is homogenous enough, the variability of the group is 19.70%, while both the average and the median of the group may be taken into consideration when establishing the group's mean. The group's median is Me=14.00, and this is in the same time the most frequent value of the group, which is situated in the area of the persons with a more flexible behavior. Negative correlations were registered between age and dogmatism (r=-0,055), between the sport category and dogmatism (r=-0.057) and between the education level and dogmatism (r=-0,063). As for the sport category, there are significant differences between junior athletes' trend towards dogmatism and senior athletes' trend towards flexibility **(**Diagram no. 16).

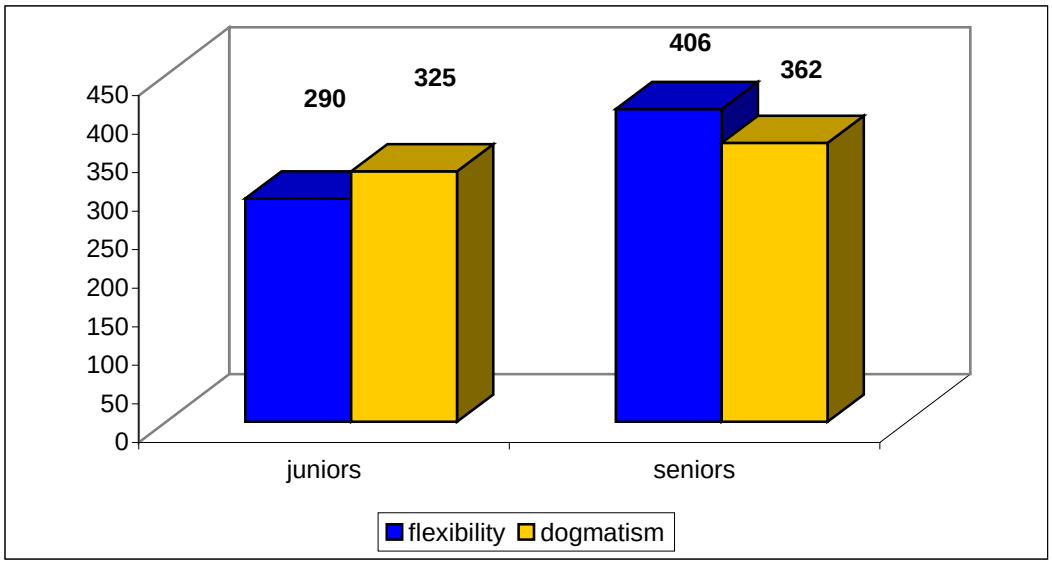



**Diagram no. 16 – The differences between flexibility and dogmatism based on sport category**

The lowest values of the average results occurred in the athletes practicing orientation (x=12.00), kempo (x=12.20), sport shooting (x=12.33) and jujitsu (x=12.75), while the highest were the ones in biathlon (x=16.33), boxing (x=15.67), rowing (x=15.23) and speed skating (x=15.14).

Regarding the seventh aspect of the questionnaire Eysenck –Wilson (**Masculinity vs. Femininity)** we state that Romanian athletes are characterized by masculinity – 70.4% of the investigated population. This type of behavior is bended towards aggressiveness and characterized by interests of development exploration, holding the feelings' expression and low sensibility. The most frequent value (Mo=14) in the pattern is the same with the median (Me=14.00) of the group, with values very closed to the group's average (x=13.8806) and corresponds to the same type of behavior.

The distribution of data shows the same low trend towards weaknesses and any type of sentimentalism – the curve of data distribution is oriented towards right and still.

The lowest values of the average results occurred in athletes practicing sport dancing (x=10.45), gymnastic (x=10.57), orientation (x=11.00) and sport shooting (x=11.17), while the greatest in ones practicing kempo (x=16.80), ice hockey (x=16.70), sleigh (x=16.50), kayak-canoe (x=16.24) and fitness (x=16.04).

## 4. The scale of self consciousness (Allan Fenigstein et al.)

(Private Self-Consciousness; Public Self-Consciousness; Social Anxiety)

The standard scores of the tests are the following:

**PSC - Private Self-Consciousness (A)**
**Medium interval: 23-29**
**A. Low score =** The athlete shows the trend to avoid thinking about himself and he is stubborn when it comes to examining his own thoughts, feelings and inner impulses/ trends.
**A. High score** = The athlete is preoccupied by his "inner person" and spends a lot of energy for self-examination. Even more, he is sensitive, maybe even over-sensitive to the events in his inner environment that concerns him.
**PSC - Public Self-Consciousness (B)**
**Medium interval: 16-22**
**B. Low score =** The athletes shows a weak interest in how other people react in relation with him. One may say they (n.r. the athletes) lack the consciousness of the way other people sees them or that they seem to be insensitive as a result of a superior self-confidence.
**B. High score** = The athlete is preoccupied by other people's actions and opinions, which might lead to an hypersensitivity and a greater susceptibility towards other people's rejection feelings.
**SA. - Social anxiety (C).**
**Medium interval: 9-16**
**C. Low score** = The athlete is confident in the social situations and interacts with the others.
**C. High score =** The athlete is not confident in the social situations, he is distrait because of self-examination that leads to a discrepancy with other people requirements. He may be solitary, avoiding the social interaction situations. He should be helped to balance the distrait state.
**The General Self-Consciousness (GSC) as a sum of the three scales. Scores' scale: de la 0 la 92; Medium interval: 53-63**
**CSG. - Low score** = The athlete shows the trend not to use too much time or energy examining his own behavior or analyzing his own thoughts. For the people around him, this behavior might be seen as lack of self-understanding or refuse to be preoccupied by his own person.
**CSG. High score** = The athlete focuses on his own thoughts and actions a lot of time and he is preoccupied by the reasons of his own behavior. A very high score (80 points) shows that the athlete is obsessed with his own person and self-examination.

The scale of self consciousness is a test elaborated by Allan Fenigstein, Michael Scheier and Arnold Buss in 1984. It is divided in three separated scales describing the personal self consciousness, public self consciousness and social anxiety. The authors also proposed another general scale as a sum of the three scales. The scores within the average interval on all four dimensions show the athletes with a current balanced psychical state, conscious about their own persons,

adapted to the social environment (colleagues and other persons), with no distrait complexes.

**The Private Self-Consciousness** refers to the way the individual manages the inner events only he knows about. 48.66% of the subjects show the trend to avoid thinking about them and they are refractory to examining their own thoughts, feelings and impulses. (Diagram no. 17).

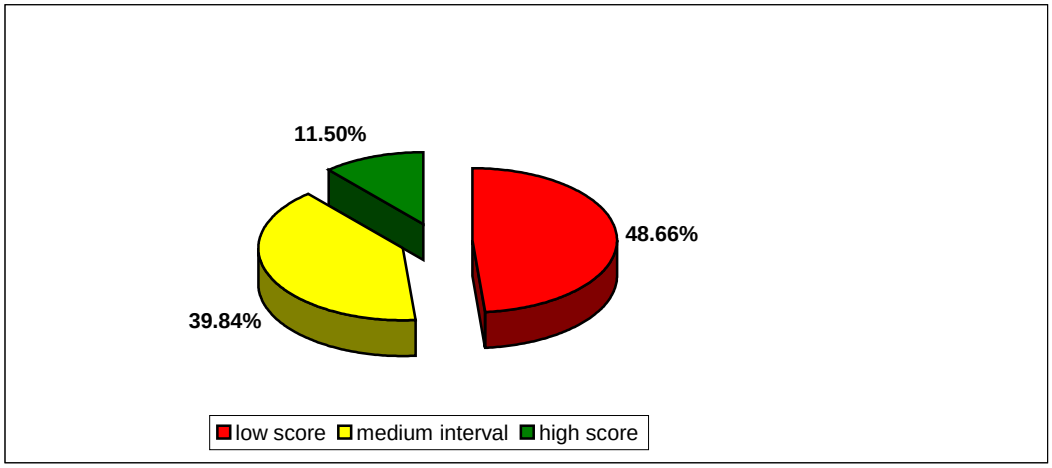



**Diagram no. 17 – The scores of sub-scale PSCA**

Only 11.50% of the subjects are preoccupied by the "inner person" and spend much energy for self-examination. Nevertheless, both the group's average (x=22.6505), and the median (Me=23.00) are situated in the area of average scores. The most frequent value is Mo=24.00, which is also situated in the average interval (Table no. 7). Data distribution proves the individuals trend to concentrate their attention to the inner aspects of the ego.

| PSC-A | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mean | Median | Mode | Variability | Std.deviation | Minimum | Maximum | Range | Skewness | Kurtosis |
| 22.650 | 23.000 | 24 | 25.00% | 5.6593 | 5.00 | 45.00 | 40.00 | -.042 | .169 |

**Table no. 7 – The values of statistical indexes for the sub-scale of the personal self consciousness**

The highest value occurred in 22 years old subjects (x=24.53), while the lowest in the 27 years old (x=20.40). Based on the sport discipline practiced, the highest average scores were obtained in the athletes practicing sport shooting (x=26.66), kempo (x=26.00) and martial arts (x=25.85), while the lowest to the ones practicing Greek-Roman wrestling (x=17.71), boxing (x=18.44) and rowing (x=19.15). (Diagram no. 18)

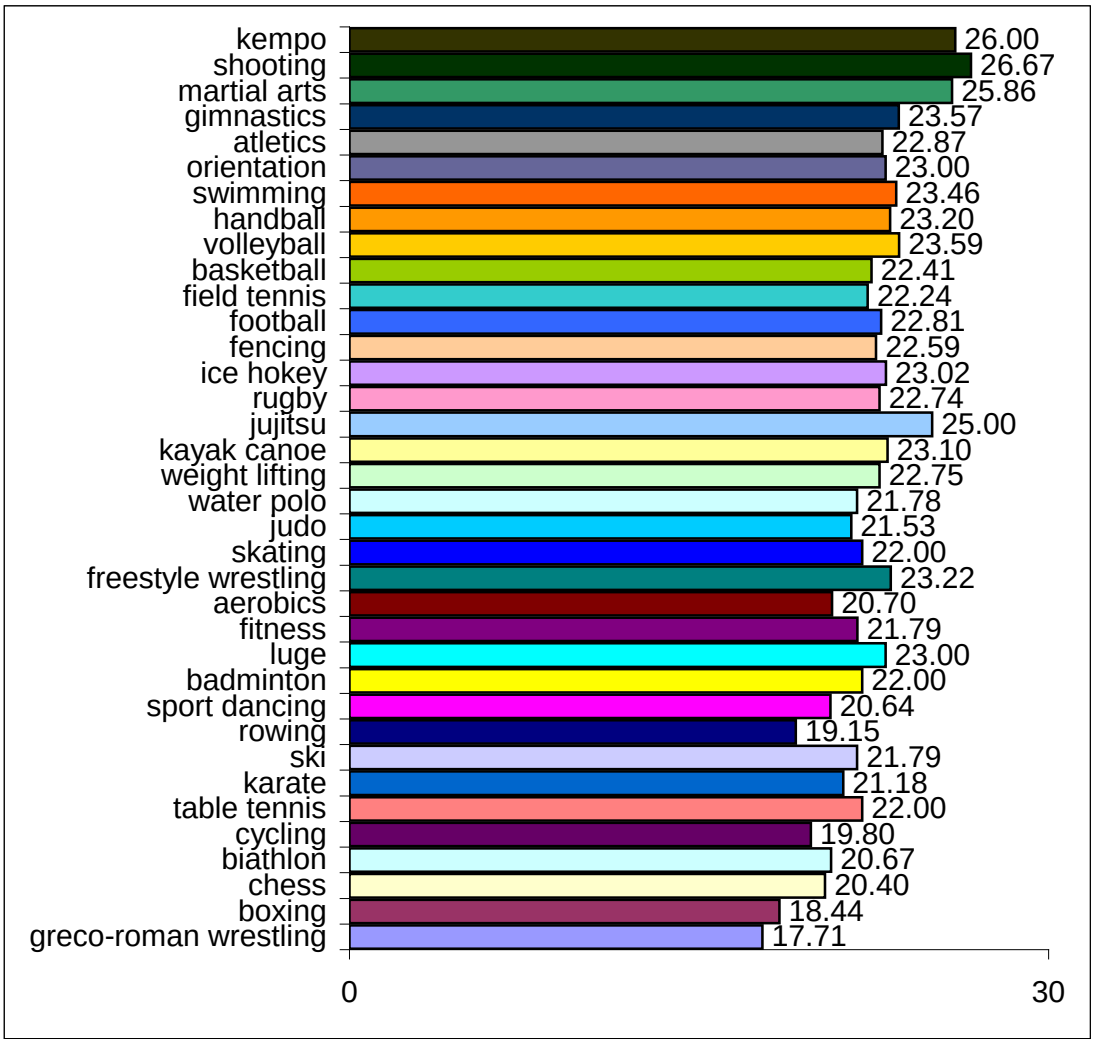



**Diagram no. 18 – The average scores obtained on the sub-scale PSC-A**

The significant values of the correlation coefficient (la p=0.05) were established between the personal self consciousness and sport category (r=.058), which means that as the experience in sport activity grows the athletes become more sensitive to the events in their own environment that affect them directly.

52.64% of the subjects registered values of the **public self consciousness** within the average level. 29.36% of the athletes show a weak interest in the way the other people react in relation with them, while the rest of 18% are preoccupied by the other people's actions and opinion and trend to control thoroughly their behavior (Diagram no. 19).

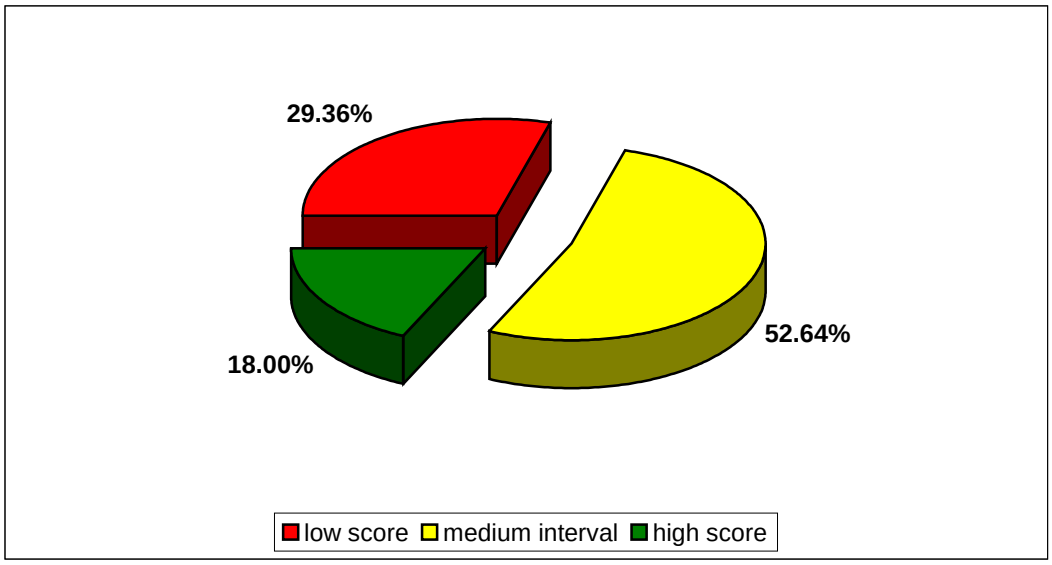



**Diagram no. 19 – The scores of the sub-scale PSC-B**

The group's average score and the median have really closed values (x=18.125 and Me=18.00) (table no.8.) being situated in the area of average scores. The most frequent registered value is Mo=19.00 and is the middle of the segment of people who may self-perceive from other people's point of view. The data distribution shows a very large number of subjects' trend towards the average scores, namely a balance between the self-evaluation activity and the fear of evaluation. If we consider the study of Pentice-Dunn and Rogers, this balance related to public self consciousness might be due to the fact that the subjects participated to this study as anonymous, which leads to a public self consciousness weaker than usually.

| PSC-B | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mean | Median | Mode | Variability | Std. of deviation | Minimum | Maximum | Range | Skewness | Kurtosis |
| 18.125 | 18.000 | 19 | 27.34% | 4.9557 | .00 | 44.00 | 44.00 | -.004 | .829 |

**Table no. 8 – The values of statistical indexes for the sub-scale of public self-consciousness**

The calculation of the correlation coefficients showed significant values between the scores obtained on the public self consciousness and age, fact that enforces the idea that as the athletes grow old, they become more confident in themselves and less sensitive to other people's remarks (r=-.058, for the range of signification p=0.05). This thing is enforced also by the analysis of the average results obtained by the athletes taking into account the age. Therefore, the highest scores were obtained by the 15 years old athletes (x=19.04) and the 17 years old ones (x=18.65), while the lowest occurred in the 29 (x=15.92) and the 28 years old ones (x=15.96).

With respect to the social anxiety, 9.40% of the subjects are characterized by adaptation difficulties within the social environment, at the office, in a group of friends, with hobby-partners or fitness colleagues, 55.46% are feeling comfortable in social situations as well as when interacting with others (Diagram no. 20)

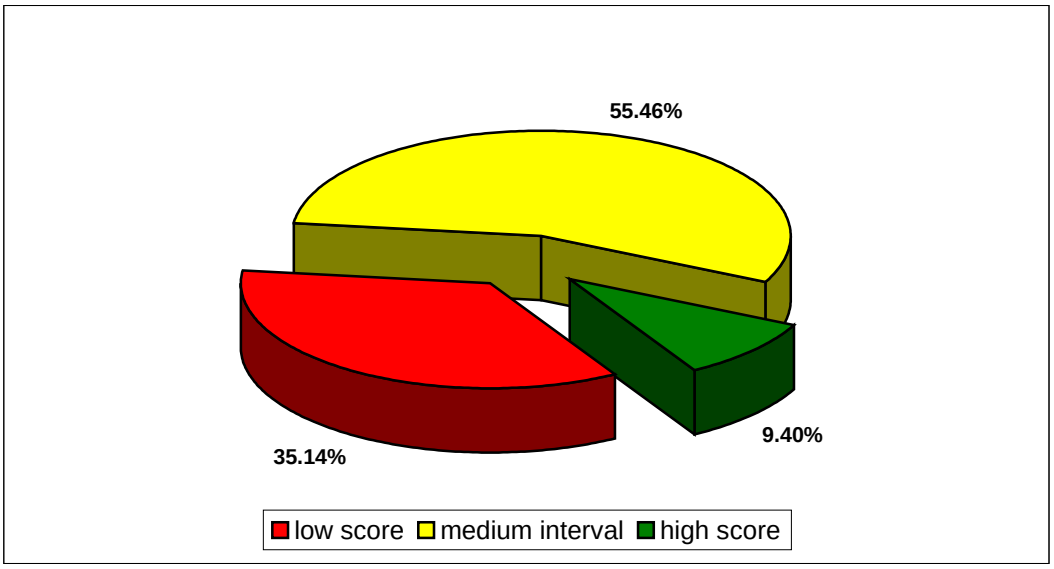



**Diagram no. 20– The scores of the sub-scale SA**

The group mean (x=10.4182), median (Me=10.00) and mode (Mo=11.00) are situated within the segment where the subjects are not afraid of being exposed to embarrassing moments. (Table no. 9)

| SA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mean | Median | Mode | Variability | Std. deviation | Minimum | Maximum | Range | Skewness | Kurtosis |
| 10.418 | 10.000 | 11 | 43.59% | 4.5420 | .00 | 35.00 | 35.00 | .412 | .972 |

**Table no. 9 – Values of the statistical indicators for the social anxiety sub-scale**

The group variability is very high (V=43,59%), which means an wide spreading of the data and the lack of homogeneity of the group. Therefore, for this sub-scale, we consider the group median to be very representative for characterizing the pool. The data distribution proves that there is a predilection of the subjects for social situations, they are easily integrating in groups and have feelings of group affiliation, which give them an inner peace. After calculating the correlation coefficients, negative correlations were achieved between the social anxiety scores and the age, which proves the fact that together with growing up, the athletes become less solitary and are integrating easier (r=-.047, for the significance threshold p=0.05). This fact is also proven by the means of the results achieved by the older athletes: 28 years (x= 6.5), 27 years (x=8.93) or 24 years (x=9.20).

**The general self conscience (GSC)** represents the sum of the three sub-scales: personal self-conscience, public self-conscience and social anxiety. 57.12% of the subjects tend not to spend too much time or energy for reviewing their own behavior or analyzing their thoughts, 29.72% of the athletes are characterized by a balanced psychic state, aware of their own personality, adapted to the social environment (colleagues and other persons) and without distrait complexes, while 13.16% of them are focused on their own thoughts and actions for a long time and they are preoccupied by the reasons of their own behavior. (Diagram no. 21)

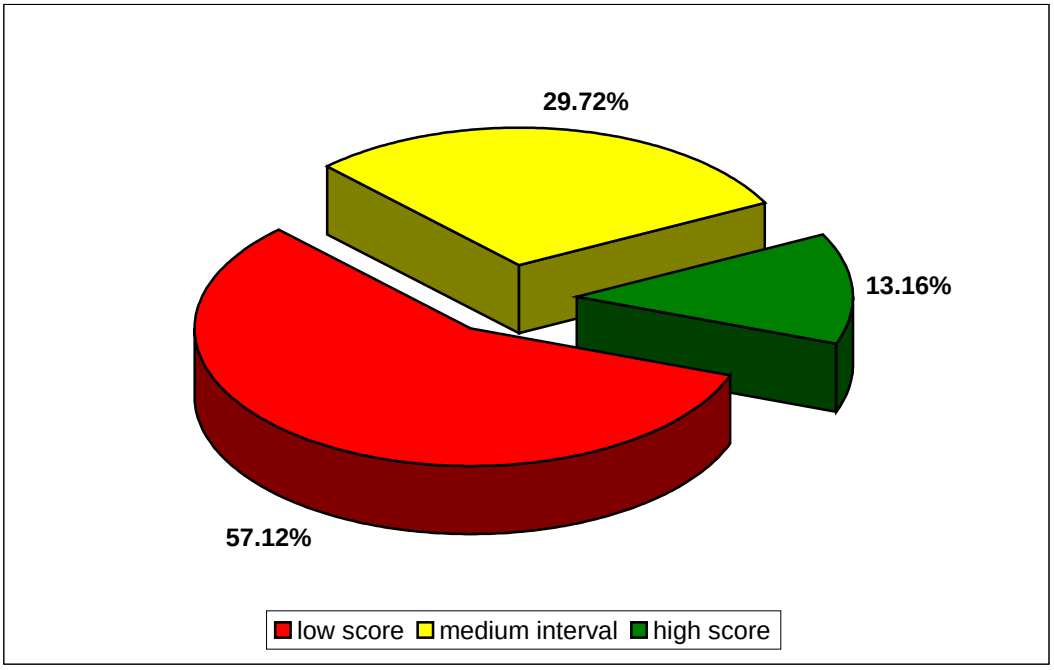



**Diagram no. 21 – The scores of the sub-scale GSC**

All the three indicators of the central tendency are situated in the low scores' area (x=51.1910, Me=51.00 and Mo=52.00). This means that we can characterize the athletes as being deprived of self-understanding, fact that is also confirmed by the data distribution.

| GSC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mean | Median | Mode | Variability | Std. deviation | Minimum | Maximum | Range | Skewness | Kurtosis |
| 51.1910 | 51.0000 | 52 | 21.85% | 11.18832 | 10.00 | 104.00 | 94.00 | .022 | .735 |

**Table no. 10 – Values of the statistical indicators for the GSC scale**

The means of the achieved results are situated in the low scores' area, except for the 22 years old athletes (x=54.11) or those practicing martial arts, (x=54.28), sport shooting (x=55.50) and (x=55.60). **(**Diagram no.22)

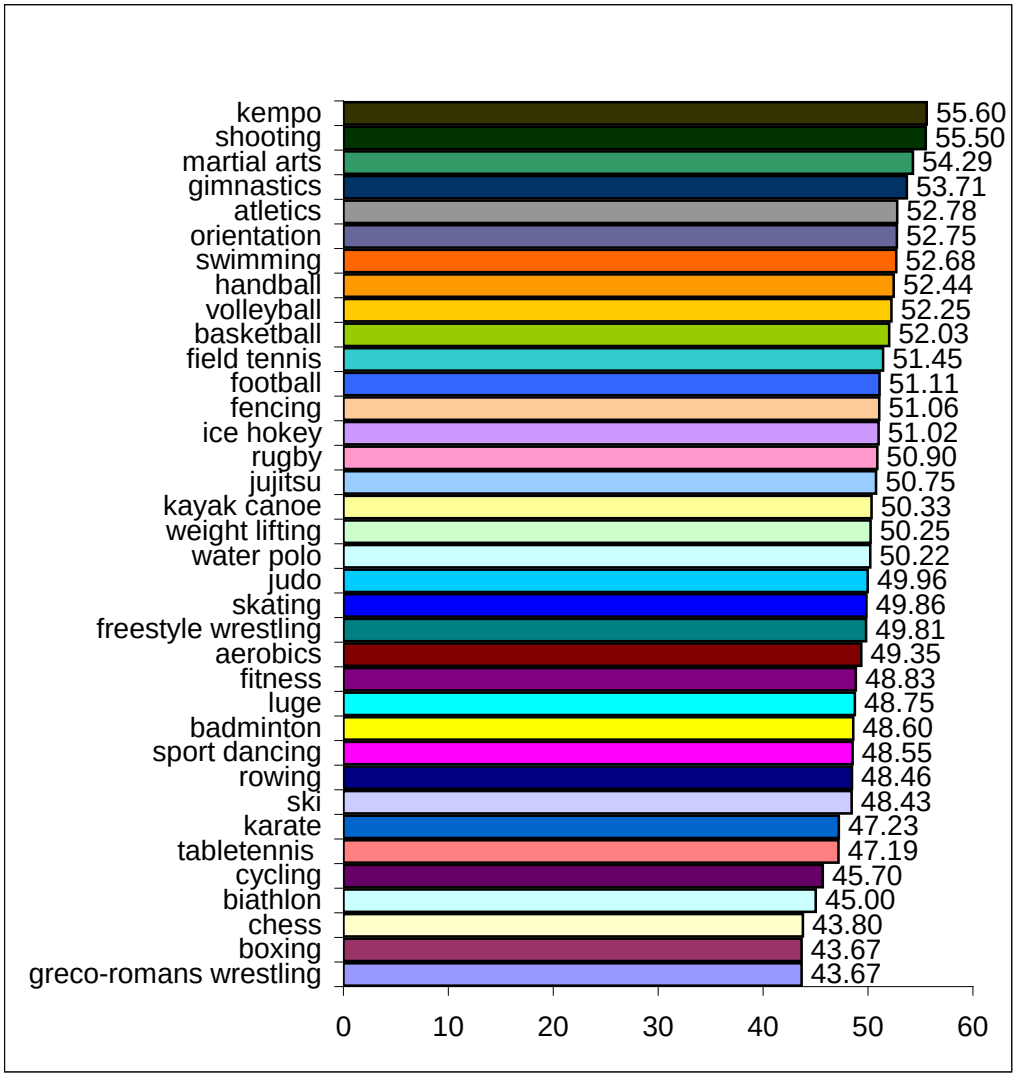



**Diagram no. 22 – Means of the scores accomplished on GSC scale**

In an experiment conducted by Diener in 1979, it has been confirmed the fact that there is a proportionality connection between the lack of self conscience and the non-inhibitory behavior.

## 4. The Profile of Mood States Test (POMS) McNair et al.

The items quotation was done on the Likert scale

In 1971, Mc.Nair, Lorr and Droppleman have created and perfected a questionnaire named POMS (Profile of Mood States), which contains 65 adjectives

and identifies and evaluates 6 emotional-effective states: Tension-Anxiety (TA), Depression-Dejection (DD), Anger-Hostility (AH), Vigor-Activity (VA), Fatigue-Inertia (FI) and Confusion-Bewildered (CC). This test identifies and evaluates the psychic states that are transitory, fluctuant and less stable.

For this scale, the subjects' answers were very different. The variability coefficient is different from a factor to another, being ranged from 26% to 72%. This indicates a wide spreading of the data and an asymmetric distribution, and we take into consideration the groups' median for the interpretation of the central tendency of the POMS scale's factors. **(**Table no. 11)

| | TA | DD | AH | VA | FI | CB |
|---|---|---|---|---|---|---|
| Mean | 13.1064 | 12.7438 | 13.8849 | 19.9899 | 8.8227 | 7.7402 |
| Median | 13.0000 | 11.0000 | 12.0000 | 21.0000 | 8.0000 | 7.0000 |
| Mode | 17 | 6/9 | 9 | 21 | 6 | 9 |
| Variability | 46.30% | 72.00% | 60.44% | 26.00% | 65.83% | 59.61% |
| Std. deviation | 6.06932 | 9.19872 | 8.39264 | 5.20262 | 5.80840 | 4.61429 |
| Minimum | .00 | .00 | .00 | .00 | .00 | .00 |
| Maximum | 33.00 | 50.00 | 40.00 | 34.00 | 28.00 | 26.00 |
| Range | 33.00 | 50.00 | 40.00 | 34.00 | 28.00 | 26.00 |
| Skewness | .109 | .943 | .673 | -.547 | .637 | .466 |
| Kurtosis | -.339 | .572 | -.047 | .366 | -.134 | -.070 |

**Table no. 11 – Values of the statistical indicators for POMS scale**

**The Tension-Anxiety Factor** refers mainly to the physical tension (somatic, muscle-skeleton-like), but also to the psychomotor manifestations. 47.58% of the subjects had high scores, which means a solid physical tension, while 52.42 % had low scores. (Diagram no. 23)

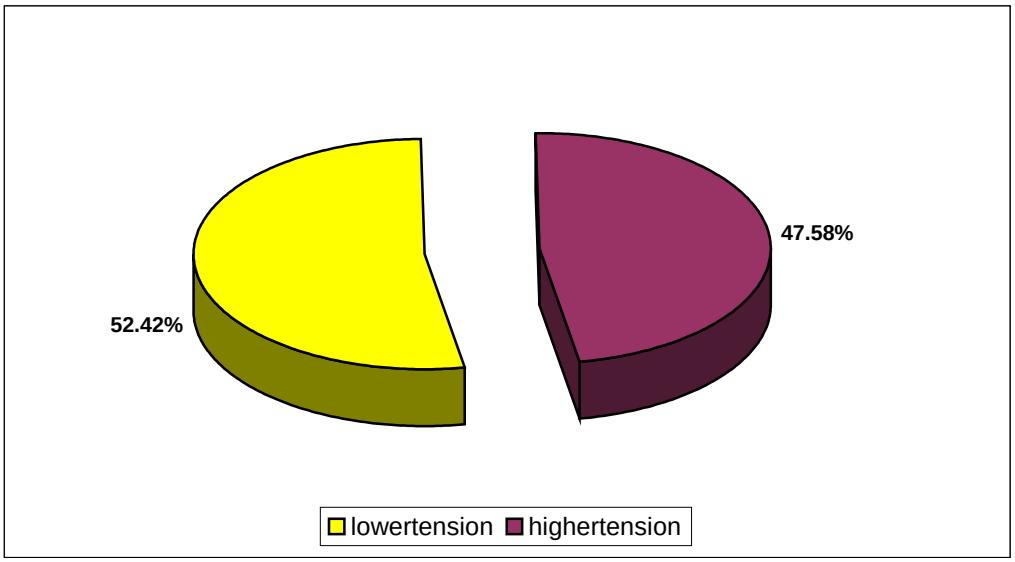



**Diagram no. 23 – Tension-Anxiety Factor**

The median is situated in the low scores' area. Despite this, the most frequent value is Mo=17, which is situated in the high scores' area. The data distribution indicates a decreased tendency towards physical discomfort states.

Significant values of the correlation coefficient (p=0.05) were established between the Tension-Anxiety Factor and age (r=.053), the sport category (r=.108), the period since practicing sport (r=.093), the achieved results (r=.062), the education level (r=.075), the sport type – individual / team (r=.024) and Olympic / non-Olympic (r=.057). All these correlations indicates us the fact that the more you get older and more experienced in sport activity, the anxiety increases. Paradoxically, the anxiety is higher for the athletes practicing non-Olympic sports or team sports.

| | | TA | DD | AH | VA | FI | CB |
|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | **.053*** | -.037 | -.044 | .007 | -.044 | **-.053*** |
| | *Sig. (2-tailed)* | *.048* | *.175* | *.100* | *.795* | *.106* | *.050* |
| Category | Pearson Correlation | **.108**** | .025 | -.028 | .008 | -.020 | .012 |
| | *Sig. (2-tailed)* | *.000* | *.357* | *.297* | *.770* | *.467* | *.663* |
| Years of activity | Pearson Correlation | **.093**** | -.019 | .013 | .042 | -.009 | -.012 |
| | *Sig. (2-tailed)* | *.001* | *.483* | *.620* | *.118* | *.731* | *.663* |
| Personal best result | Pearson Correlation | **.062*** | **-.078**** | **-.078**** | .038 | **-.056*** | -.018 |
| | *Sig. (2-tailed)* | *.021* | *.004* | *.004* | *.160* | *.036* | *.504* |
| Education level | Pearson Correlation | **.075**** | .011 | -.015 | .013 | -.033 | -.025 |
| | *Sig. (2-tailed)* | *.005* | *.690* | *.565* | *.642* | *.222* | *.344* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Individual / team sport | Pearson Correlation | .024 | **.058*** | **.054*** | .004 | .026 | .020 |
| | *Sig. (2-tailed)* | *.369* | *.032* | *.046* | *.886* | *.325* | *.448* |
| Olympic / non-Olympic sport | Pearson Correlation | **.057*** | .045 | **.088**** | .016 | .050 | **.087**** |
| | Sig. (2-tailed) | .033 | .096 | .001 | .560 | .062 | .001 |

**Table no. 12 – Correlations between the POMS parameters and the athletes' identification data**

**The Depression-Dejection Factor** refers to the depression state accompanied by the feeling of inadequacy. 36.08% of the subjects had high scores, which means a severe depression, while 63.92% had low scores.

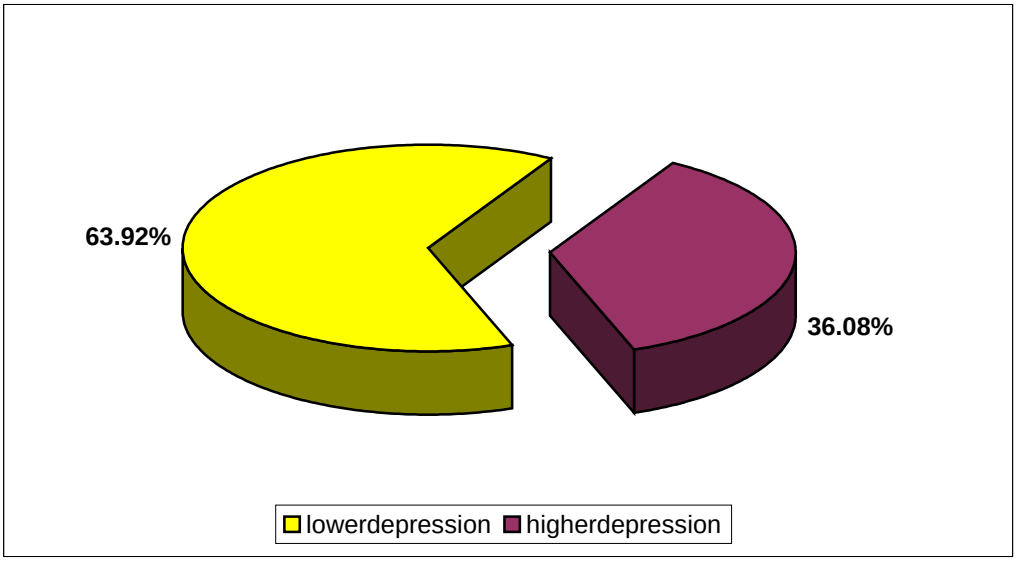



**Diagram no. 24 – Depression-Dejection Factor**

The Median (Me=11.00) is situated in the low scores' area as well as the most of the athletes' values (Mo=6 and Mo=9). The data distribution indicates a good psychic state, not a depressive one.

Significant values of the correlation coefficient (p=0.05) were established between the Depression-Dejection Factor and the sport type individual / team (r=.058), this meaning that the inadequacy feelings can occur in team sports. Negative correlations were registered between the Depression-Dejection Factor and the personal best result (r=-0.078), which means that the depression states are more frequent on athletes without significant results.

**The Anger-Hostility Factor** represents the anger and the aversion towards the others. 63.92% of the subjects had high scores, which means a strong hostility, while only 36.08% had scores that reveal their friendship feelings towards the others.

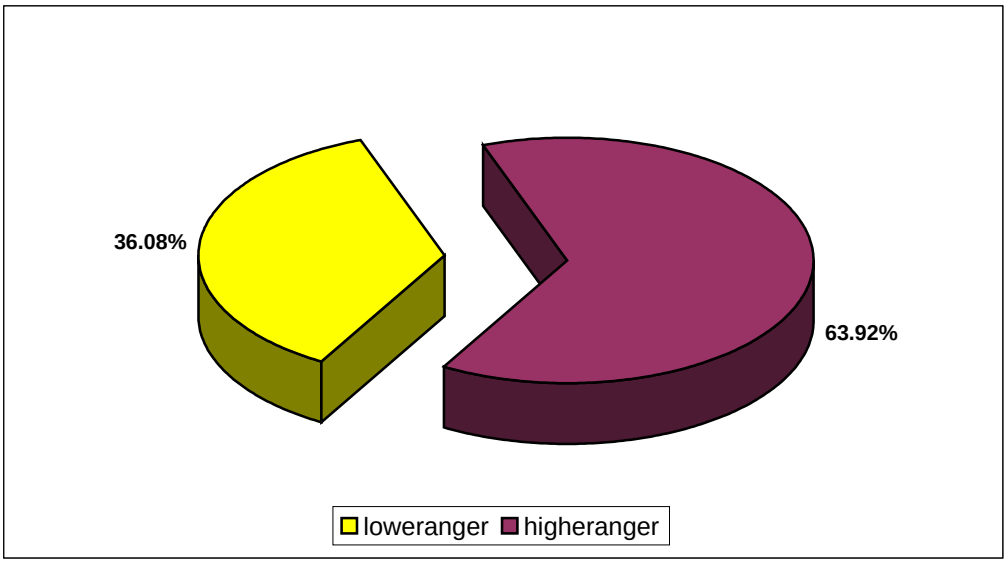



**Diagram no. 25 – Anger-Hostility Factor**

The median (Me=12.00) is situated in the high scores' area, which means that an aversion state towards the others was characterizing the athletes when applying the questionnaires to them. In exchange, the most frequent value registered is situated in the low scores' area. This indicates us that, although more than half of the athletes feel an anger state, even rage, most of the subjects are situated in the middle area of the interval (Mo=9). This fact is reinforced by the data distribution, which reveals the same tendency towards anger of most of the subjects, even if there aren't very high scores.

The correlation calculation highlighted significant values of the correlation coefficient (p=0.05) between the Anger-Hostility Factor and the sport type – individual / team (r=.054) or Olympic / non-Olympic (r=.088), this meaning that the hostility feelings are met mostly in team sports and non-Olympic sports. Negative correlations were met between the Anger-Hostility and the best personal result (r=-0.078), which means that the adversity states are more frequent on athletes without significant results.

**The Vigor-Activity Factor** refers to vigor, exuberance and a high level of energy. 81.20% of the subjects had high scores and 18.80% had low scores, which means a strong positive tendency of the athletes.

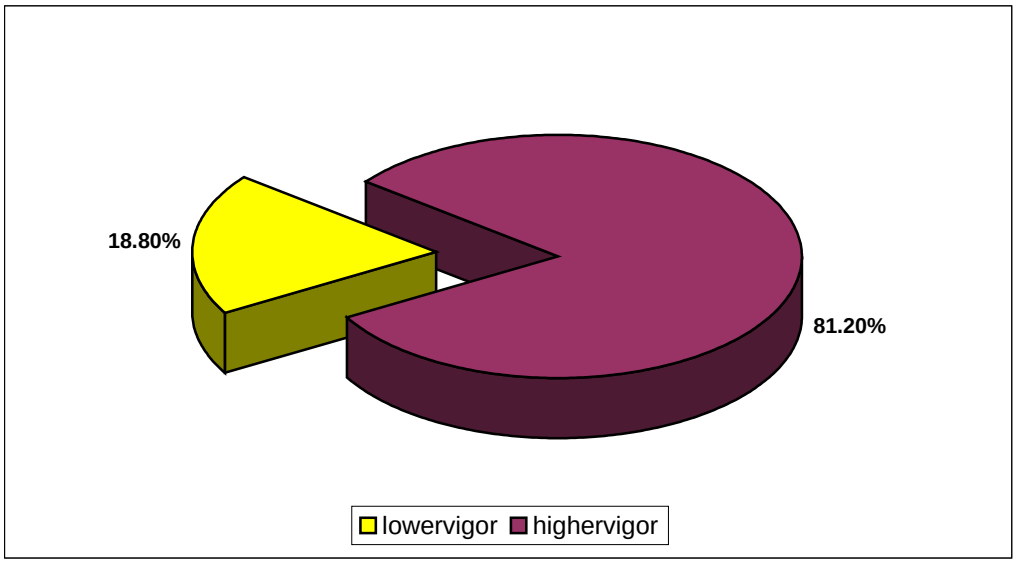



**Diagram no. 26 – The Vigor-Activity Factor**

The median (Me=21.00) and the mode are the same (Mo=21) and can be found in the high scores' area. Moreover, the data distribution indicates the same tendency towards vigor and activity.

There are no significant correlations between this factor and the population's demographic characteristics.

**The Fatigue-Inertia Factor** is characterized by a fatigue state and a low energy level. 64.86% of the subjects had low scores and 35.14% had high scores, which indicates us the same positive tendency of the athletes.

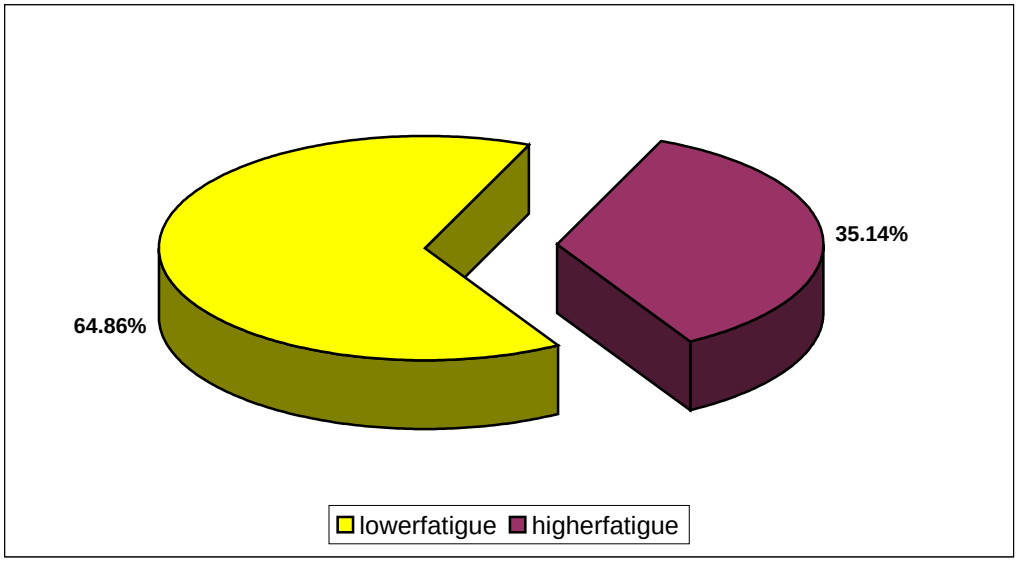



**Diagram no. 27 – The Fatigue-Inertia Factor**

The median (Me=8.00) is situated in the low scores' area, while the mode (Mo=6) has a lower value than the median. These characteristics, together with the data distribution indicate the fact that the athletes weren't feeling a physical extenuation state in the moment of completing the questionnaires. Significant negative values were highlighted between the Fatigue-Inertia Factor and the best personal results, so that the athletes with better results, particularly in international sport events had a lower level of physical fatigue.

**The Confusion-Bewildered Factor** is characterized by a perplexity state, feeling either a decrease of the cognitive capacity or both. 79.10% of the subjects had low scores and only 20.90% had high scores. This fact could mean that the athletes have the capacity to concentrate and refers to a classical organization of the emotional dimension.

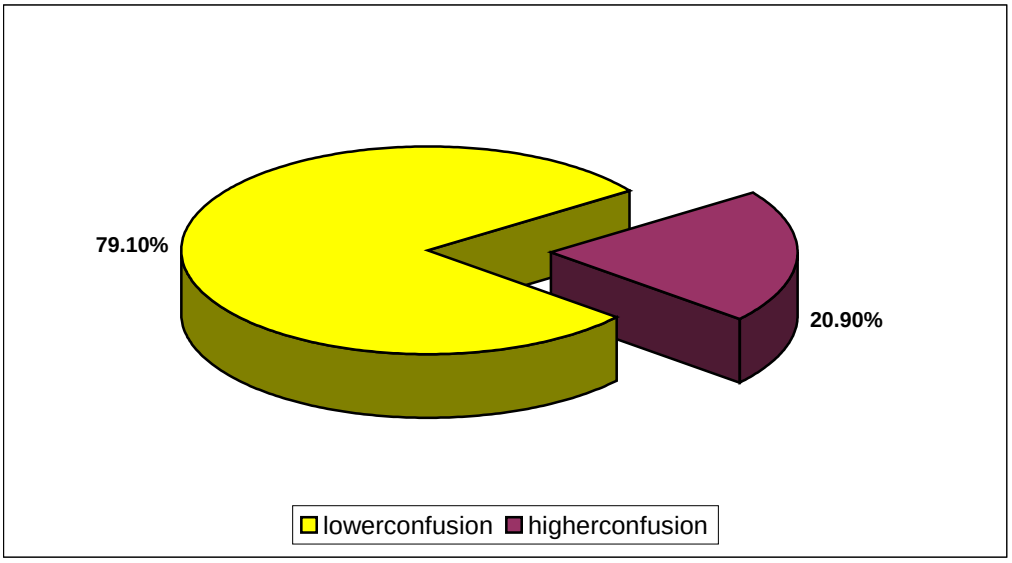



**Diagram no. 28 – The Confusion-Bewildered Factor**

Both the median (Me=7.00) and the most frequent score (Mo=9) are situated in the low scores' area, as well as the data distribution, and indicate the fact that the athletes characterize themselves as being cognitively efficient.

The values associated to the confusion-bewildered state are reduced on older athletes (r=-0.053, p=0.05) and those from non-Olympic sport disciplines (r=0.087, la p=0.05).

By applying the POMS in studies on athletes' personality and the relation between the affective-emotional states and the performance level, it has been reached to a typical model of the mood, specific to elite level athletes. "ICEBERG PROFILE" is characterized by low scores on Tension, Depression, Anger, Vigor, Tenderness, Confusion and high scores on Vigor. The "ICEBERG" Profile (McNair, Droplemman, POMS Handbook, Edition 1992) has the following raw

values on the six scales: Tension-Anxiety – 7; Depression – 2; Anger – 9; Vigor – 28; Fatigue – 9; Confusion - 8. Among the 1383 subjects, none of them achieved the raw score on ICEBERG profile, but 291 subjects (representing 21.04%) registered this type of profile, which means that they had a positive emotional state (Diagram no.29).

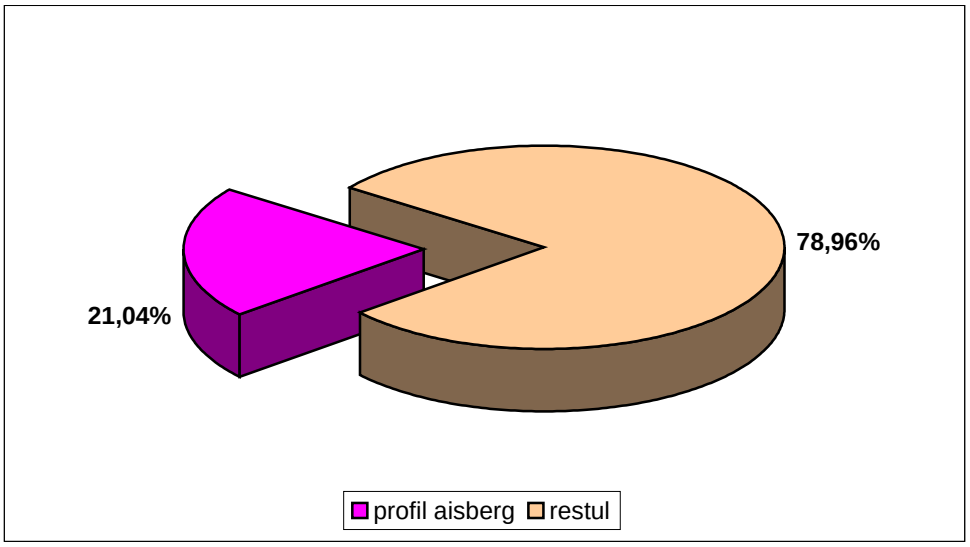



**Diagram no. 29 – Athletes with iceberg profile**

| | | Aggressiveness | Assertiveness | Achievement orientation | Manipulation | Sensation-Seeking | Dogmatism | Masculinity |
|---|---|---|---|---|---|---|---|---|
| TA | Pearson Correlation | **.217**$^{**}$ | -.020 | **.068**$^{*}$ | **.087**$^{**}$ | **.121**$^{**}$ | **.053**$^{*}$ | **-.116**$^{**}$ |
| | *Sig. (2-tailed)* | *.000* | *.460* | *.011* | *.001* | *.000* | *.048* | *.000* |
| DD | Pearson Correlation | **.203**$^{**}$ | **-.157**$^{**}$ | -.046 | **.094**$^{**}$ | **.117**$^{**}$ | .052 | **-.100**$^{**}$ |
| | *Sig. (2-tailed)* | *.000* | *.000* | *.090* | *.000* | *.000* | *.054* | *.000* |
| AH | Pearson Correlation | **.376**$^{**}$ | **.062**$^{*}$ | -.018 | **.232**$^{**}$ | **.220**$^{**}$ | **.139**$^{**}$ | .032 |
| | *Sig. (2-tailed)* | *.000* | *.020* | *.497* | *.000* | *.000* | *.000* | *.238* |
| VA | Pearson Correlation | .005 | **.130**$^{**}$ | **.134**$^{**}$ | -.014 | .030 | **.055**$^{*}$ | **.067**$^{*}$ |
| | *Sig. (2-tailed)* | *.840* | *.000* | *.000* | *.613* | *.265* | *.040* | *.013* |
| FI | Pearson Correlation | **.167**$^{**}$ | **-.069**$^{*}$ | **-.096**$^{**}$ | **.114**$^{**}$ | **.112**$^{**}$ | .018 | **-.068**$^{*}$ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Sig. (2-tailed)* | *.000* | *.010* | *.000* | *.000* | *.000* | *.500* | *.012* |
| CB | Pearson Correlation | **.204**** | **-.075**** | **-.067*** | **.117**** | **.153**** | .017 | **-.095**** |
| | *Sig. (2-tailed)* | *.000* | *.005* | *.013* | *.000* | *.000* | *.529* | *.000* |

**Table no. 13 – Correlations between POMS parameters and personality traits**

The values associated to the tension-anxiety state are positively significantly correlating on p=0.01, with tendency towards aggressiveness (r=0.217), with tendency of being dominated (r=0.87), with **risk taking (r=0.121)** and inversely proportional to the masculinity (r=-0.116). At the 0.05 threshold, the correlation between tension-anxiety and purpose orientation (r=0.087) indicates us the fact that the athletes presenting a good level of performance objectives' determination have also the tendency to become more tensed in the pre-competition periods.

Depression – dejection, as states of the investigated athletes, positively correlate with aggressiveness (r=0.203, for p=0.01), but also with the tendency to let oneself dominated by the entourage (r=0.94, for p=0.01). At the same time, it can be also noticed the tendency for this state to be amplified by the sensations seeking (r=0.117, p=0.01). The more present the masculinity is, the more lower the depression-dejection values are (r=-0.100, la p=0.01).

After analyzing the correlations coefficients, it can be noticed that the anger-hostility have the tendency to positively correlate with aggressiveness (r=0.276, for p=0.01), dependence upon others (r=0.232, for p=0.01), sensations seeking (r=0.220, for p=0.01), but also dogmatism (r=0.139, for p=0.01). A lower level of the correlation is established between this state and assertiveness. It positively correlates at p=0.05, the correlation coefficients' values being 0.062.

With respect to the vigor and activity, the values achieved after testing indicate that they positively correlates with assertiveness (r=0.130, for p=0.01), purpose orientation (r=0.134, for p=0.01), but also dogmatism ((r=0.055, for p=0.05) and masculinity (r=0.067, for p=0.05). These correlations can provide us solutions for maintaining the optimal tonus of different training stages, thus being recognized the value of the management through objectives.

At the same time, it can be noticed that the fatigue-inertia states were more accentuated on athletes having higher values of aggressiveness (r=0.167, for p=0.01), dependence (r=0.114, for p=0.01) and risk taking (r=0.112, for p=0.01). We can declare that as these states accentuate, some of the athletes' personality traits tend to manifest more evidently, while others, such as assertiveness, purpose orientation, and masculinity tend to diminish.

The same type of correlation is also established between confusion-bewildered as state and the traits outlined by the Eysenck personality questionnaire. Thus, on the athletes with higher level of aggressiveness, it can be noticed that the values for this state are higher (r=0.204, for p=0.01). The positive correlation is

also noticed between confusion/bewildered - dependence (r=0.117, for p=0.01) and confusion/bewildered – risk taking (r=0.153, for p=0.01). Confusion/bewildered have negative correlations with purpose orientation, assertiveness and masculinity; as these states are more evident, the mentioned psychic state has a lower level.

| | | PSC-A | PSC-B | SA | GSC |
|---|---|---|---|---|---|
| TA | Pearson Correlation | **.090**$^{**}$ | **.100**$^{**}$ | **.204**$^{**}$ | **.166**$^{**}$ |
| | Sig. (2-tailed) | .001 | .000 | .000 | .000 |
| DD | Pearson Correlation | .031 | .015 | **.229**$^{**}$ | **.117**$^{**}$ |
| | Sig. (2-tailed) | .255 | .574 | .000 | .000 |
| AH | Pearson Correlation | -.013 | .024 | **.120**$^{**}$ | **.058**$^{*}$ |
| | Sig. (2-tailed) | .640 | .380 | .000 | .032 |
| VA | Pearson Correlation | .051 | **.092**$^{**}$ | **-.086**$^{**}$ | .037 |
| | Sig. (2-tailed) | .060 | .001 | .001 | .168 |
| FI | Pearson Correlation | -.025 | .047 | **.194**$^{**}$ | **.088**$^{**}$ |
| | Sig. (2-tailed) | .348 | .081 | .000 | .001 |
| CB | Pearson Correlation | -.016 | .004 | **.201**$^{**}$ | **.074**$^{**}$ |
| | Sig. (2-tailed) | .550 | .886 | .000 | .006 |

**Tabelul nr. 14 – Correlations between POMS parameters and Self-Conciousness**

| | | PSC-A | PSC-B | SA | GSC |
|---|---|---|---|---|---|
| Aggressiveness | Pearson Correlation | .009 | **.060**$^{*}$ | -.001 | .029 |
| | *Sig. (2-tailed)* | *.729* | *.026* | *.958* | *.282* |
| Assertiveness | Pearson Correlation | **.075**$^{**}$ | **.123**$^{**}$ | **-.265**$^{**}$ | -.016 |
| | *Sig. (2-tailed)* | *.005* | *.000* | *.000* | *.558* |
| Achievement orientation | Pearson Correlation | **.183**$^{**}$ | **.179**$^{**}$ | -.034 | **.158**$^{**}$ |
| | *Sig. (2-tailed)* | *.000* | *.000* | *.210* | *.000* |
| Manipulation | Pearson Correlation | -.036 | .014 | .037 | .005 |
| | *Sig. (2-tailed)* | *.183* | *.599* | *.169* | *.846* |
| Sensation- Seeking | Pearson Correlation | .023 | .042 | -.052 | .008 |

| | | | | | |
|---|---|---|---|---|---|
| | *Sig. (2-tailed)* | *.385* | *.121* | *.053* | *.767* |
| Dogmatism | Pearson Correlation | .048 | **.068*** | .017 | **.064*** |
| | *Sig. (2-tailed)* | *.073* | *.012* | *.532* | *.016* |
| Masculinity | Pearson Correlation | **-.126**** | **-.153**** | **-.180**** | **-.205**** |
| | *Sig. (2-tailed)* | *.000* | *.000* | *.000* | *.000* |

**Tabelul nr. 15 – Correlations between Self-Conciousness parameters and personality traits**

There are few correlations between Eysenck-Wilson questionnaire and self conscience scale. The aggressiveness scale significantly correlates with the public self conscience scale (r=0.060, for p=0.05); thus, as the behavior is more aggressive, the individuals become more preoccupied by the way they are perceived and this doesn't place them in the anti-social area. This is also reinforced by the fact that there are significant correlations between the assertive behavior and the self conscience, both the personal one (r=0.075, for p=0.01) and the private one (r=0.123, for p=0.01). This means that the more appreciative with their own value the subjects are, the more aware they become with respect of what they are and how they are seen by the others and, moreover, the greater confidence they have in building social relationships (negative correlation with social anxiety - r=-0.265, for p=0.01). The purpose orientation positively correlates with personal (r=0.183, for p=0.01), public (r=0.179, for p=0.01) and general (r=0.158, for p=0.01) self conscience, meaning the fact that some competencies improve the personal self image and the image of others.

There are also significant correlations between dogmatism and public (r=0.068, for p=0.05) and general (r=0.064, for p=0.05) self conscience. At the same time, the masculinity-feminity scale registers negative significant correlations with all the subscales of the self conscience: personal (r=-0.126, for p=0.01), public (r=-0.153, for p=0.01), general (r=-0.205, for p=0.01) and the social anxiety (r=-0.180, for p=0.01). Thus, the persons with low level of emotiveness are very preoccupied by their own thoughts and feelings, by the way they are perceived by the others and by the motives of their own behavior.

## B**. Social factors**

As we underlined in the chapter 1, the behavior of rejecting or accepting the use of prohibited substances is determined by the internal factors, which are subjective and external factors, which are social-environmental, especially the entourage. The athlete is the product of his own development and the social-educational-cultural factors.

*The questionnaire for athletes* aimed in the same time to learn *the attitudes and behaviors* characteristic for these ”social agents” and the way they are the product of the concrete social-cultural conditions where the athletes developed themselves.

It is logical and legal to think that only some of the psychical-individual and psychical-social features are *risk factors* for the doping behavior and that most of them are *prevention factors.* The anti-doping educational actions may change the risk factors into prevention factors.

The questionnaire consists in 57 items and it was filled in by 1404 athletes.

The items of the questionnaire are related to:

a) the subjects' knowledge on the types of prohibited substances and their effects;
b) the knowledge of the sanctions that might be imposed if they are caught using prohibited substances;
c) rejection or acceptance attitudes towards prohibited substances use;
d) the reasons for which the athlete may assume the risk of using prohibited substances;
e) proximity social environment (sport group, teammates) and mass-media factors that may influence subjects’ attitudes towards doping;
f) suggestions for athletes and their entourage education for rejecting doping;
g) self-references to prohibited substances use and its consequences.

When reported to our “model”, theoretically speaking, the following may be relational: attitudes, information, decision and the influence of the entourage. Let us presuppose that the investigated ones lived the sport specific situations and this may be seen in the content of their answers to the analyzed items.

The interpretation of the results was performed based on the components of the theoretical model of risk factors and we started from the attitudes revealed by the questionnaire for athletes. These attitudes were analyzed differently based on the categories of athletes and their results. To reveal the risk factors for the prohibited substances’ use, the athletes’ answers were also reported to people admitting the use or the temptation to use prohibited substances. Aiming to characterize the population more exposed to the risk of use, personality features or manifestations of the feelings in a due moment were revealed in athletes outside the average of the group. These features and current (spontaneous) psychical states were divided and described by the aid of the personality questionnaires (Chapter 5A).

## The athletes’ information level

*The athletes’ information level* in what doping phenomenon concerns was established by the following means:

*1. The athletes know about the Prohibited List*

- *The athletes know about the Prohibited List*

The analysis of the answers revealed that 86.6% (1216) of the subjects know there is a prohibited list (Diagram no. 30).

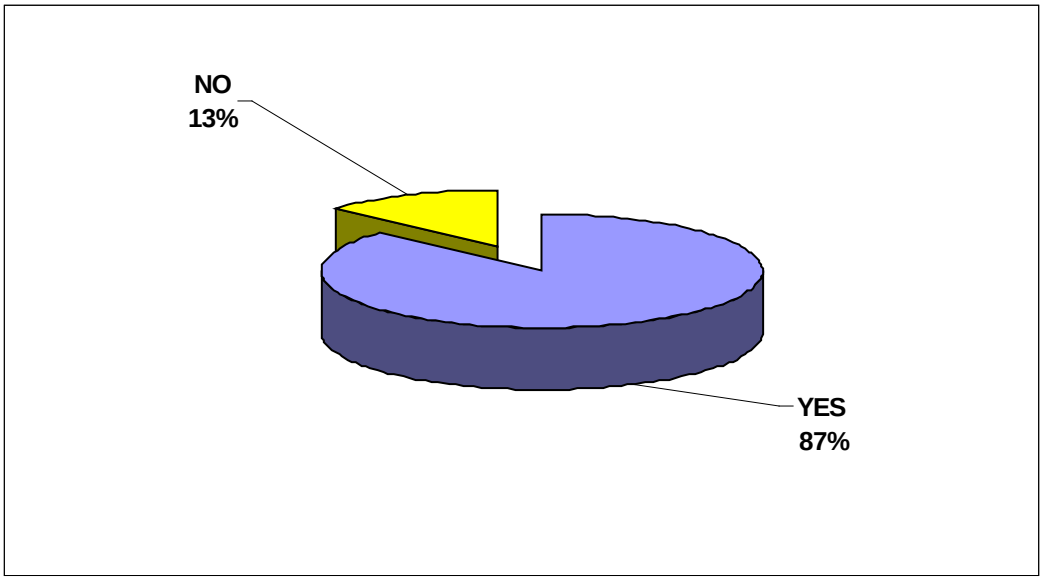



**Diagram no. 30 – The athletes know about the Prohibited List**

81% (115) of the athletes (10.11% - 142 athletes) who used or still use prohibited substances or methods know the Prohibited List. From the ones stating they used or would use prohibited substances or methods (144), 118 athletes know what prohibited list is, while 26 are tempted to keep on using them.

The number of athletes who know the prohibited list but in the same time they are still tempted to use prohibited substances is 67 (19 juniors and 48 seniors). The number of seniors is significantly different than the one of juniors (x=12.7, la p=0.05).

Within the same group, the number of athletes (41 athletes - (61.2%) with increased values of pressure factors (x=7.90, la p=0.05) is significantly different of the athletes with values below the average of the group. The same with the athletes with values above average on the depression factors (38 athletes, meaning 56.7%) (x=9.24, la p=0.05) who are more than the ones with values of the depression below the average.

In the same time, 35 athletes (15 juniors and 20 seniors) out of 67 have other results than the first three places in national and international competitions.

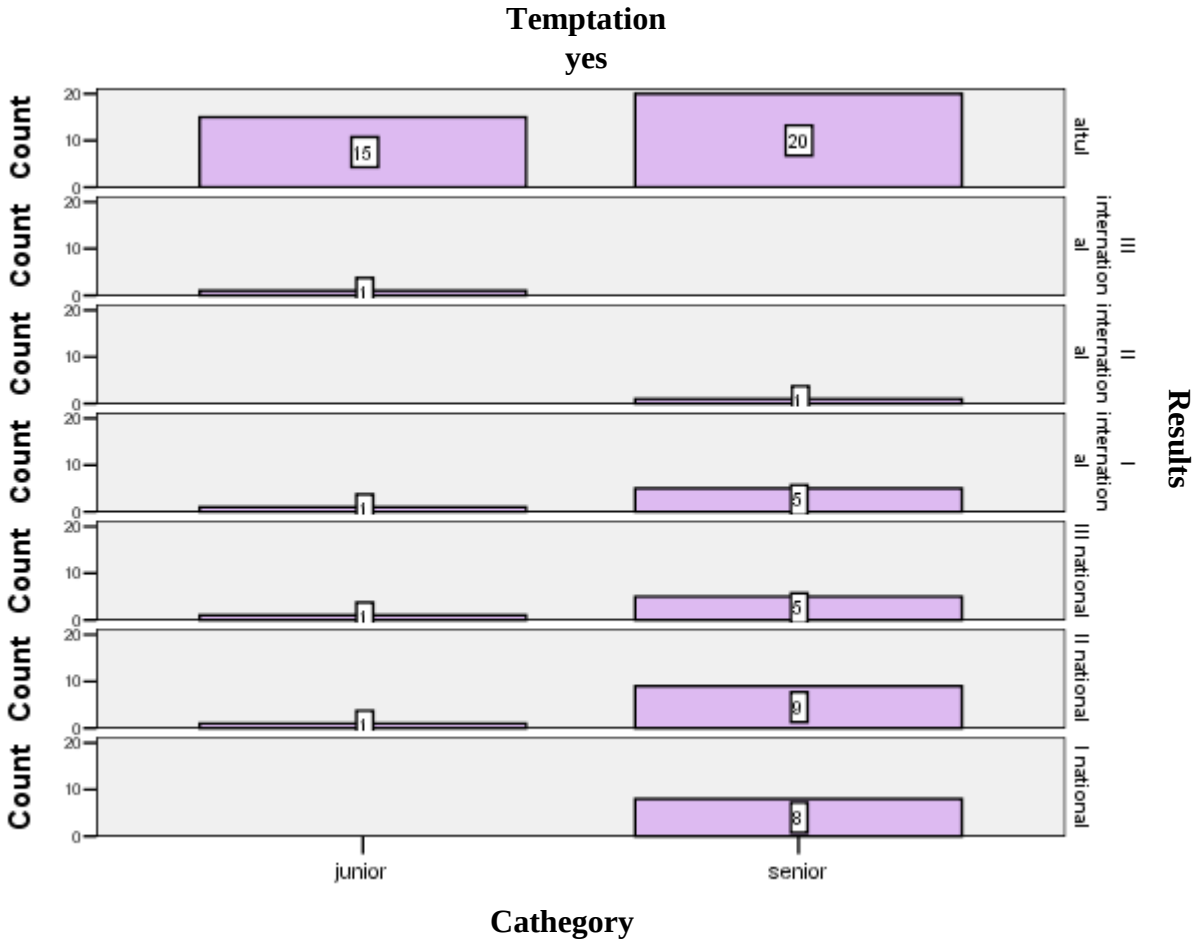



**Diagram no.31 – Distribution of people knowing about Prohibited List's answers, based on category, results and the temptation to use prohibited substances**

Out of the athletes who do not know about the list (13.4%), 21 are tempted to use prohibited substances, 10 juniors and 11 seniors. The difference between juniors and seniors' number is not significant p=0.05 (x=3.36)

Out of the athletes who are tempted to continue the use of prohibited substances although they are aware the substances are prohibited, 6 athletes use such substances (all of them seniors), 5 had used (4 juniors and 1 senior) and 20 persons would use in the future (4 juniors and 16 seniors) (Diagram no.32)

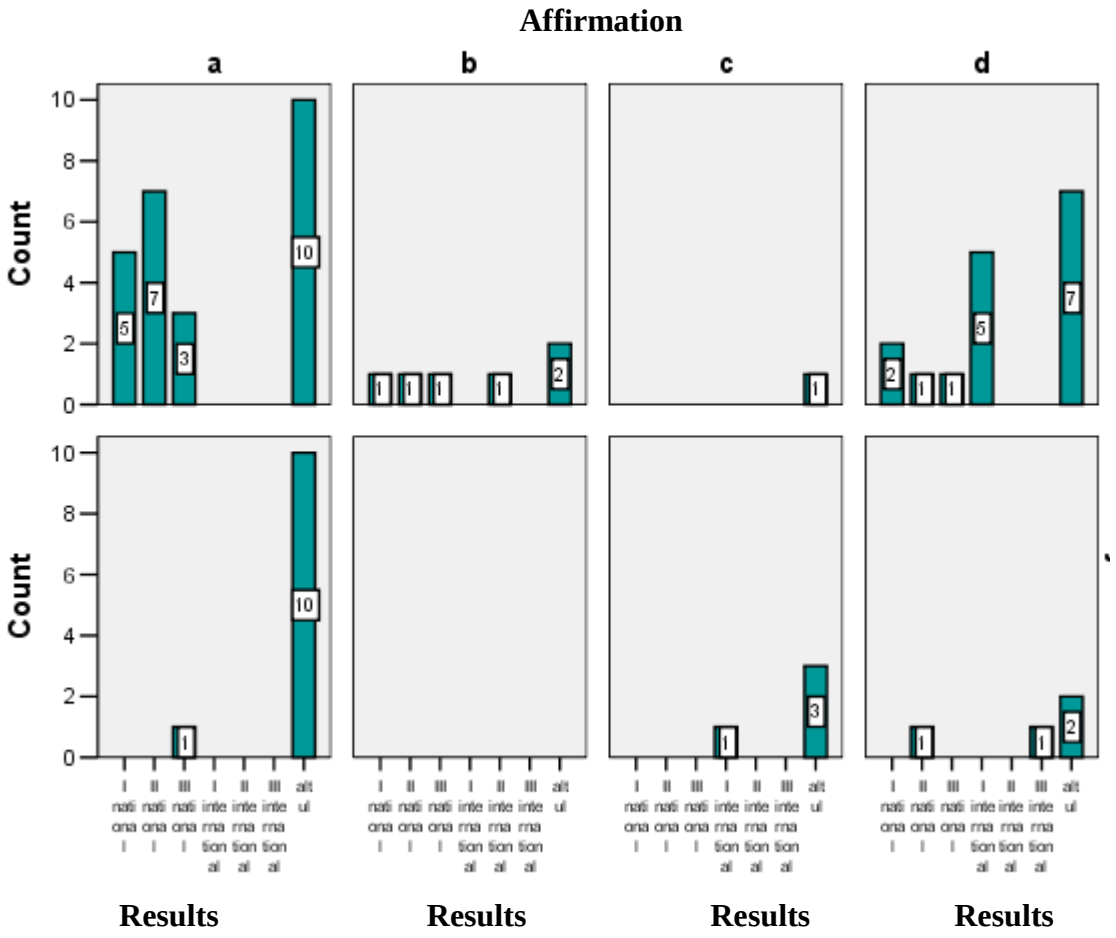



**Diagram no. 32 – Distribution of the athletes who know about the prohibited list and are tempted to become users' answers, based on category, results and the statement of having used or not prohibited substances**

As for the personality features, these athletes are framed in the profile of the group. As for the spontaneous psychical states, these athletes registered values above the group's average on pressure factors (18 athletes – 11 juniors, 7 seniors) and depression (15 athletes – 8 juniors, 7 seniors), but also fatigue (14 athletes – 8 juniors, 6 seniors) and confusion (14 athletes - 9 juniors, 5 seniors).

*Despite the fact the prohibited list is known, the seniors with pressure-anxiety states and enforced depression, especially by the lack of results are more tempted to use prohibited substances.*

- *The athletes know about the sanctions in case of prohibited substances or methods' use*

Out of 1404 subjects, 93,4% (1311) say they know they would be sanctioned if they use prohibited substances or methods (Diagram no.33).

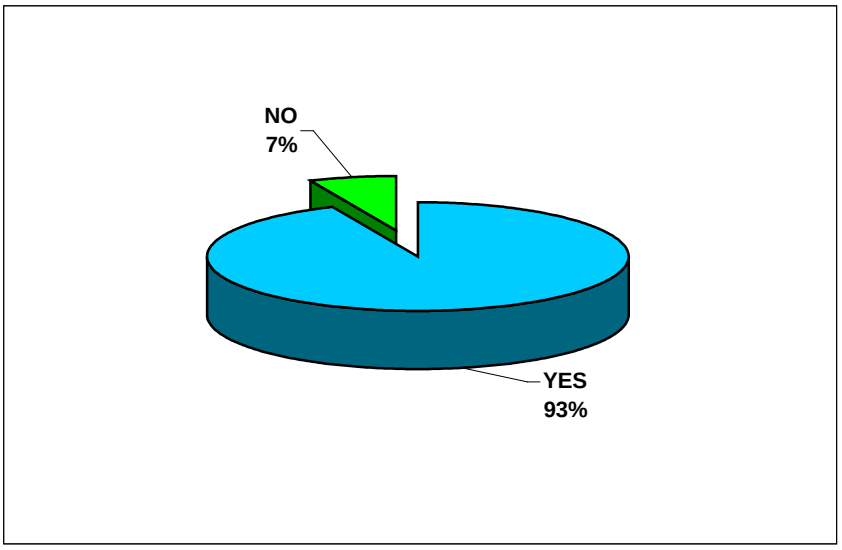



**Diagram no. 33 – The athletes know about the sanctions in case of prohibited substances or methods' use**

Out of the athletes who know they would be sanctioned if they use prohibited substances, 69 (21 juniors and 48 seniors) state they are tempted to use such means. The numerical difference between the two categories of athletes is significant p=0.05 (x=12.58). As the diagram no.34 shows, most of the athletes, no matter the category, do not have noticeable results.

**Diagram no.34 – Graphic representation of the athletes who know about the sanctions and are tempted to use doping substances, based on the results and category**

The same as in the case of the previous item, we notice that out of this category of respondents 42 athletes (12 juniors and 30 seniors) show values for pressure above the group's average while 37 athletes (11 juniors, 26 seniors) show greater values of depression.

The number of the athletes who do not know about the sanctions but would be tempted to use is 19 (9 juniors, 10 seniors). The insignificant difference between the two categories (la p=0.05, x=3.06), allow us to state there is an equal risk of use in the ones who do not know about the sanctions.

In relation with the group's average, these athletes feel more pressure (17 athletes – 9 juniors, 8 seniors), more depression (16 athletes – 7 juniors, 9 seniors), and a higher level of confusion (13 athletes – 8 juniors, 5 seniors) and are less preoccupied by their public image (12 out of 19 athletes, 6 seniors and 6 juniors). No significant differences between the categories of athletes were identified.

Consequently, we state that not knowing the sanctions is equally a risk factor for both categories of athletes especially for those with weak results, who are more tempted to become prohibited substances' users.

Out of the athletes who know the sanctions and are tempted to use prohibited substances, 7 senior athletes use prohibited substances now, 8 (7 juniors and 1 senior) used them and 19 athletes (4 juniors, 15 seniors) might use them in the future. (Diagram no. 35)

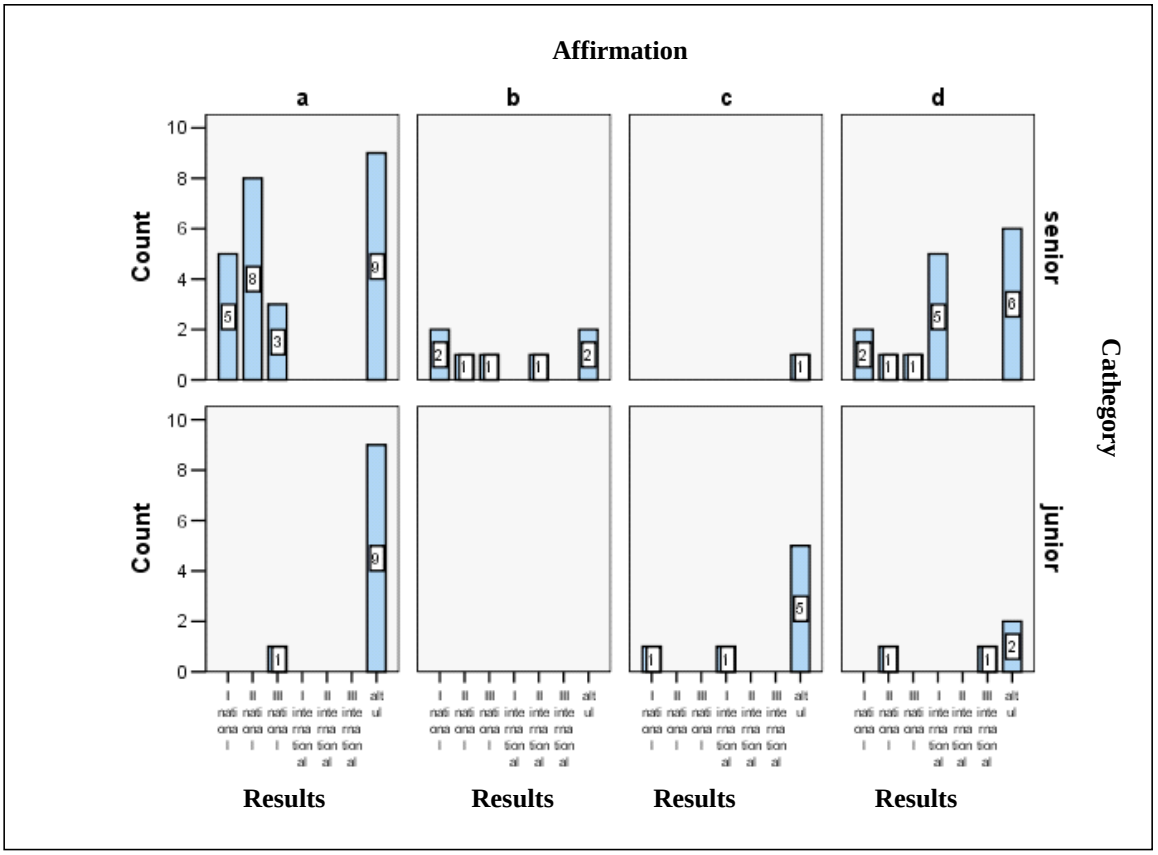



**Diagram no.35 – Graphic representation of the athletes who know about the sanctions and state they use prohibited substances, based on results and category**

Among them there are athletes with results in the first three places in national and international competitions. Personality features and the ones related to spontaneous psychical state do not make them different from the average of the investigated pattern.

*No matter the sport category, the subjects with other results than the three places in national and international competitions, characterized by pressure and depression, despite the fact they know about the sanctions, this would not stop them from using prohibited substances or methods. The athletes take this risk fully aware.*

- *Source of information*

77.6% (1089) said they received information about the doping phenomenon in sport from their coaches, 52.8% (741) found out from the doctor or other

member of the technical team, 53.5% (751) from mass-media, while for 49.6% (696) the internet is the source of information, 38.4% (539) stated they got informed by brochures, booklets, 29.2% (410) by educational actions, 35.3% (496) by their friends and 48.4% (680) by other athletes. (Diagram no. 36)

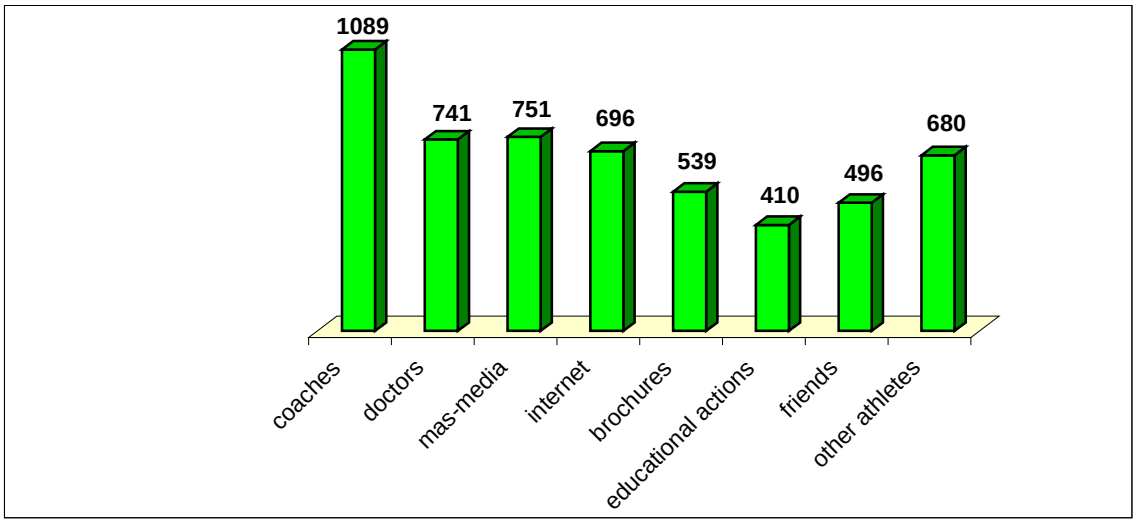



**Diagram no. 36 – Source of information**

The athletes' answers revealed the coach is the main source of information, thus he might become a risk factor, as his attitudes favorable to doping substances' use are transferred to his students.

*This answers show that the educational actions should address the coaches because both juniors and seniors trust the coach.*

- *The usefulness of the information*

For 49.7% (698) of the athletes the information related to doping is very useful, for 25.8% (362) it is useful, for 13.3% (187) it is indifferent, for 5.9% (83) are rather useless and for 5.3% (74) it is useless. (Diagram no.37 )

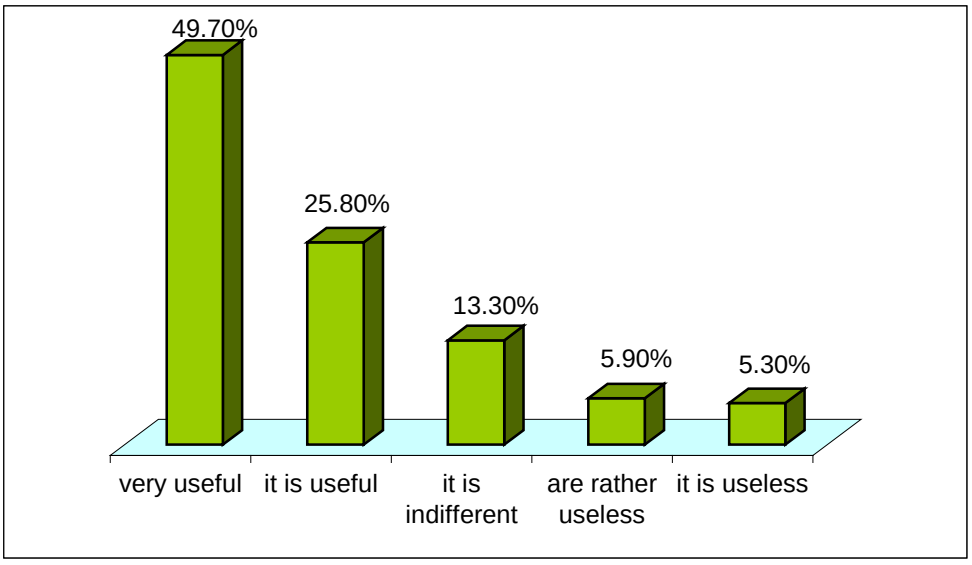



**Diagram no. 37 – The usefulness of the information**

We underline the fact that 85% of the ones who need information are the ones who are not tempted to use prohibited substances and 91% will never use. At the opposite pole, here are the athletes who think the information's usefulness is very low (157 athletes) say they would be tempted to use prohibited substances in the future (13%) or would even use (14%).

Out of the athletes who think the information on doping substances is very useful and useful, 43 athletes (12 juniors, 31seniors) are still tempted to use doping. 25 athletes show values of pressure above the average of the group (10 juniors, 15 seniors), while 23 of them (9 juniors, 14 seniors) show values of the depression factor above the average of the group. No significant differences (Diagram no. 38) were shown by applying the signification test (square x) of the difference between the averages of the two groups, juniors and seniors, on these factors.

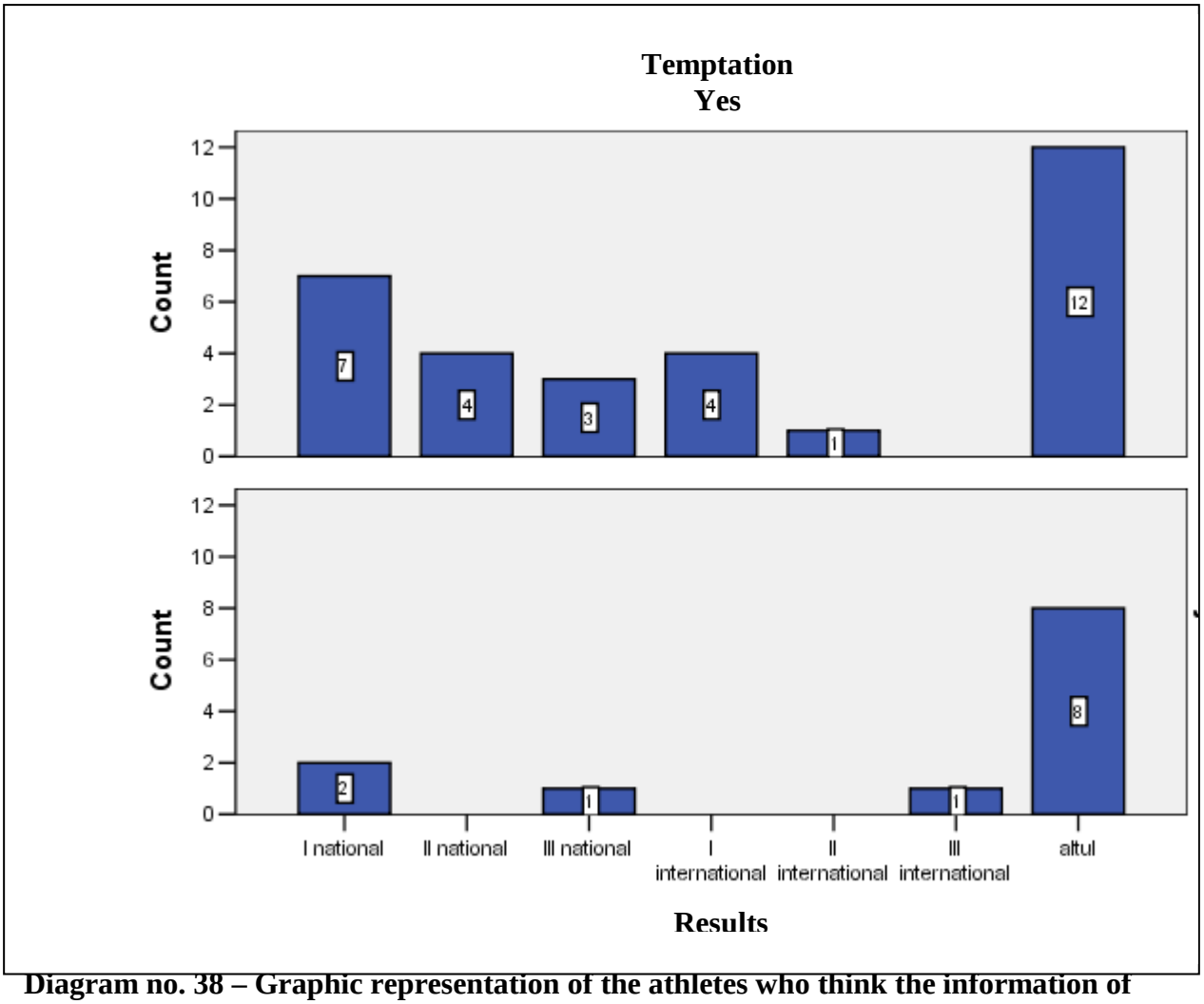



**Diagram no. 38 – Graphic representation of the athletes who think the information of doping is useful and are tempted to use prohibited substances, based on the result and category**

Most of the athletes in such a situation (13 athletes out of 23) haven't had important results in national and international competitions (Table no. 16)

| temptation | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| Yes | result | I national | 2 | 7 | 9 |
| | | II national | 0 | 4 | 4 |
| | | III national | 1 | 3 | 4 |
| | | I international | 0 | 4 | 4 |
| | | II international | 0 | 1 | 1 |
| | | III international | 1 | 0 | 1 |
| | | other | 8 | 12 | 20 |
| | Total | | 12 | 31 | 43 |

**Table no. 16 – Crosstabulation result * category * temptation**

At the same time, it can be noticed that 24 athletes state that they used, are using or shall use this kind of substances. (Diagram no.39)

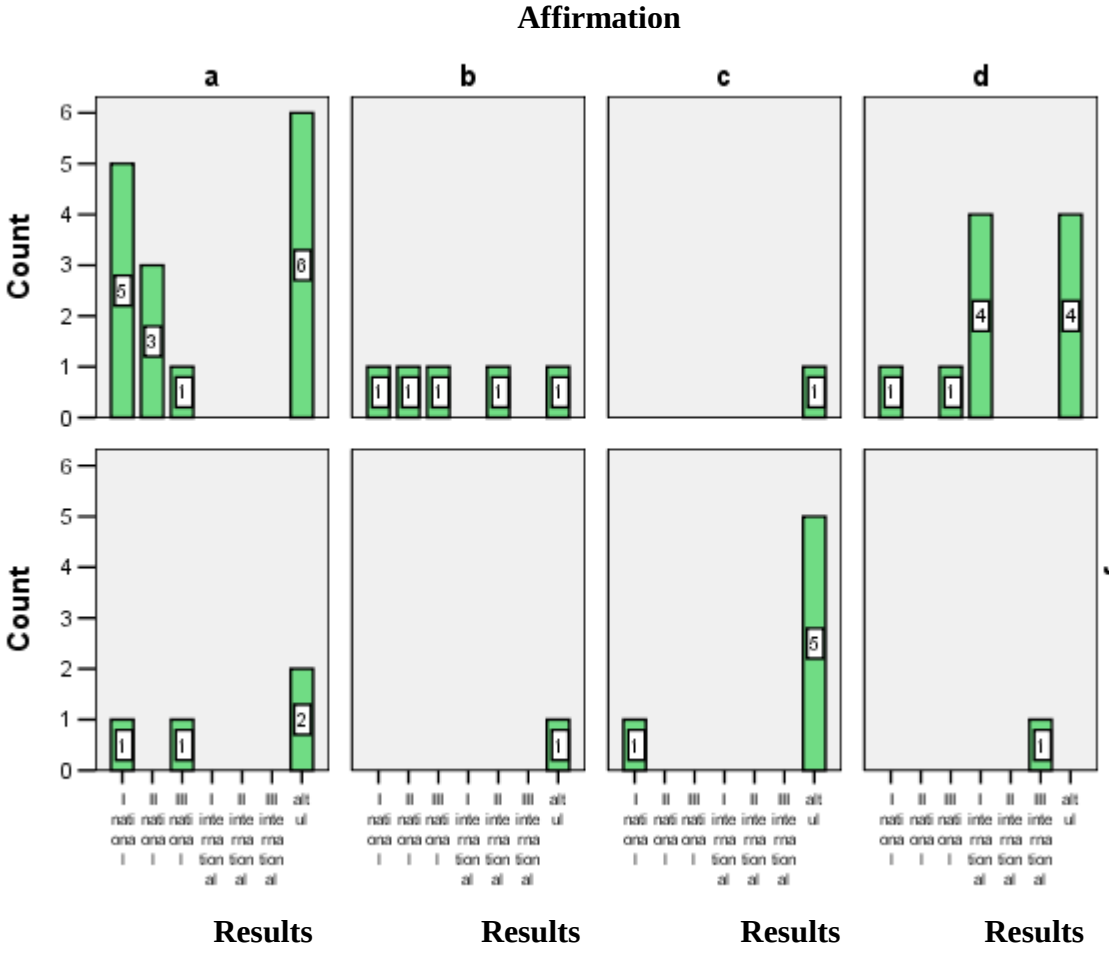



**Diagram no. 39 – Graphic representation of the athletes who think the information of doping is useful and the affirmation, based on the result and category**

As we can see from the Table no. 17 most of the athletes who declared to use substances, are senior athletes.

| Affirmation | | | Category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| A | result | I national | 1 | 5 | 6 |
| | | II national | 0 | 3 | 3 |
| | | III national | 1 | 1 | 2 |
| | | other | 2 | 6 | 8 |
| | Total | | 4 | 15 | 19 |
| B | result | I national | 0 | 1 | 1 |
| | | II national | 0 | 1 | 1 |
| | | III national | 0 | 1 | 1 |
| | | II international | 0 | 1 | 1 |
| | | other | 1 | 1 | 2 |
| | Total | | 1 | 5 | 6 |
| C | result | I national | 1 | 0 | 1 |
| | | other | 5 | 1 | 6 |
| | Total | | 6 | 1 | 7 |
| D | result | I national | 0 | 1 | 1 |
| | | III national | 0 | 1 | 1 |
| | | I international | 0 | 4 | 4 |
| | | III international | 1 | 0 | 1 |
| | | other | 0 | 4 | 4 |
| | Total | | 1 | 10 | 11 |

**Table no. 17 – Cross-tabulation result * category * affirmation**

The athletes considering that the doping information has low utility and they are tempted to appeal to such methods of artificially increasing their performance are about 18 (9 juniors and 9 seniors). Most of them – 12 athletes, present over average values for tension and depression. The differences between seniors and juniors are not significant at p=0.05. Among the 18 athletes, only 4 of them state that they were or they will be users.

*The athletes having other results than the first three in national and international competitions, seniors or juniors, and with over average results for tension and depression factors are tempted to use prohibited substances even if they consider the doping information as useful.*

2. *The motives' system* is illustrated through:
   - *Motivational orientation towards sport practice:*

62,8% (882) of the 1404 subjects practice sport for health, 47,2% (662) for action, 41,1% (577) for material earnings, 39,7% (558) for being noticed, 39,7% (557) for becoming stronger and 22,8% (320) for traveling. (Diagram no. 40)

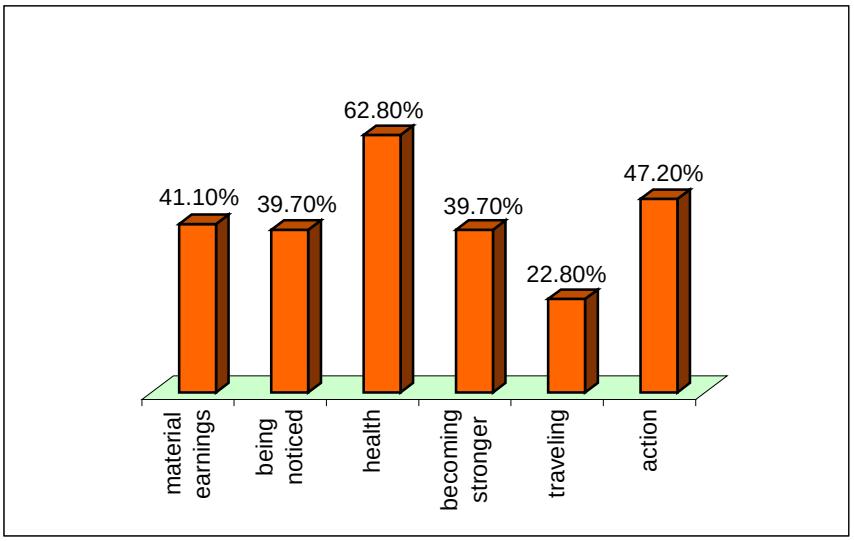



**Diagram no. 40 – Motivational orientation towards sport practice**

The number of athletes with material earnings orientation and tempted to use prohibited substances are about 45 (20 juniors and 25 seniors). The insignificant difference between them doesn't allow us to analyze the attitudes by reporting to category. (Diagram no. 41)

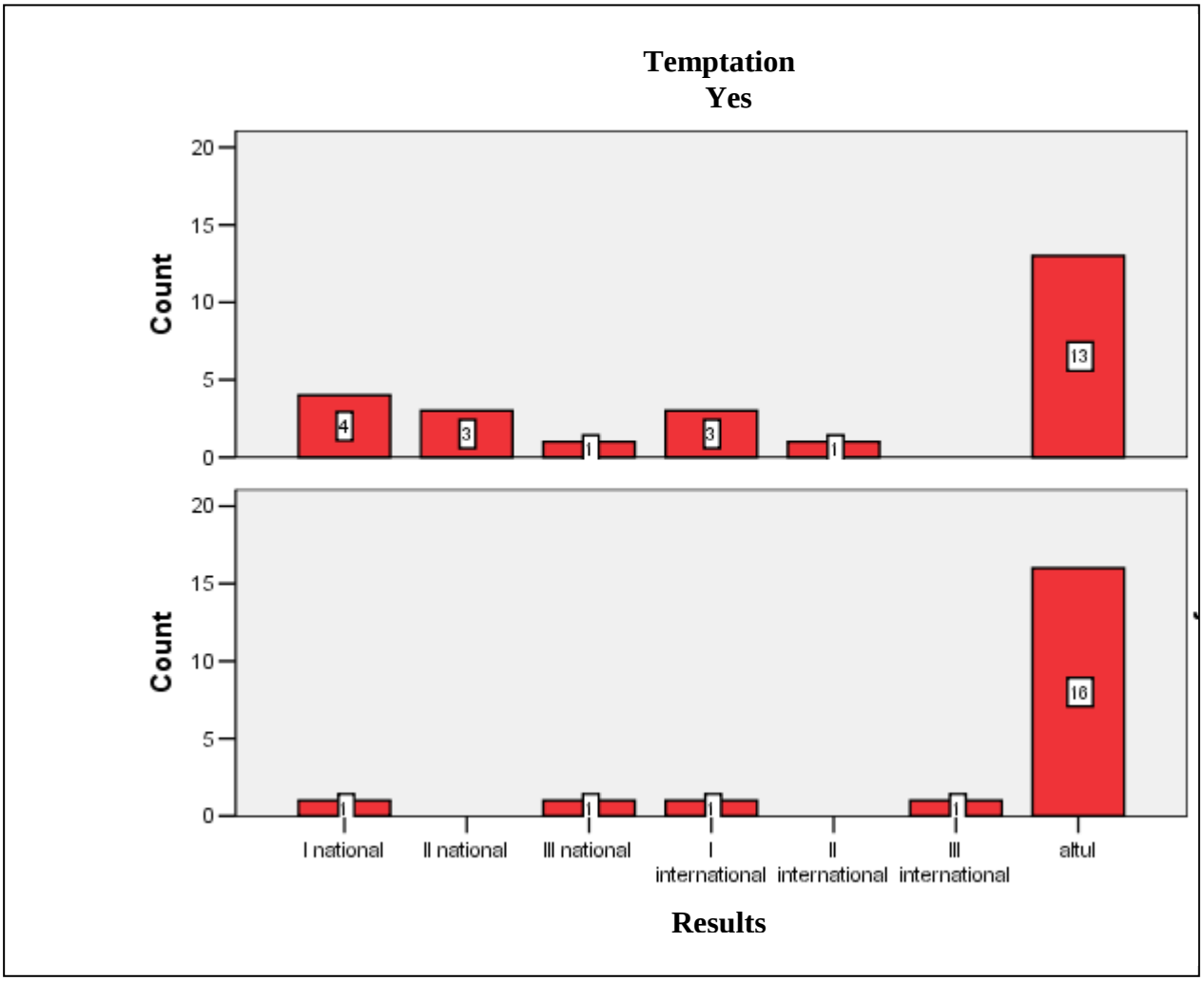



**Diagram no. 41 – Schema with the external motivated athletes, who are tempted to use doping substances, depending on the result and category**

Out of the 25 athletes stating that they are, they were or they might become prohibited substances' users, we can notice that most of them are seniors (15 subjects, 11 of them having other results than the first three places). (Diagram no.42).

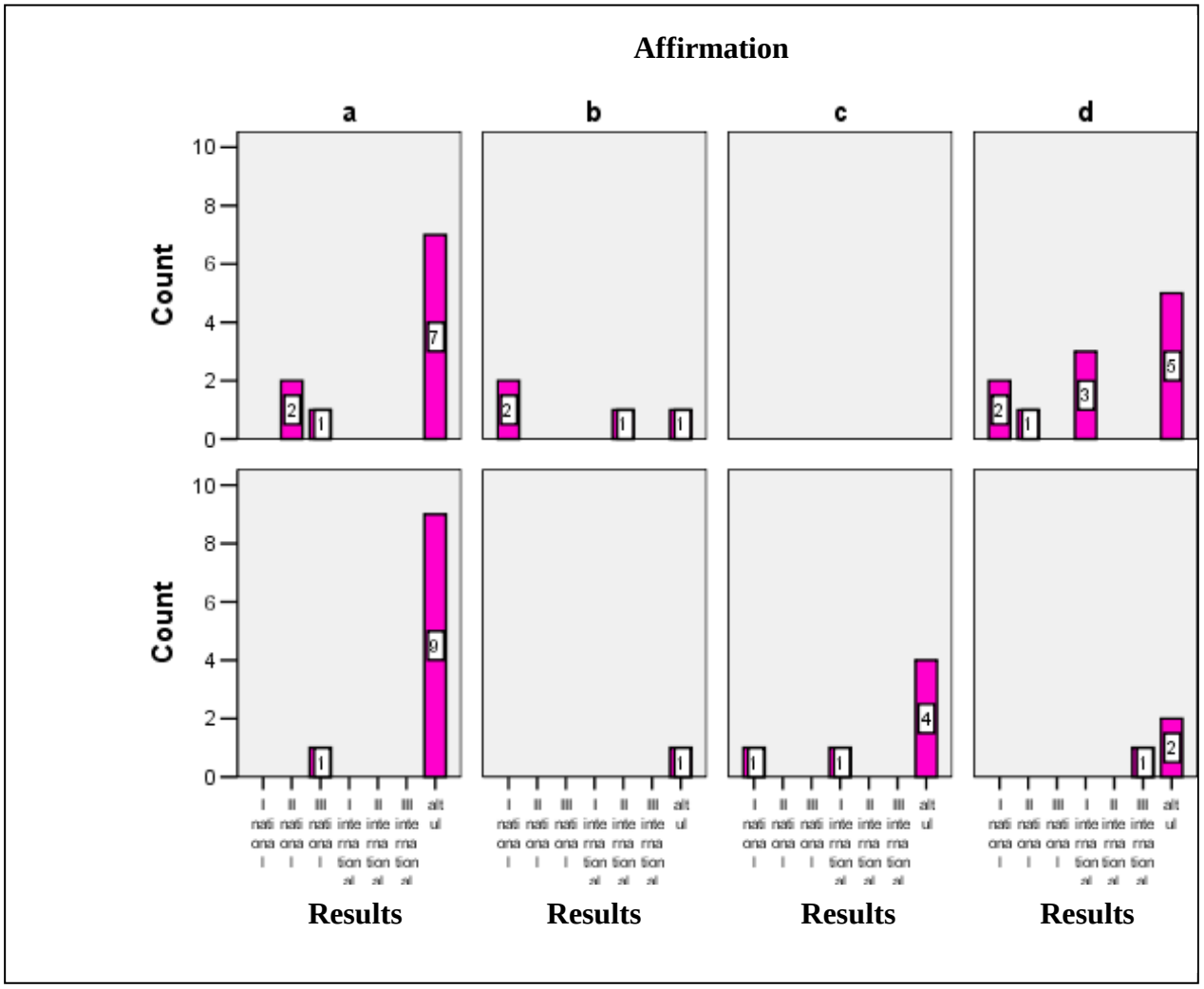



**Diagram no. 42 – Schema with the external motivated athletes, declaring to use doping substances, depending on the result and category**

Out of the 45 athletes orientated towards material earnings and tempted to use substances, 36 athletes (80%) had over average scores for Anger-Hostility factor, but the differences between seniors and juniors are not significant at p=0.05 (x=4.50), and the same are the differences between the results achieved by the athletes included in this group.

Out of 41,1% athletes orientated towards material earnings, 66% had high score on Anger, from psychic states point of view. Out of this percentage, 56% are seniors and 43% are juniors (among which 68% had higher scores on Anger-Hostility). For those without significant results (69,4%) and for those placed on the 1st position in national championships (67,4%), the moment states associated to anger are more frequent.

In the case of those oriented towards material earnings and higher tension states, 56% are seniors and 44% are juniors. These athletes are those who didn't achieve significant results, but also those placed on the first three positions in international championships; they are also athletes using or who had use recently such substances.

Out of the 39,7% athletes (557) motivated to practice sport by the need to be noticed, only 33 athletes are also tempted to use prohibited substances and among these ones, 22 athletes present high values on Tension factor. The differences between the junior athletes (11) and the senior ones (22) are not significant on p=0.05, but it can be still noticed the increased number of athletes with "other results". (Diagram no. 43)

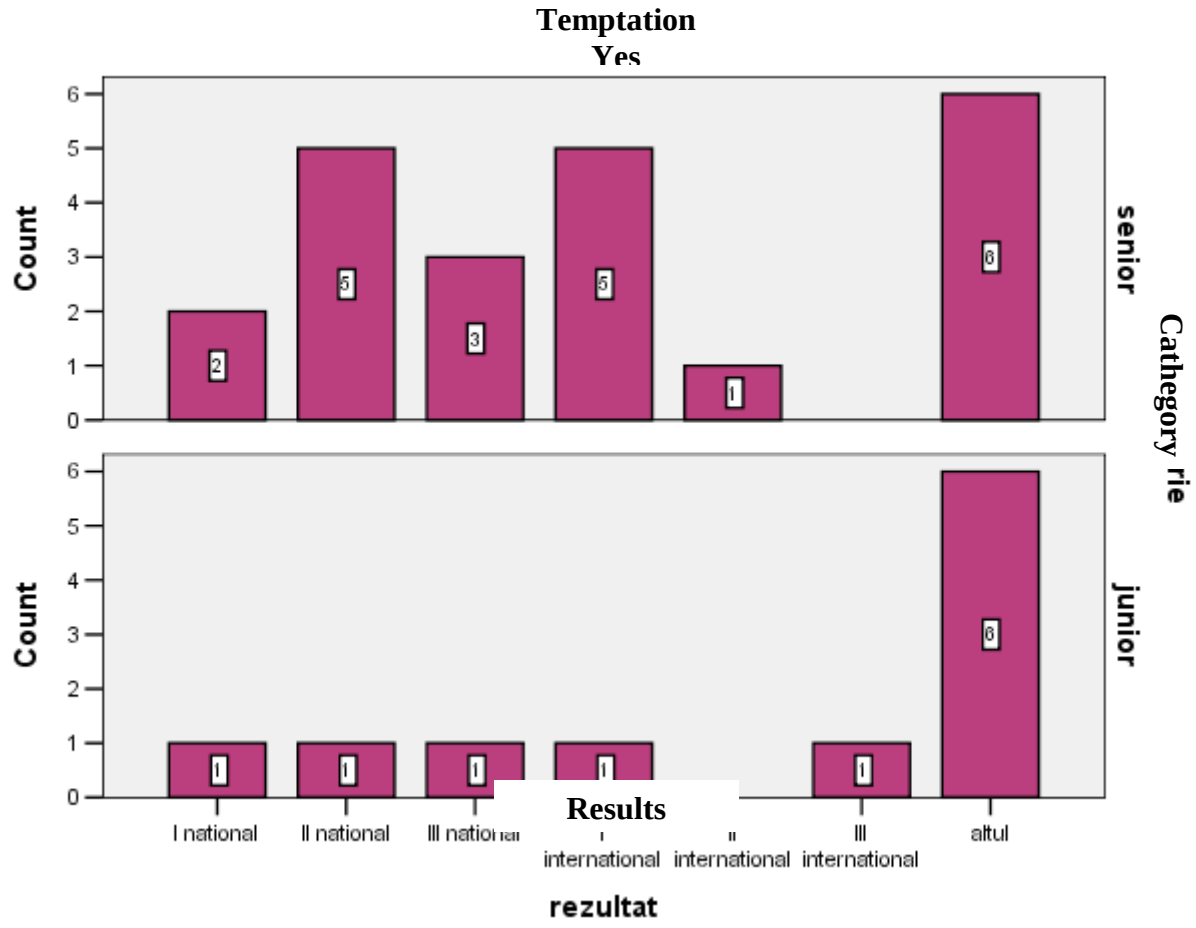



**Diagram no. 43 – Schema with the internal motivated athletes, stating to be tempted to use doping substances, depending on the result and category**

Out of this category of athletes, 15 of them declare that they used or are using prohibited substances, among them being 6 juniors and 9 seniors. Most of them – 12 athletes have different results that the first three positions in national or international championships. (Diagram no. 44)

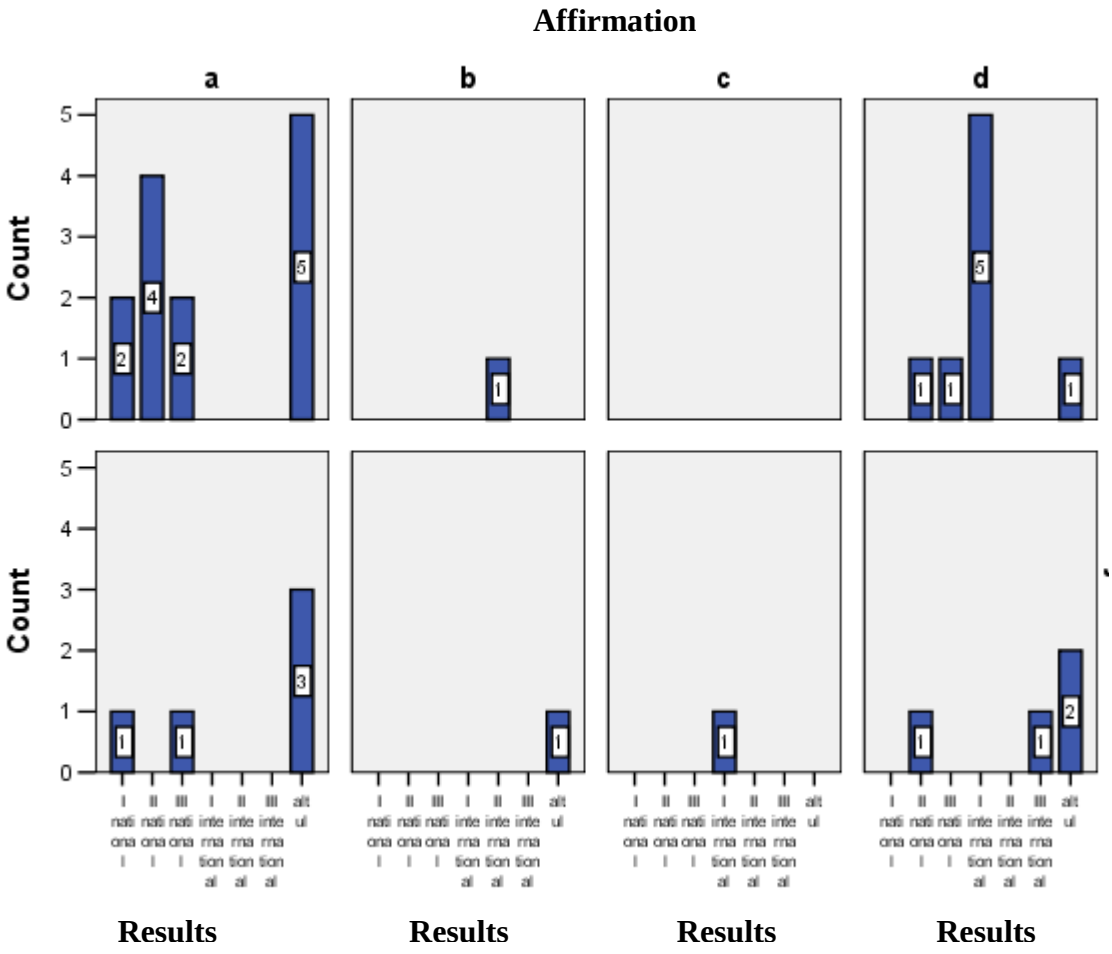



**Diagram no. 44 - Schema with the internal motivated athletes declaring to use prohibited substances, depending on the result and category**

Among the investigated athletes, 39,7% (557) answered that they practice sport to become stronger and 40 of them are tempted to use prohibited substances. The analysis of the moment psychic states underlines the fact that these athletes are included in the group average, except for the tension (23 athletes) and depression (21 athletes) states, where over average values are met. The differences between the number of the junior and senior athletes, for p=0.05 are not significant. (Diagram no.45)

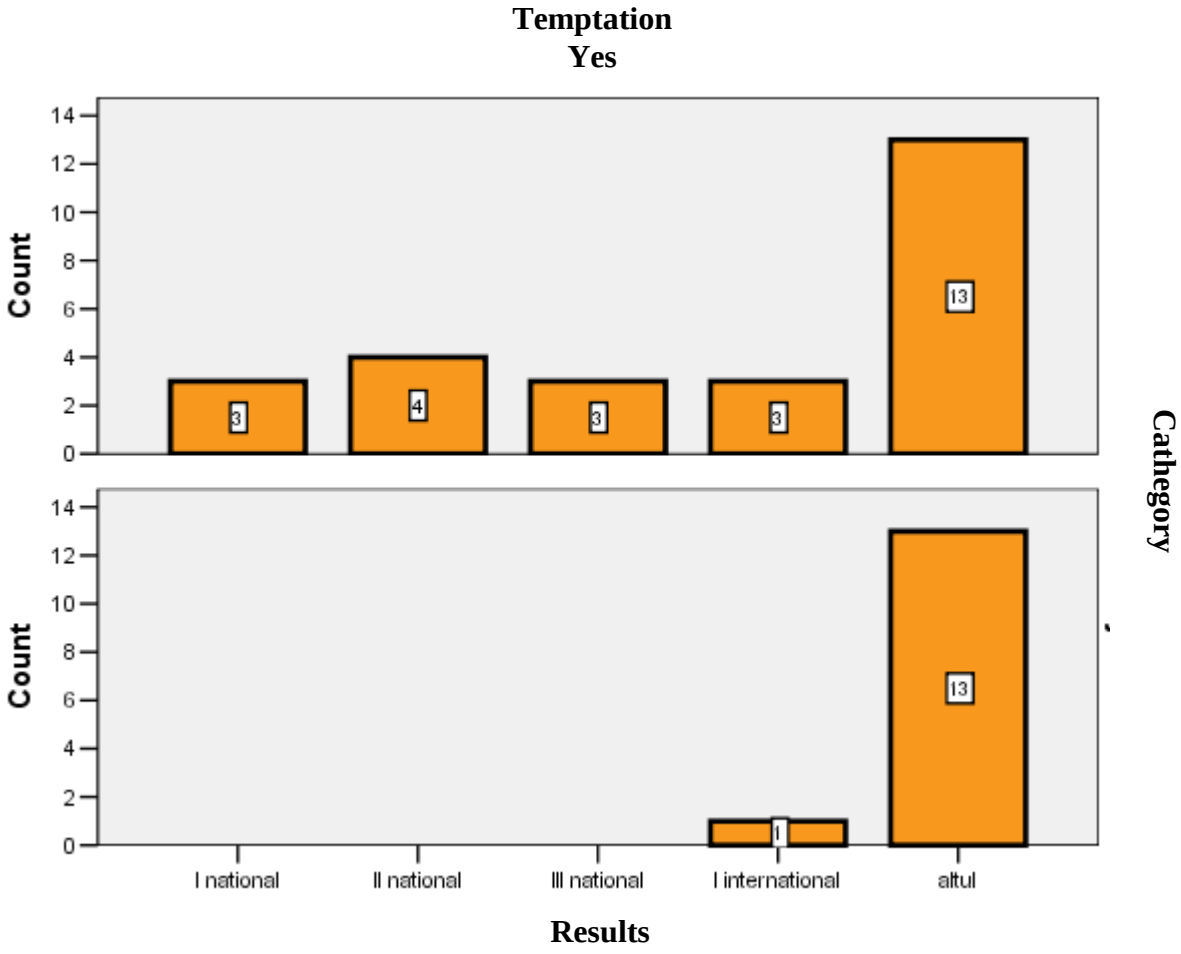



**Diagram no. 45 – Result and category depending schema with the athletes eager to become stronger by practicing sport and tempted to use prohibited substances**

According to the results achieved, 26 athletes of this category have “other results” in competitions.

21 athletes (7 juniors and 14 seniors) declare that they were or might become prohibited substances users. It can also be noticed here that most of the athletes (12) don’t have results in the first three positions in competitions. (Diagram no. 46)

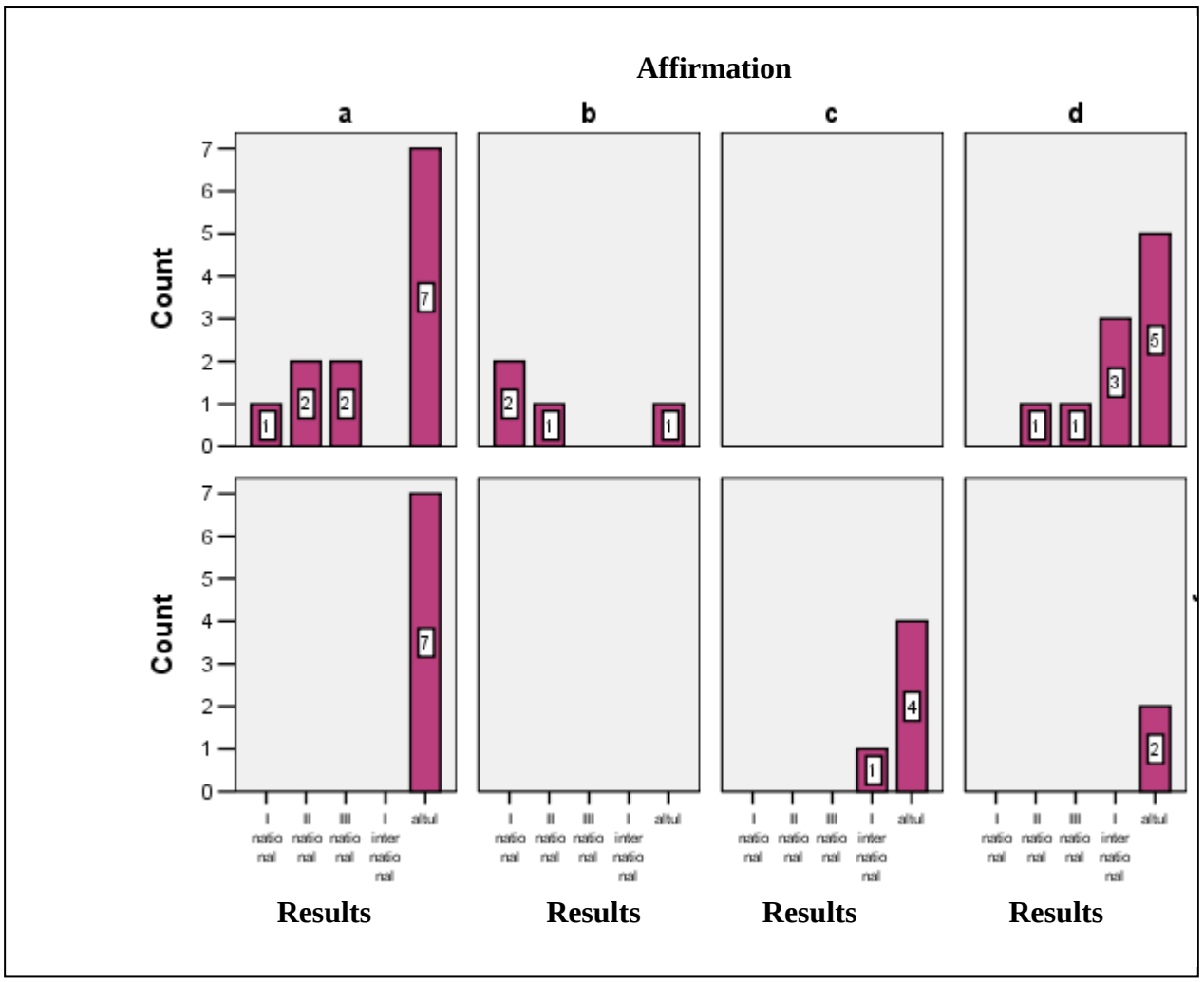



**Diagram no. 46 – Result and category depending schema with the athletes eager to become stronger by practicing sport and declaring their use of prohibited substances**

*The athletes externally motivated to practice sport, who present anger-hostility states with over average values, as well as those internally motivated to practice different sport disciplines, who have over average tension-depression values are tempted to use prohibited substances more that other athletes.*

*The use of doping substances can be the consequence of an external motivational orientations associated with the tension-anxiety states or internal motivational orientations associated with the moment states of anger-hostility or depression-dejection.*

- *Result achieving orientation*

Out of the 1404 athletes, 45,7% (642) want to become national champions, 21,3% (299) want to be ranked on the first 6 positions on national level, 27,1%

(380) want to be European champions, 38,2% (536) World champions and 25,6% (360) Olympic champions, while 17,8% (250) want to be in the first 6 athletes on international level. (Diagram no. 47)

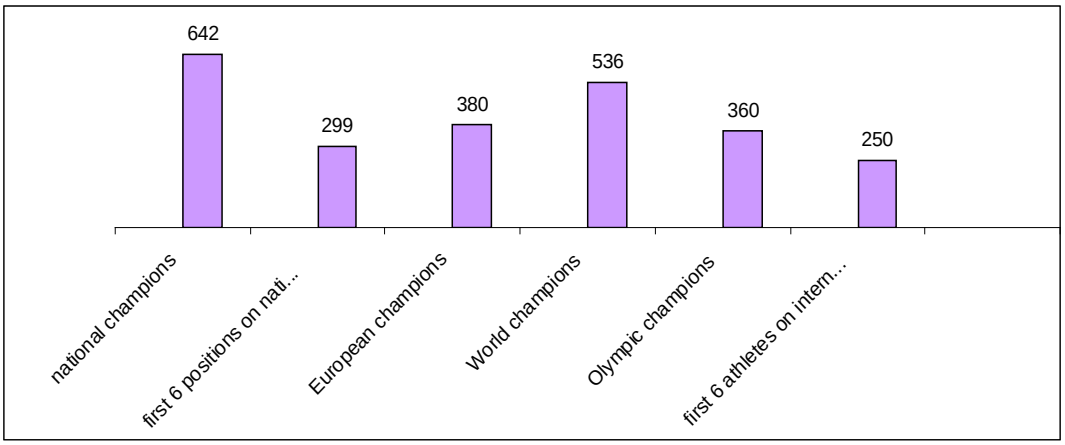



**Diagram no. 47 – Result achieving orientation**

88 athletes (30 juniors and 58 seniors) would be tempted to use prohibited substances. Among them, only 39 declare that they will do this in the future, have done this in the past or are doing now. Among them, 19 athletes want to become national champions, 10 International champions, 16 European champions, 18 World champions and 10 Olympic champions. (Table no. 18)

| **Desired position** | National champion | International champion | European champion | World champion | Olympic champion |
|---|---|---|---|---|---|
| **Number of athletes** | 19 | 10 | 16 | 18 | 10 |

**Table no. 18 – Result achieving orientation for the athletes who are tempted to use prohibited substances**

Most of the athletes don't have significant results in national and international competitions. The analysis of the values of the momentary psychic states' highlights over-average values for tension (25 athletes), depression (22 athletes), and fatigue (20 athletes). Even if the differences between the athletes' number, as well as between the seniors and juniors are not significant, we still underline the tendency of the athletes who declare to be tempted to use prohibited substances and to score over-average values for the previously mentioned psychic factors.

*Those aspiring to the highly ranked positions and presenting psychic states – tension, depression, fatigue over the population's average are more tempted to use prohibited substances than those already well-known.*

- *The expected aspiration level (aspiration level)*

7,4% (104) of the subjects are very satisfied with the performance level that they have reached in comparison with the intended level, 36,5% (512) are satisfied, 38,2% (536) are not sure, 14,7% (206) are not satisfied and 3,3% (46) are extremely unsatisfied. (Diagram no. 48)

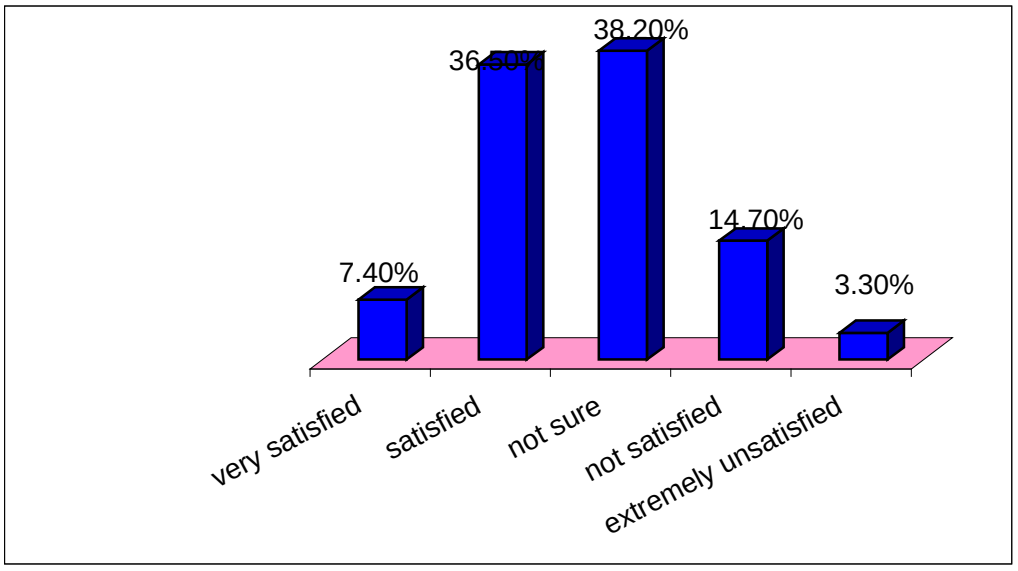



**Diagram no. 48 – Aspiration level**

Most of the athletes – 38.2% (536 subjects) are not sure about the satisfaction provided by the results achieved until that moment. For 33 of them, the answer to the question regarding the temptation to use prohibited substance was affirmative.

High over-average values are registered on tension (21 athletes), depression (21 athletes), and fatigue (19 athletes). There are no significant values between the junior and the senior athletes for p=0.05. (Tables no. 21)

| **Result** | | | Category | | Total |
|---|---|---|---|---|---|
| | | | Junior | Senior | |
| I national | DEPRESSION | lowerdepression | 0 | 2 | 2 |
| | | higherdepression | 1 | 3 | 4 |
| | Total | | 1 | 5 | 6 |
| II national | DEPRESSION | lowerdepression | | 1 | 1 |
| | Total | | | 1 | 1 |
| III national | DEPRESSION | lowerdepression | 0 | 2 | 2 |
| | | higherdepression | 1 | 1 | 2 |
| | Total | | 1 | 3 | 4 |
| I international | DEPRESSION | lowerdepression | 0 | 1 | 1 |
| | | higherdepression | 1 | 0 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| | Total | | 1 | 1 | 2 |
| Other | DEPRESSION | lowerdepression | 3 | 3 | 6 |
| | | higherdepression | 7 | 7 | 14 |
| | Total | | 10 | 10 | 20 |

**Table no. 19 – Relation between the depression values and the athletes' results and category**

| TENSION | | | Category | | Total |
|---|---|---|---|---|---|
| | | | Junior | Senior | |
| lowertension | result | I national | 0 | 3 | 3 |
| | | III national | 0 | 2 | 2 |
| | | I international | 1 | 1 | 2 |
| | | other | 2 | 3 | 5 |
| | Total | | 3 | 9 | 12 |
| highertension | result | I national | 1 | 2 | 3 |
| | | II national | 0 | 1 | 1 |
| | | III national | 1 | 1 | 2 |
| | | other | 8 | 7 | 15 |
| | Total | | 10 | 11 | 21 |

**Table no. 20 – Relation between the tension values and the athletes' results and category**

| FATIGUE | | | Category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| lowerfatigue | Result | I national | 0 | 4 | 4 |
| | | II national | 0 | 1 | 1 |
| | | III national | 0 | 2 | 2 |
| | | I international | 1 | 0 | 1 |
| | | Other | 4 | 2 | 6 |
| | Total | | 5 | 9 | 14 |
| higherfatigue | Result | I national | 1 | 1 | 2 |
| | | III national | 1 | 1 | 2 |
| | | I international | 0 | 1 | 1 |
| | | Other | 6 | 8 | 14 |
| | Total | | 8 | 11 | 19 |

**Table no. 21 – Relation between the fatigue values and the athletes' results and category**

As it can be seen in the previous tables, most of the athletes have other results than the first three positions in national or international competitions.

The number of athletes who are discontent and very discontent by their performance up to the present moment is 252 (18%), out of them 82 juniors and 170 seniors. 21 athletes within this category are the ones saying they are tempted to use prohibited substances, while 10 athletes state they already use or will use the prohibited substances. (Diagram no. 49)

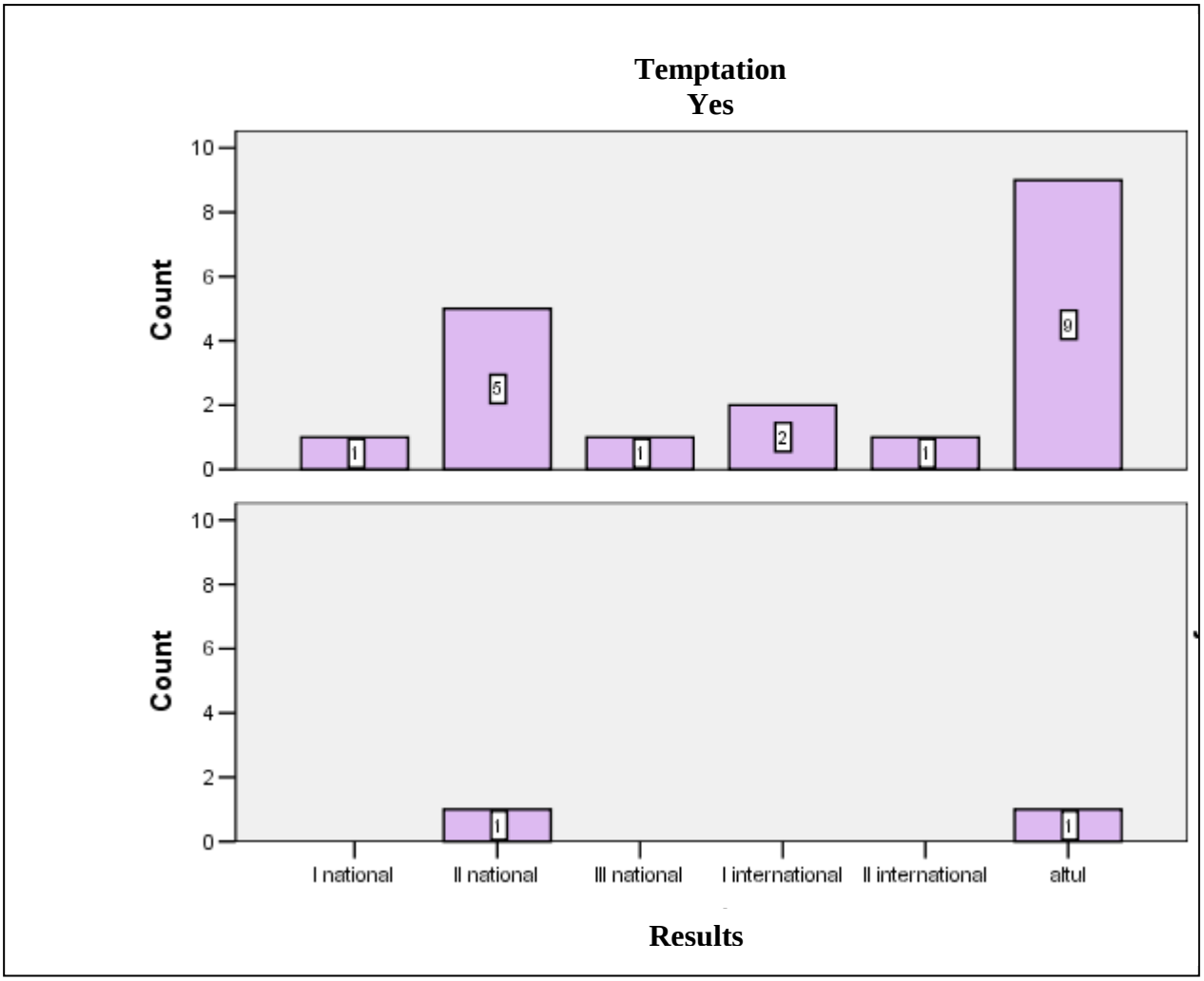



**Diagram no. 49 – The relation between the category of athletes, their results and discontents with regard to the performances obtained up to the present moment**

The diagram no. 49 shows that most of the athletes have less noticeable results and they are seniors.

The small number of athletes in such a situation is not significant in relation with the investigated pattern. Nevertheless, we underline that most of them show a high tension level (21 athletes), 14 athletes show values of the depression factor above the average of the group and 13 of them show values of the fatigue level above the average.

*No matter how content they are, the athletes experiencing certain spontaneous states of mind – such as tension, depression, fatigue might use prohibited substances. The risk is higher in senior athletes with weak results.*

- *Athletes' motifs to use prohibited substances*

Within the investigated pattern, 54.9% (771) of the athletes say they would have more strength, 36.3% (510) that the training would be easier, 11.4% (160) that they would reach and maintain the ideal weight, 12.7% (179) that the performances

would not be diminished, 47% (660) that would obtain better performances faster, 12.7% (178) that they would feel they are the masters of the universe, 28.8% (404) that they would have more muscle, 13.1% (184) they would loose weight. (Diagram no. 50)

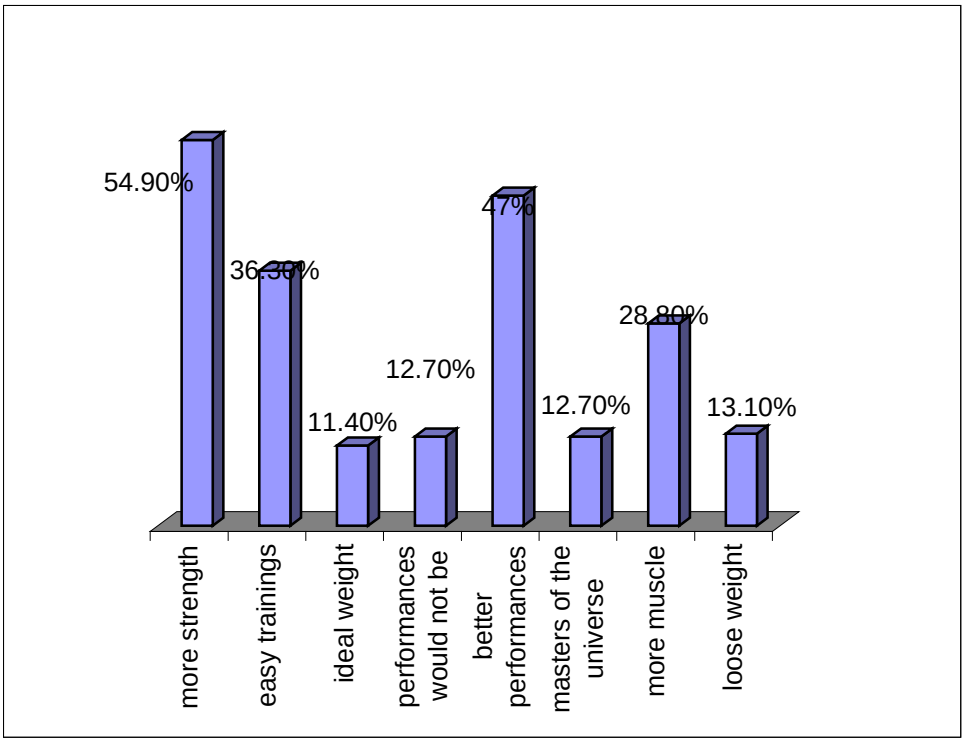



**Diagram no. 50 – Athletes' motifs to use prohibited substances**

Despite the fact they think doping substances would provide them with more strength, 80% are not tempted to use prohibited substances and 87% would not use them ever.

The athletes who think that doping substances provide them with more strength and are tempted to use them do not belong to type B of behavior, with tension level high, furious, depressive and tired.

No matter the purpose they associate with the doping substances, these athletes are characterized by dogmatism and high values of the factors related to spontaneous states of tension, depression, discontent. They also show a low score in personal self consciousness, which means they avoid to think about themselves.

- *Motifs the athletes think could be the base of using doping*

Within the investigated pattern, 60.6% (851) of the athletes say that one of the causes of athletes' using doping is the possibility to obtain some material goods, 60.5% (850) think it is the need to be famous, for 34.4% (483) the cause is the doubt, for 20.8% (292) is the tension they feel, while for 23% (323) is the

lack of information and 45.7% (641) think the high level of records is the cause of doping use. (Diagram no. 51)

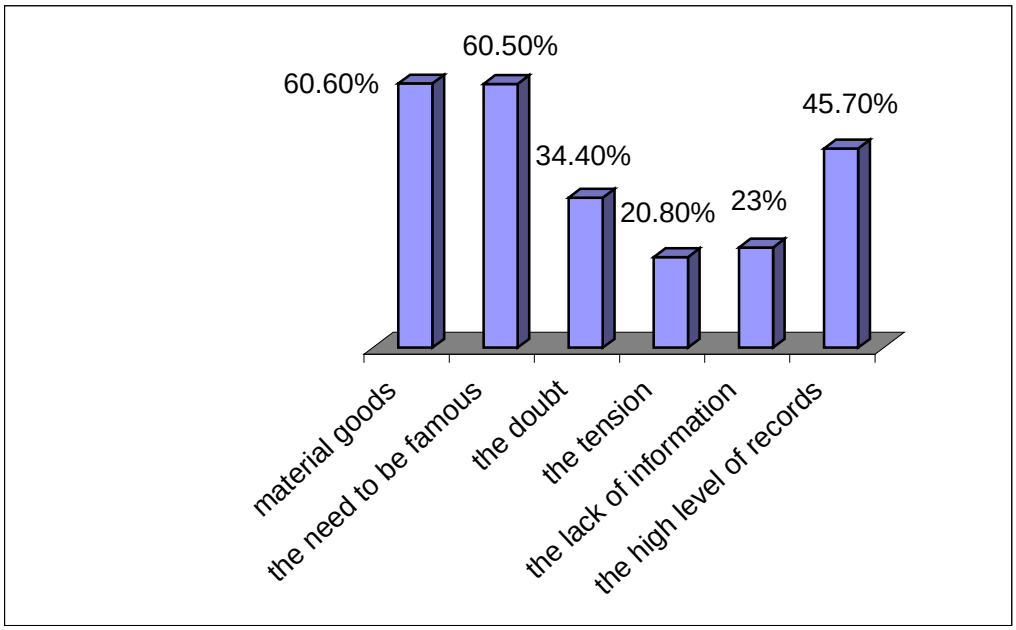



**Diagram no. 51 – Motifs the athletes think could be the base of using doping**

When analyzing the relation between the athletes with extrinsic motivation to practice sport and the answers related to the material benefits, we noticed these athletes do not have results in the first three places in national and international conferences and 46% of them state they might or they are tempted to use prohibited substances. As for the athletes with intrinsic motivation who think doping is used for fame, 378 athletes show high values in tension parameter. Those who state they would be tempted to use are the seniors as well as the ones who do not have special results (46%) or the ones wining the first place (20%) and second place (25%) in international conferences.

Most of the 34.4% (483) for who doubt is the reason of doping are seniors and 78% of them are tempted to use prohibited substances. The athletes who state they are tempted to use doping are the ones who do not have significant results in competitions (56%) or are national champions (18%) or national vice-champion (11%).

The athletes who think tension is what leads to doping are preponderantly juniors. They are also the ones tempted to use doping, especially those with no significant results in competitions (71%).

The motifs are a particular aspect of:

3. *The attitudes towards the doping phenomenon*.

The athletes' attitudes towards the use of doping substances were revealed by the means of the following aspects:

*a. the temptations to use prohibited substances*

6.3% (88) of the athletes answered they would be tempted to use prohibited substances in order to accomplish the objectives, 81.9% (1150) that they are not tempted and 11.8% (166) that they do not know. (Diagram no. 52)

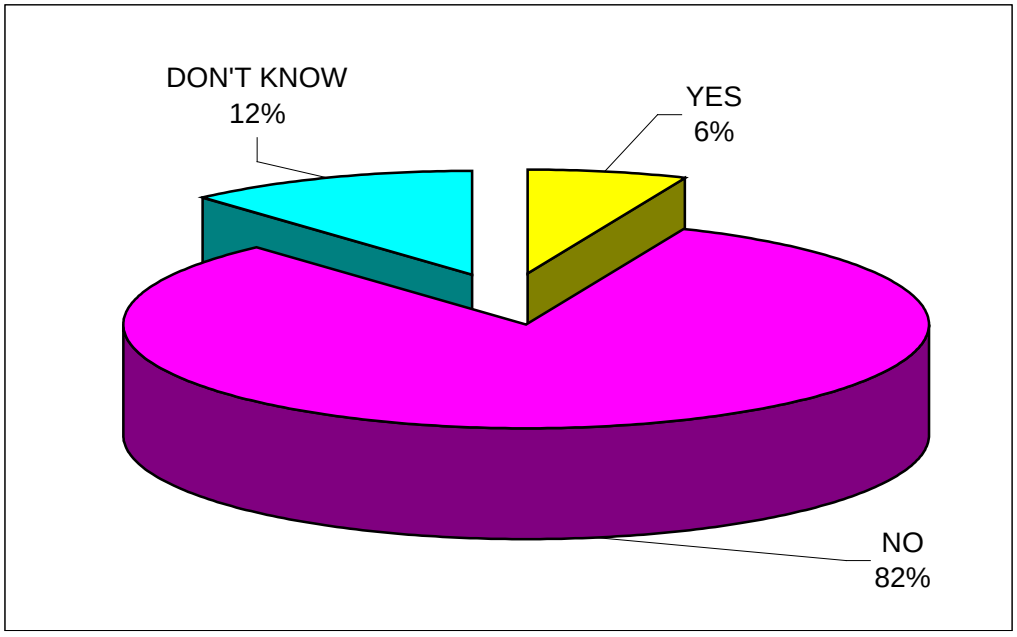



**Diagram no. 52 – The temptations to use prohibited substances**

Out of 88 athletes, 39 athletes (13 juniors and 26 seniors) state they were or they could become prohibited substances' users. (Table no.22)

| statement | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| a | result | I national | 1 | 5 | 6 |
| | | II national | 0 | 8 | 8 |
| | | III national | 2 | 3 | 5 |
| | | I international | 0 | 1 | 1 |
| | | other | 14 | 15 | 29 |
| | Total | | 17 | 32 | 49 |
| b | result | I national | 0 | 2 | 2 |
| | | II national | 0 | 1 | 1 |
| | | III national | 0 | 1 | 1 |
| | | II international | 0 | 1 | 1 |
| | | other | 1 | 3 | 4 |
| | Total | | 1 | 8 | 9 |
| c | result | I national | 1 | 0 | 1 |
| | | I international | 1 | 0 | 1 |
| | | other | 6 | 1 | 7 |
| | Total | | 8 | 1 | 9 |
| d | result | I national | 0 | 2 | 2 |
| | | II national | 1 | 1 | 2 |
| | | III national | 0 | 1 | 1 |
| | | I international | 0 | 5 | 5 |
| | | III international | 1 | 0 | 1 |
| | | other | 2 | 8 | 10 |
| | Total | | 4 | 17 | 21 |

**Table no. 22 – The relation between the category of athletes, their results and affirmation**

Most of the athletes have no significant results. Nevertheless, among the athletes who do not exclude the possibility to use doping there are also athletes with results in the first three places in national and international competitions.

As for the personality structure, we notice that they belong to the model elaborated for the investigated pattern. Most of them correspond to personality type AB and A. (table no.23)

| Frequency | Number | Percent |
|---|---|---|
| A type and B type | 47 | 53,4 |
| A type | 40 | 45,5 |
| Extremely A type | 1 | 1,1 |
| **Total** | **88** | **100,0** |

**Table no. 23 - Type of personality**

The results of the test POMS reveal that these athletes show values of depression above the average (53 athletes – 13 juniors, 20 seniors) (table no.24, diagram no. 54) and tension (59 athletes – 15 juniors, 20 seniors) (table no. 25, diagram no. 53). Most of the athletes have other results than the first three places, but there are also athletes who won medals in national and international competitions.

| DEPRESSION | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| lowerdepression | result | I national | 1 | 5 | 6 |
| | | II national | 1 | 5 | 6 |
| | | III national | 0 | 3 | 3 |
| | | I international | 0 | 3 | 3 |
| | | other | 10 | 7 | 17 |
| | Total | | 12 | 23 | 35 |
| higherdepression | result | I national | 1 | 4 | 5 |
| | | II national | 0 | 5 | 5 |
| | | III national | 2 | 2 | 4 |
| | | I international | 1 | 3 | 4 |
| | | II international | 0 | 1 | 1 |
| | | III international | 1 | 0 | 1 |
| | | other | 13 | 20 | 33 |
| | Total | | 18 | 35 | 53 |

**Table no. 24 – The report between the values of depression, category of athletes and results**

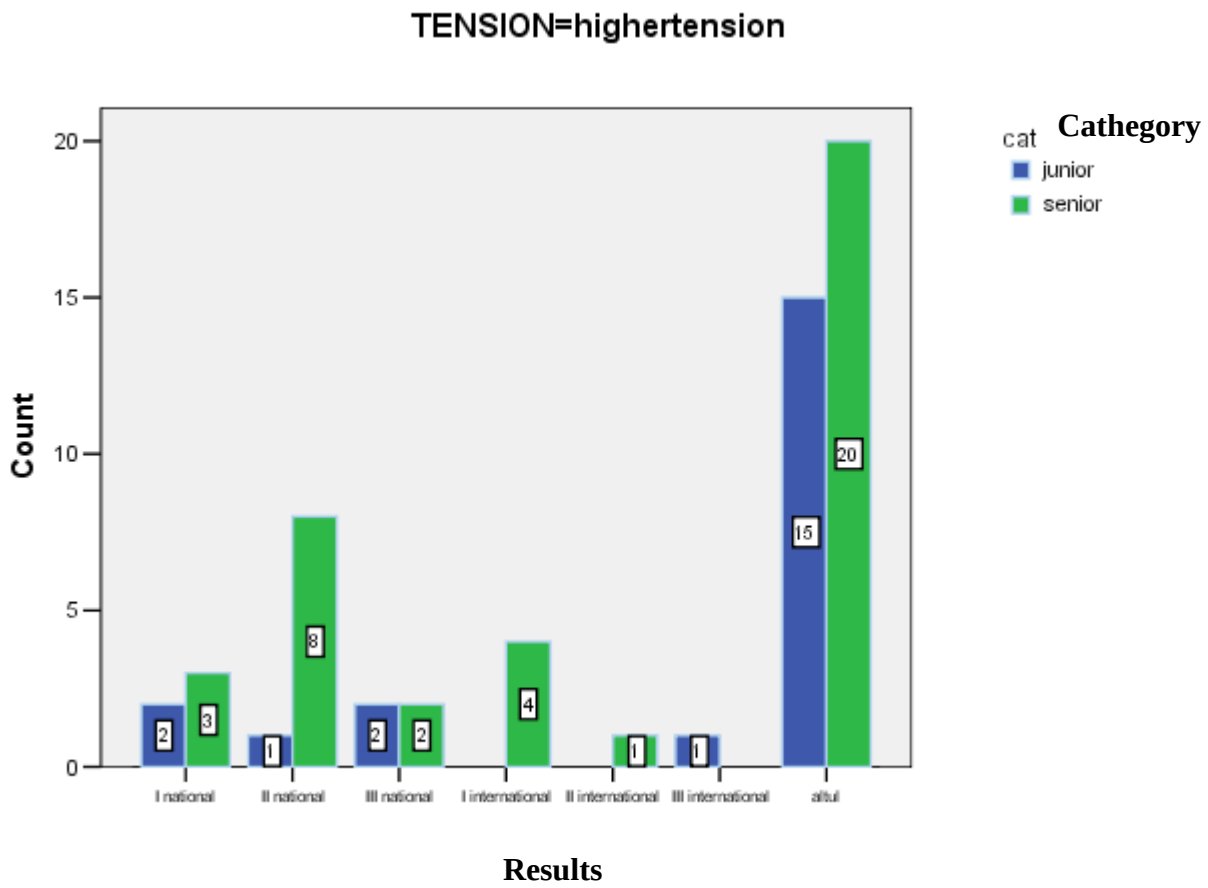



**Diagram no. 53 – The report between the values of tension above average – category of athletes and results**

| TENSION | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| lowertension | result | I national | 0 | 6 | 6 |
| | | II national | 0 | 2 | 2 |
| | | III national | 0 | 3 | 3 |
| | | I international | 1 | 2 | 3 |
| | | other | 8 | 7 | 15 |
| | Total | | 9 | 20 | 29 |
| highertension | result | I national | 2 | 3 | 5 |
| | | II national | 1 | 8 | 9 |
| | | III national | 2 | 2 | 4 |
| | | I international | 0 | 4 | 4 |
| | | II international | 0 | 1 | 1 |
| | | III international | 1 | 0 | 1 |
| | | other | 15 | 20 | 35 |
| | Total | | 21 | 38 | 59 |

**Table no. 25 The report between the values of tension – anxiety, category of athletes and results**

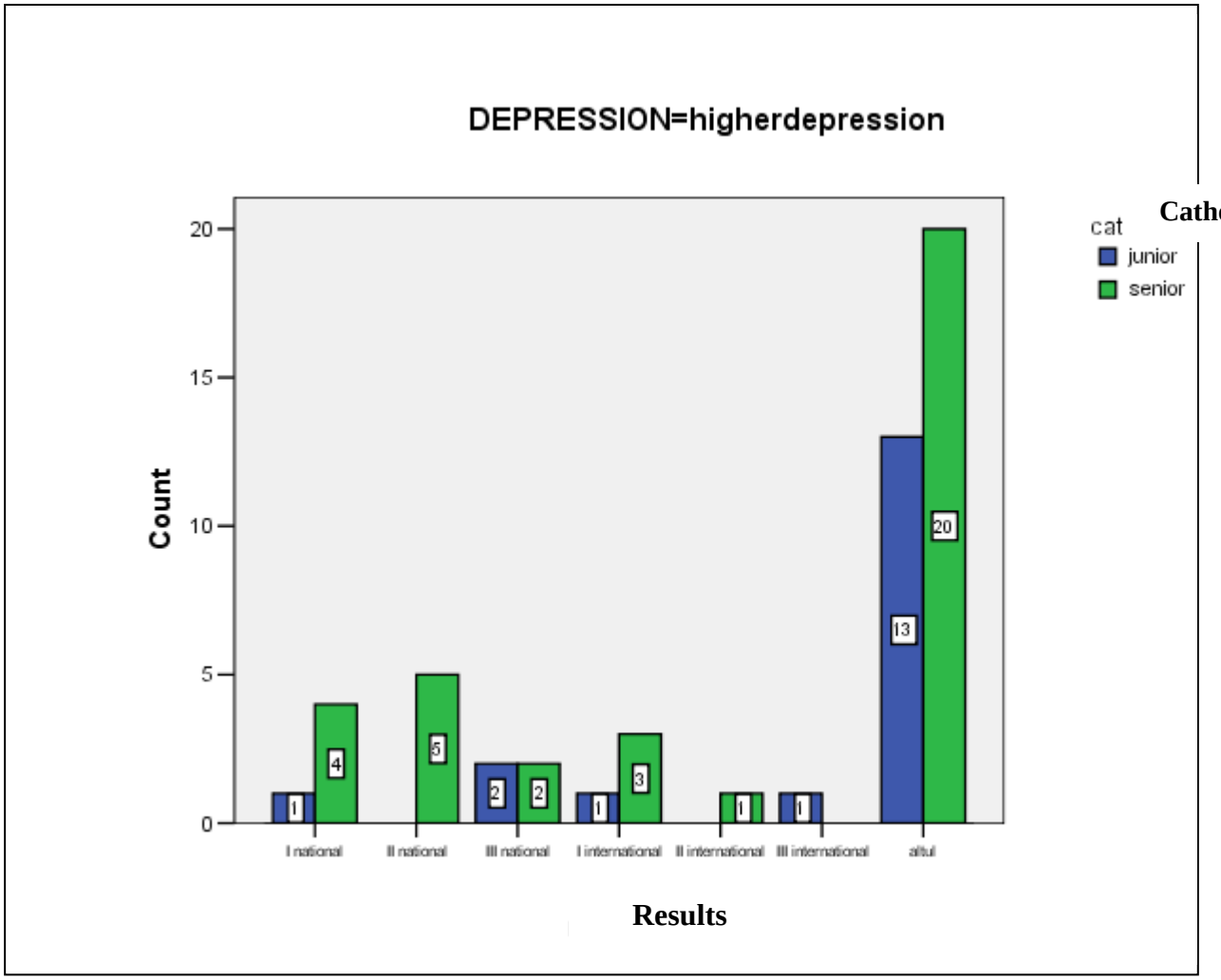



**Diagram no. 54 – The report between the values of depression above the average – category of athletes and results**

*The doping substances use is a temptation equally perceived by juniors, and seniors, especially under higher tension and higher depression conditions. The athletes who could use prohibited substances and methods are the ones with good results in the first three places as well the athletes with other results.*

- *Accepting that other athletes use doping*

Out of 1404 investigated athletes, 13% (182) said they would agree to compete with the ones who use doping, 77.5% (1088) said they would not and 9.5% (134) did not take a straight position. (Diagram no.55)

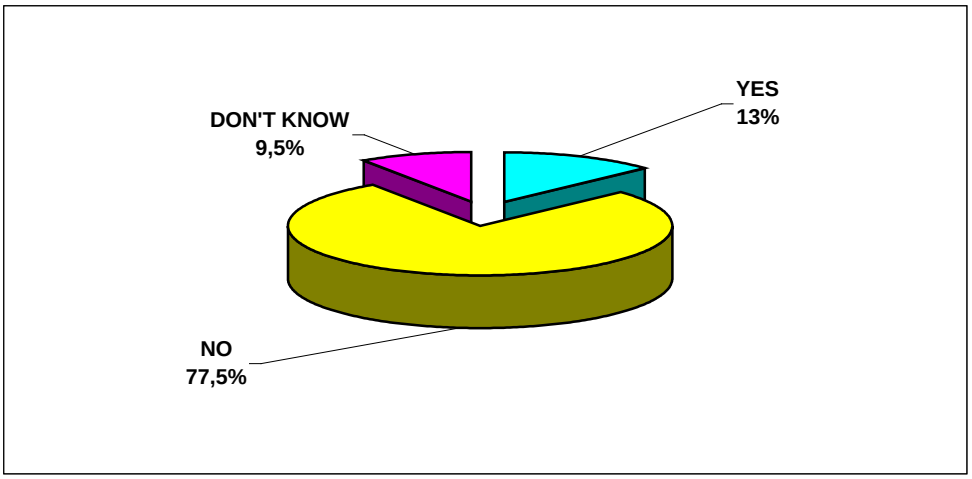



**Diagram no. 55 – Accepting that other athletes use doping**

Out of the ones who agree to compete with athletes using doping, 39 athletes (6 juniors and 16 seniors) admit they would use prohibited substances to accomplish their objectives. Most of them have other results than the first three places in official competitions. The highest frequency in affirmative answers related to the possibility to use prohibited substances are the ones of senior athletes, who stated they could use these prohibited means in the future (Table no. 26).

| statement | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| a | result | I national | 1 | 2 | 3 |
| | | II national | 0 | 4 | 4 |
| | | III national | 0 | 2 | 2 |
| | | other | 1 | 7 | 8 |
| | Total | | 2 | 15 | 17 |
| b | result | I national | 0 | 1 | 1 |
| | | II international | 0 | 1 | 1 |
| | | other | 1 | 2 | 3 |
| | Total | | 1 | 4 | 5 |
| c | result | I international | 1 | 0 | 1 |
| | | other | 2 | 1 | 3 |
| | Total | | 3 | 1 | 4 |
| d | result | I national | 0 | 2 | 2 |
| | | II national | 0 | 1 | 1 |
| | | III national | 0 | 1 | 1 |
| | | I international | 0 | 2 | 2 |
| | | other | 2 | 5 | 7 |
| | Total | | 2 | 11 | 13 |

**Table no. 26 – The report between agreeing to compete together with athletes who use doping – the trend to use doping - category and result**

As for the structure of personality, athletes with type A of personality are preponderant (22 athletes out of 39), more aggressive than the average of the group (30 out of 39 athletes), which are more than the average of the group.
It is also noticeable that 29 athletes (5 juniors and 24 seniors) out of the 39 of this category of respondents show values of tension-anxiety above the average and 22 athletes (2 juniors and 20 seniors) show depression values greater than the average. Most of these athletes are seniors. (Diagram no.56)

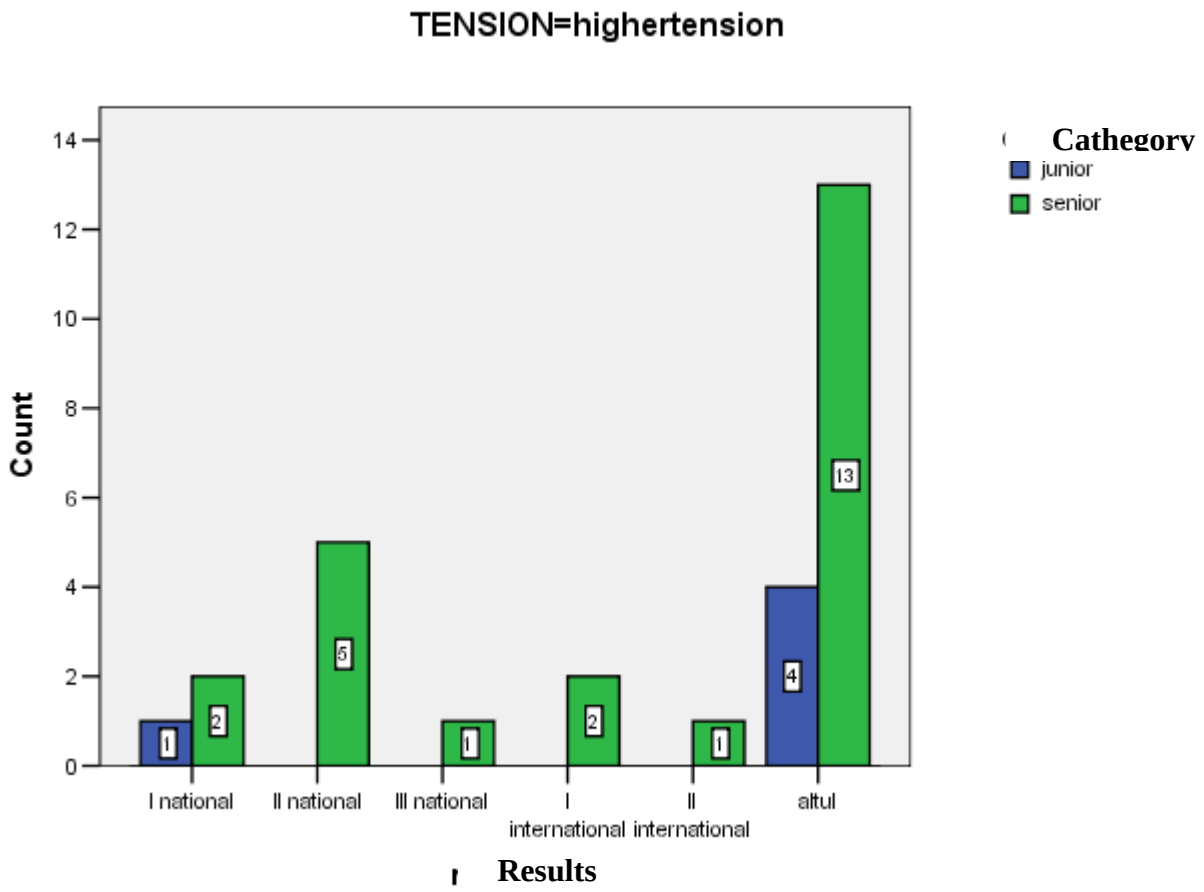



**Diagram no. 56 - The report between the agreement to compete with doped athletes - tension – category of athletes and results**

20% of the athletes who agree to compete with doped athletes are tempted to use prohibited substances themselves. Type A of personality, where the tension-anxiety and depression factors show values above the average is preponderant especially on senior athletes.

b. inciting to use doping

- 8.1% (114) of the investigated athletes know coaches who incite the athletes to use prohibited substances, while 79.1% (1111) do not know such persons (diagram no. 57).

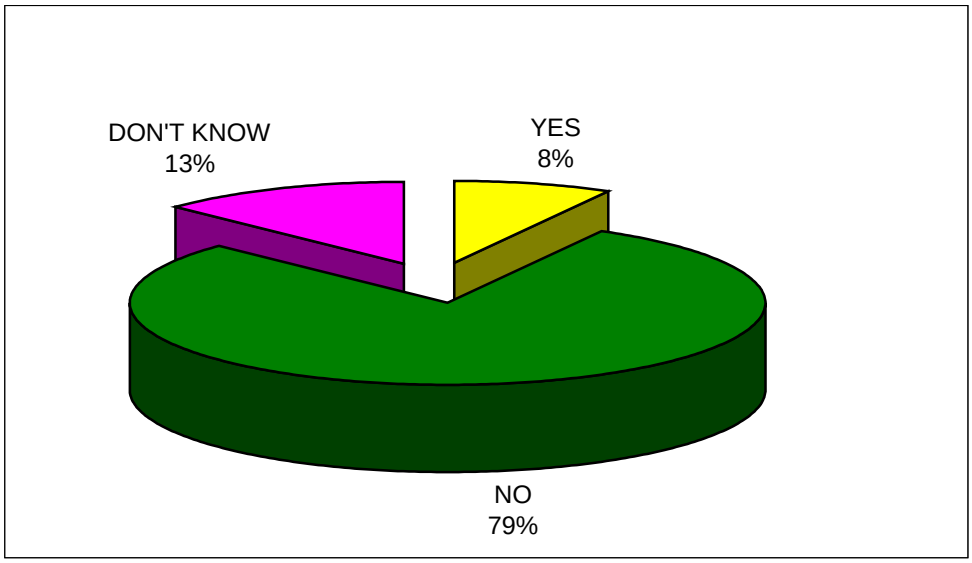



**Diagram no. 57 – Coaches who incite the athletes to use prohibited substances**

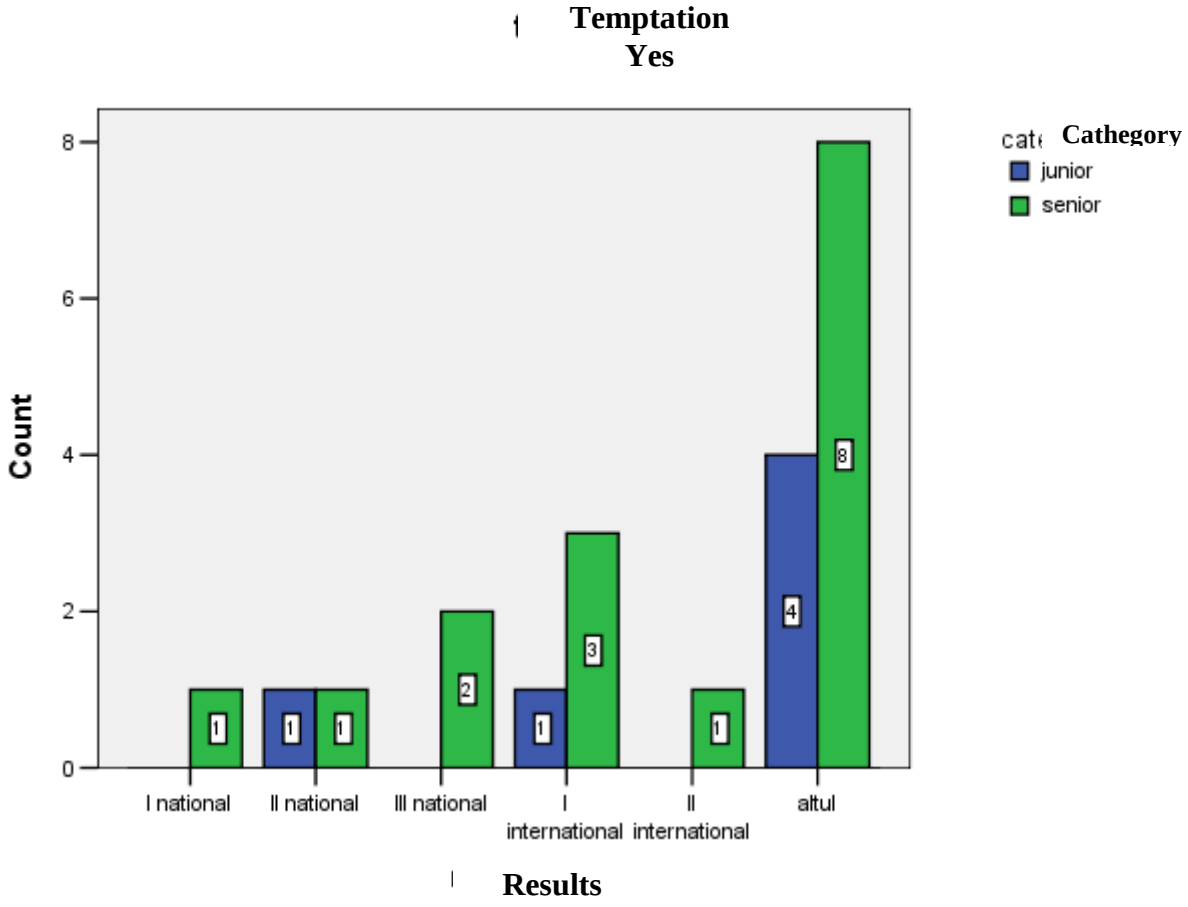



**Diagram no. 58 – The report between knowing coaches who incite to doping-temptation to use-category and results**

Out of these 114 athletes, only 22 (6 juniors and 16 seniors) are tempted to use prohibited substances. Although there are not significant statistical differences between juniors and seniors, we underline that especially the experimented athletes have such information and they are also the ones who are tempted to use such prohibited means. (Diagram no.58).

In the same time, only 20 athletes (6 juniors and 14 seniors) used or would use prohibited substances in the future. The number of seniors is again larger than the one of juniors, most of them with less important results, but also athletes who won one of the three places in national and international competitions. (Diagram no. 59 )

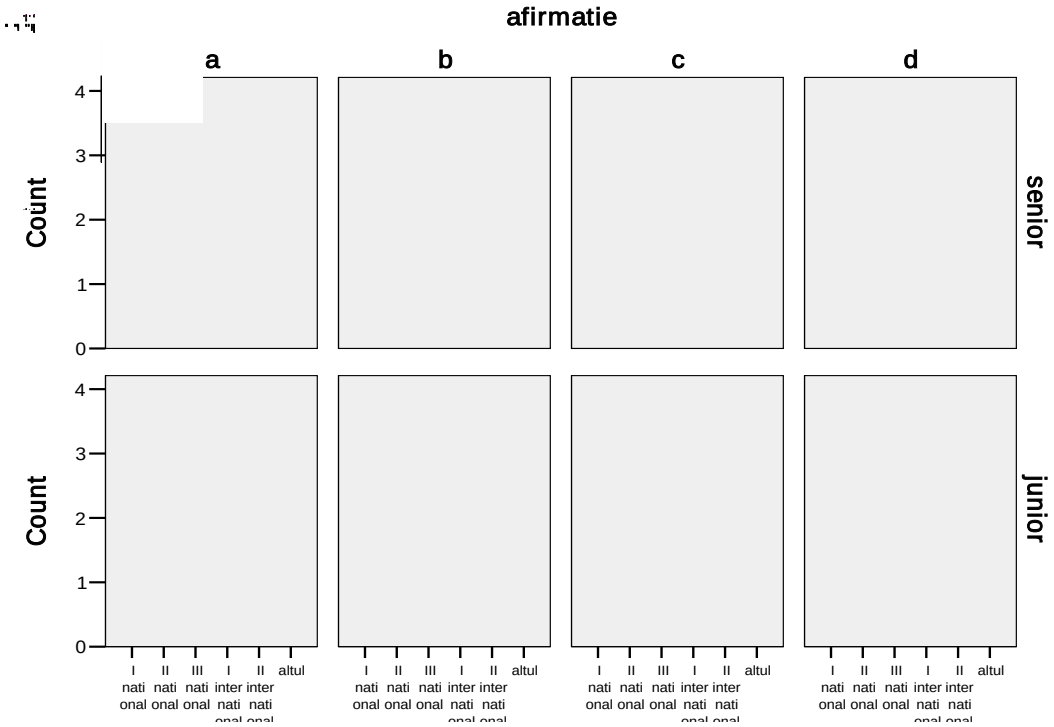



**Diagram no. 59 – The report between knowing coaches who incite to doping- the statement they use-category and result**

As for the personality type, type A is preponderent, with a structure similar to the one of the investigated group, but with values above the average for tension (16 athletes out of 22), for depression (13 athletes out of 22), rage (19 out of 22), fatigue (13 out of 22 athletes).

*Senior athletes get to know coaches who incite to doping substances use during the sport experience. Seniors in such a situation, with features of personality corresponding to type A of personality might think to use prohibited substances on their turn when tensioned, depressed, angry or tired above the average.*

*d. Rejecting the use of doping*

Most of the investigated athletes – 86.7% (1217) think they should not use prohibited substances in order to achieve their gold, 6% (84) have not decided, 2.8% (40) somehow disagree, while 4.5% (63) disagree.(Diagram no. 60)

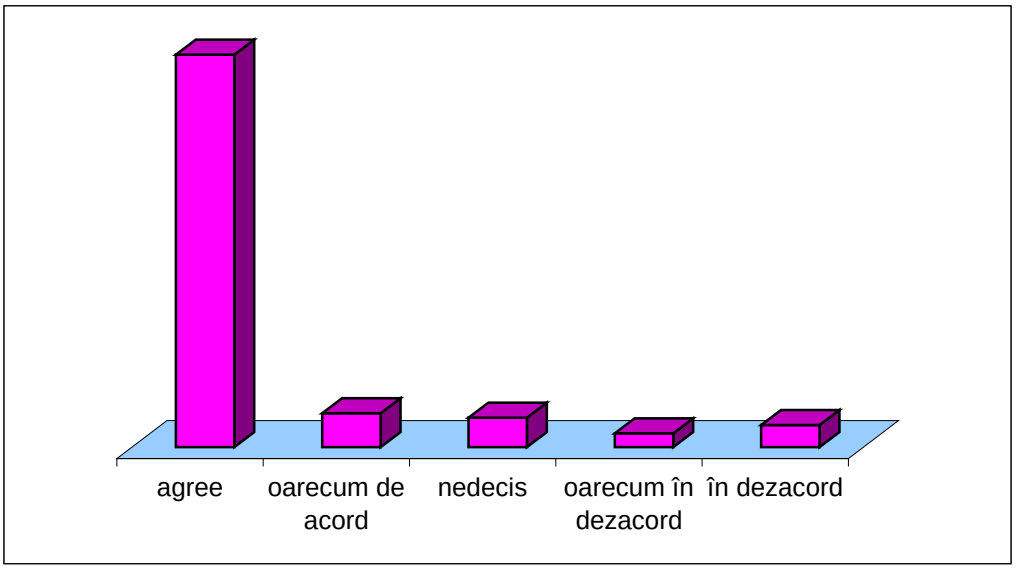



**Diagram no. 60 – Rejecting the use of doping**

Taking into consideration that only the athletes who do not exclude the possibility to use doping substances find themselves in a risk situation, we analyzed their level of temptation. We noticed that 51 athletes (15 juniors and 36 seniors) would agree to the use of prohibited substances. (Table no. 27)

| temptation | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| yes | result | I national | 1 | 3 | 4 |
| | | II national | 0 | 3 | 3 |
| | | III national | 2 | 4 | 6 |
| | | I international | 0 | 5 | 5 |
| | | III international | 1 | 0 | 1 |
| | | other | 11 | 21 | 32 |
| | Total | | 15 | 36 | 51 |

**Table no. 27 – The report between the temptation to use prohibited substances - result and category**

One may notice that most of the athletes have “other” results in competitions, but there are seniors with results in the first three places in national and international competitions who reveal a higher risk of use. The same seniors (22 out of 29 athletes) are the one stating they used, use or are going to use prohibited substances in the future (Diagram no.61)

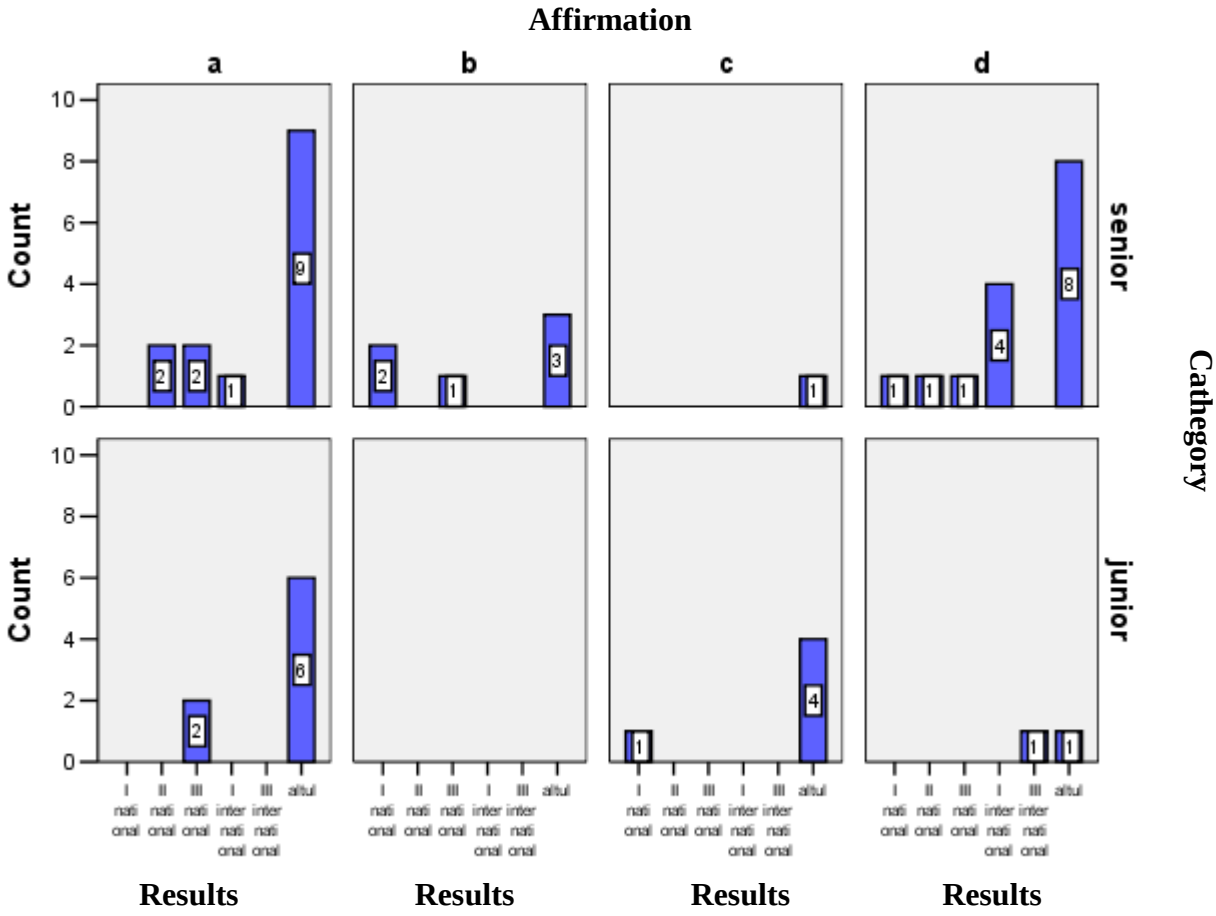



**Diagram no. 61 The report between the option to use prohibited substances - result and category on the athletes who do not exclude the possibility to become users**

As for the personality structure, most of them are of type A (29 out of 51 athletes) unlike the investigated pattern, with differences related to tension (41 athletes), depression (36 athletes), rage (49 athletes), fatigue (33 athletes), factors that register values above the average.

*Seniors athletes do not exclude the possibility to use doping substances, even more than juniors. The ones tempted to use such means are of type A of personality, with intense mind states (tension-anxiety, depression, rage – hostility, fatigue) above the average of the group. The athletes with valuable results in national and international competition may be part of this category.*

In a direct manner, 81.6% (1145) of the athletes sustain their opposition against the use of prohibited substances. Only 98 athletes are somehow against, 5.8% (81) have not decided, 2,1% (30) are somehow against and 3.6% (50) are not against. (Diagram no.62)

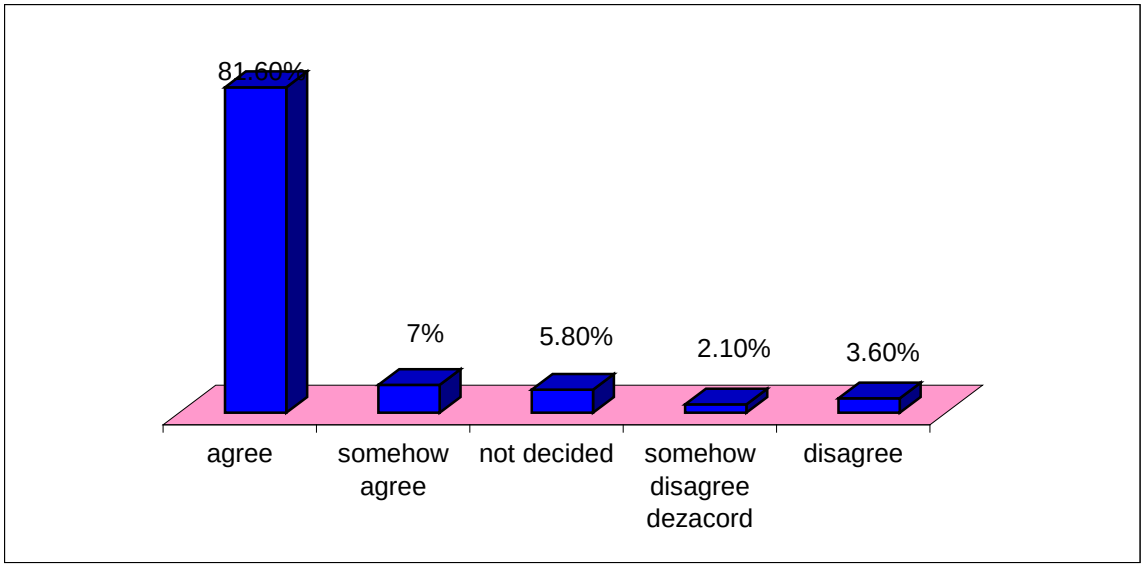



**Diagram no. 62 – Opinion about the use of prohibited substances**

Out of the athletes who are not against the use of prohibited substances, 14 (2 juniors and 12 seniors) say they would be tempted to use prohibited substances. Among seniors there are also athletes with results in the first three places in national and international competitions. (Diagram no. 63)

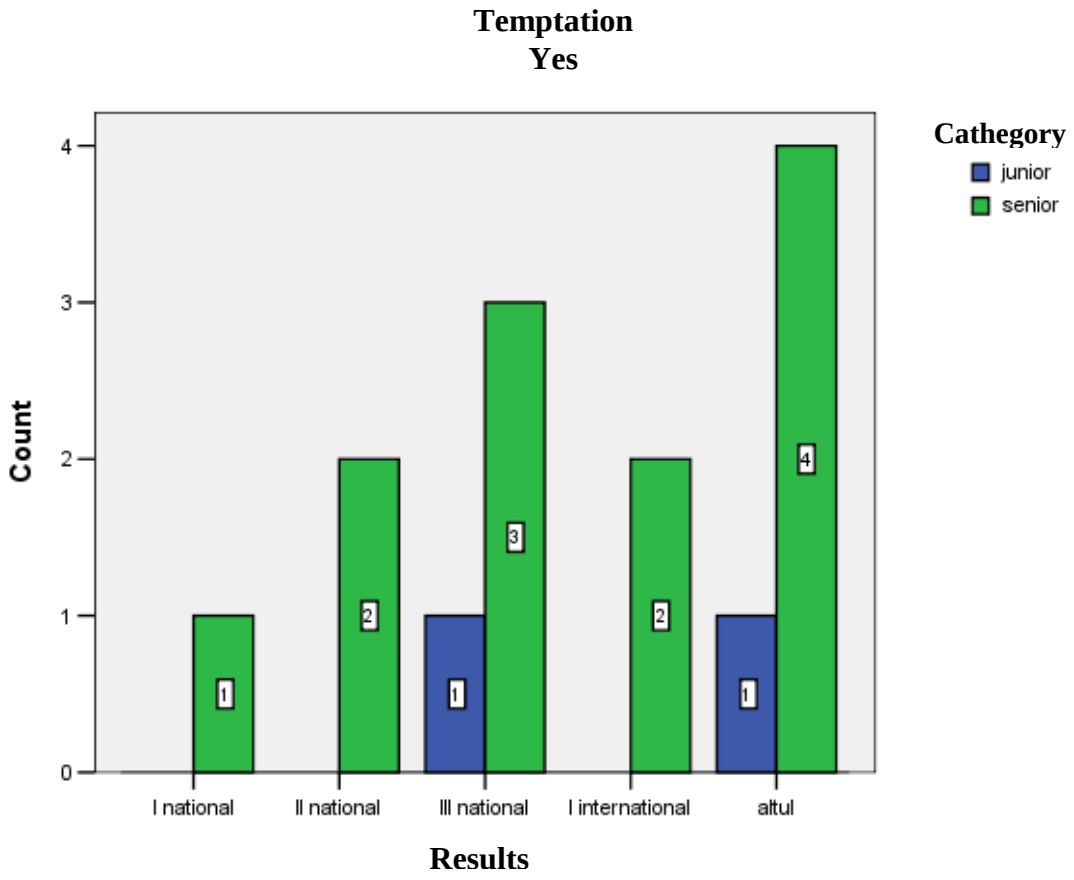



**Diagram no. 63 – The report between the attitude to accept the use of doping substances-temptation to use-result and category of athletes**

Out of those 14 athletes, (1 junior and 10 seniors) state they use or are going to use such substances.

The personality structure of the athletes within this group of respondents is similar as factors' ponder with the one in the model of the group. The differences occur in the values associated with the spontaneous mind states, where values above the average are registered for tension (11 athletes out of 14), depression (8 athletes out of 14), rage (12 athletes out of 14), fatigue (8 athletes out of 14) and confusions (9 athletes out of 14).

*Senior athletes usually oppose less to the use of prohibited substances. This position occurs also in the athletes with results in the first three places in national and international competitions. These athletes, with type A or AB of personality show states of mind with values above the average of the group for tension, depression, rage, fatigue and confusion.*

*d. the moral sense*

Within the investigated pattern, 92.7% (1301) of the athletes said that the ones who use doping should be sanctioned. (Diagram no. 64)

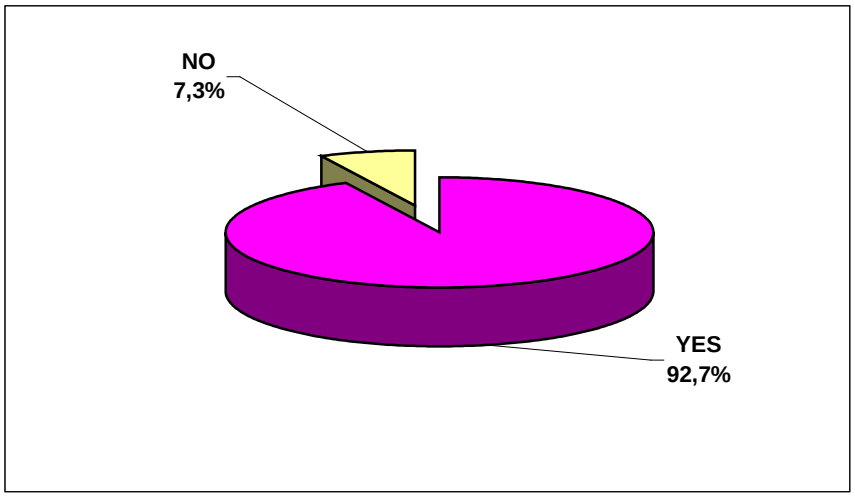



**Diagram no. 64 – The moral sense**

Although most of athletes reveal a moral attitude towards the use of prohibited substances, 28 of them do not exclude the possibility to use prohibited substances. Among them 9 juniors and 19 seniors. Although the difference is not statistically significant, the difference between the two categories of athletes allows us to state that the seniors are more tempted to use prohibited substances (Table no.28).

| temptation | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| yes | result | I national | 1 | 3 | 4 |
| | | II national | 0 | 2 | 2 |
| | | III national | 0 | 2 | 2 |
| | | I international | 0 | 2 | 2 |
| | | other | 8 | 10 | 18 |
| | Total | | 9 | 19 | 28 |
| tentatia | | | categorie | | Total |
| | | | junior | senior | |
| da | rezultat | I national | 1 | 3 | 4 |
| | | II national | 0 | 2 | 2 |
| | | III national | 0 | 2 | 2 |
| | | I international | 0 | 2 | 2 |
| | | altul | 8 | 10 | 18 |
| | Total | | 9 | 19 | 28 |

**Table no. 28 – The report between the temptation to use prohibited substances, category of athletes and result**

18 of the 28 athletes show features dominant for type A and 10 for type AB, under spontaneous states of mind dominated by tension (for 20 athletes), depression (18 athletes), fatigue (17 athletes), confusion (17 athletes).

We also notice that the seniors' results are distributed relatively equally on various levels of performance, except for "other results".

Out of 28 athletes included in this analysis, 14 athletes say they use or have used or are going to use prohibited substances. They take the risk to be sanctioned fully aware, while they do agree with the sanctions. (Diagram no.65).

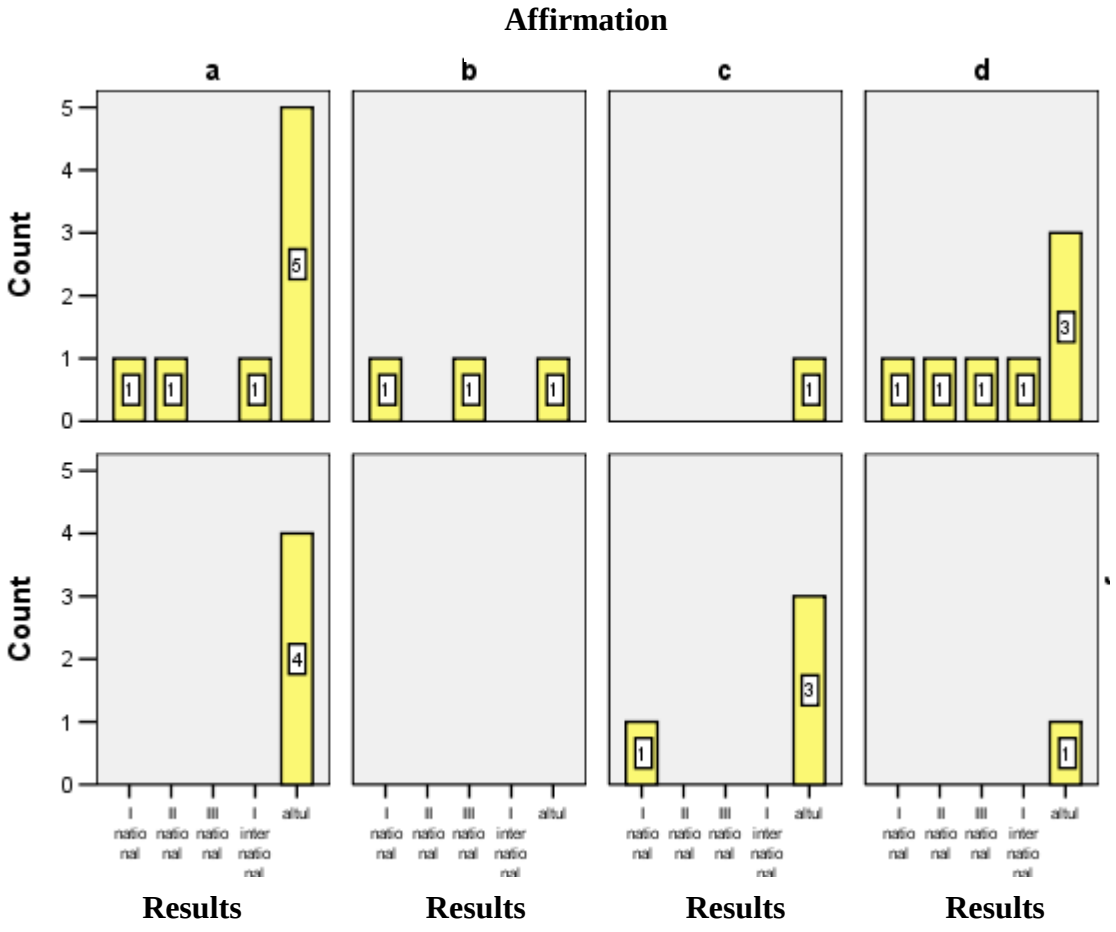



**Diagram no. 65 – The report between accepting the sanctions– temptation to use prohibited substances – category and sport results**

*Senior athletes with good results in national and international competitions, who agree with the sanctions for those who use doping substances are tempted to use the same prohibited substances under the influence of some spontaneous mind states (tension, depression, fatigue, confusion) with values above the average.*

*e. Taking the risk*

52.7% (740) said the effect of doping is equal to the risk, 14.5% (204) said no and 32.8% (460) do not know.

Out of 1404 subjects, 57.4% say it would not be difficult for them to use prohibited substances if someone garantees they would not get caught, while 23.4% do not know how they would react in such a situation. A larger percent of subjcets who know they would be sanctioned if caught using prohibited substances and methods and also agree with these relevant sanctions state it would be easy for them to use (24.1%), while (35.6%) say oit would be even easier if they would be offered with a substance that can not be detected.

*Athletes could use substances that improve their performance if someone garantees they would not get caught. This guaranty is even more important in case of athletes who know they could be sanctioned and agree with these punitive actions.*

4. *The decision to use or not to use doping*

a. *The capacity to face the pressure of the result*

„You have trained very well for a long time. But the training is not as good in the last few months. The consequence of this fact is that you are unable to accomplish your goal any longer. Do you think it would be hard for you not to use prohibited substances or methods in such a situation?" 9.2% (129) very hard, 10.5% (147) hard, 22.4% (314) neither hard/nor easy, 16% (225) easy, 42% (589) very easy. (Diagram no. 66)

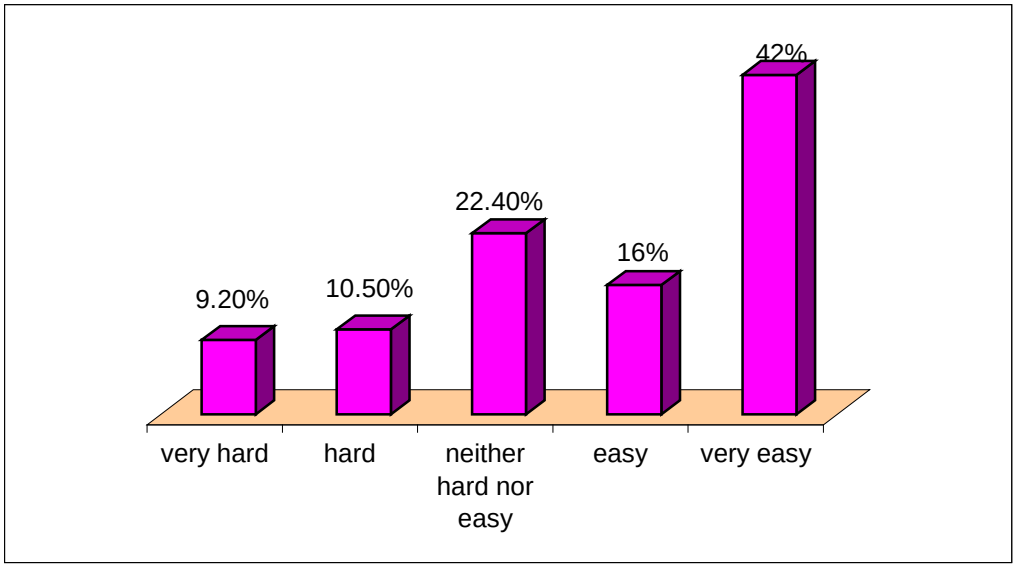



**Diagram no. 66 - The capacity to face the pressure of the hard trainings**

Out of the 276 athletes (19.7%) who answered it would be hard and very hard not to use doping substances in such situation, 29 athletes (10.5%) had been, still are or are going to be users. Most of the athletes are part of the category with "other results" and they are juniors.

In the same time, out of 276 athletes, 27 (10%) would be tempted to try prohibited substances and methods, 15 seniors and 12 juniors (Diagram no. 67). The difference between the number of senior athletes and juniors is not significant

statistically. Out of the 27 athletes, 18 athletes show values for tension above the average, while 17 athletes show values of depression above average. Only 11 (6 juniors and 5 seniors) of these respondents admit they are or they are going to be prohibited substances' users.

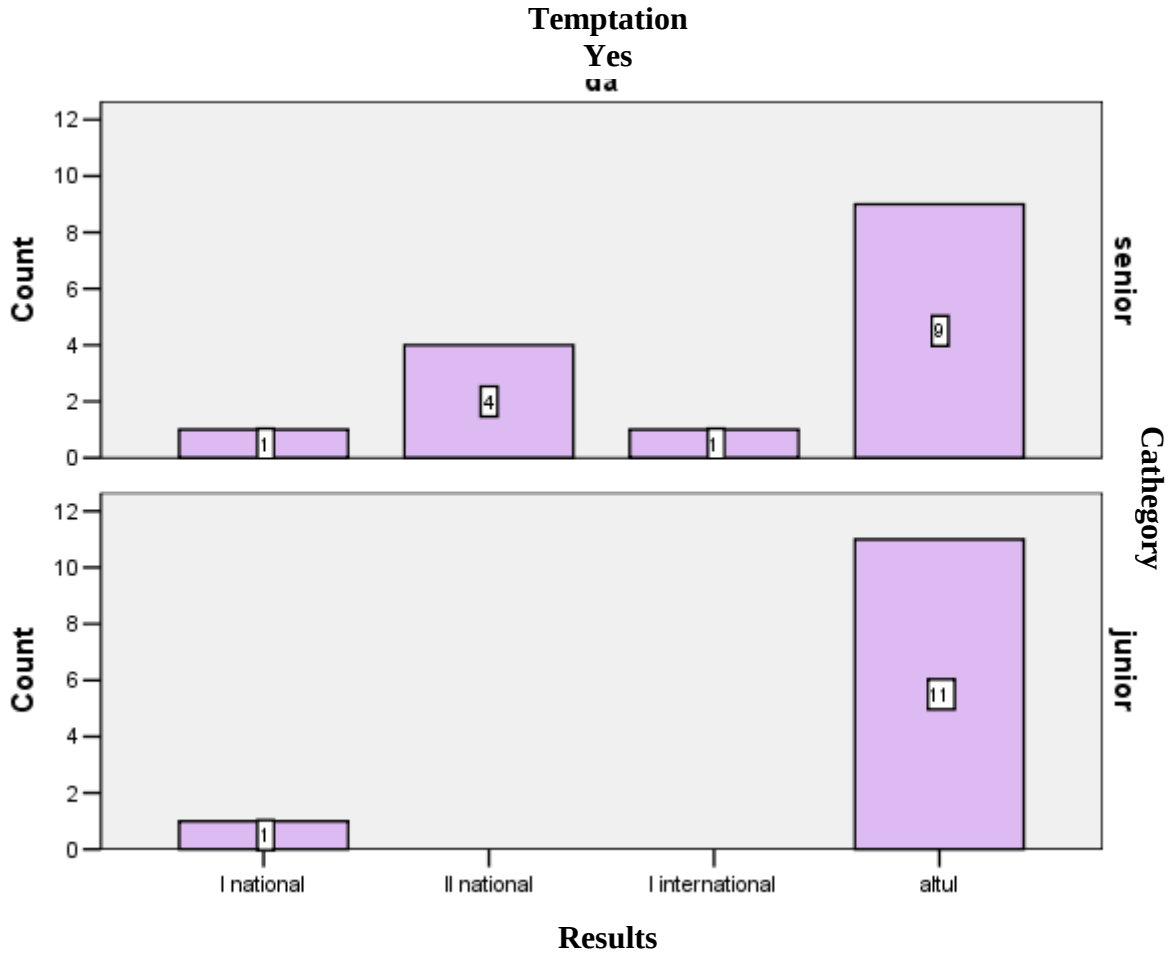



**Diagram no. 67 – The report between the capacity to face the pressure and the temptation to use prohibited substances**

Out of the 27 athletes, 20 have "other results" than the first three places in national and international competitions. (Table no. 29)

| temptation | | | category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| yes | result | I national | 1 | 1 | 2 |
| | | II national | 0 | 4 | 4 |
| | | I international | 0 | 1 | 1 |
| | | other | 11 | 9 | 20 |
| | Total | | 12 | 15 | 27 |

**Table no. 29 – The report between the capacity to face the pressure, the temptation to use prohibited substances, the categories and the results**

35 athletes (12.7%) joined this category; athletes who are not decided in what the use of prohibited substances concerns. There are both juniors (16 athletes) and seniors (19 athletes) among them. One may notice that 17 of them (48.6%), 11 juniors and 6 seniors have „other results".

*By analyzing this item, we conclude that no matter the category, the athletes are wiling to use prohibited substances under the pressure of result, especially the athletes with high values of tension and depression with other results than the first three places in national and international competitions.*

***The influence of the social factors***

„Your coach or physician is convinced that you cannot achieve your objective unless you use performance enhancing substances. Do you think it would be difficult not to use prohibited substances or methods in such a situation?" 9,4% (132) very difficult 11,8% (166) difficult, 24,2% (340) neither difficult or easy, 18,2% (255) easy, 36% (511) very easy.

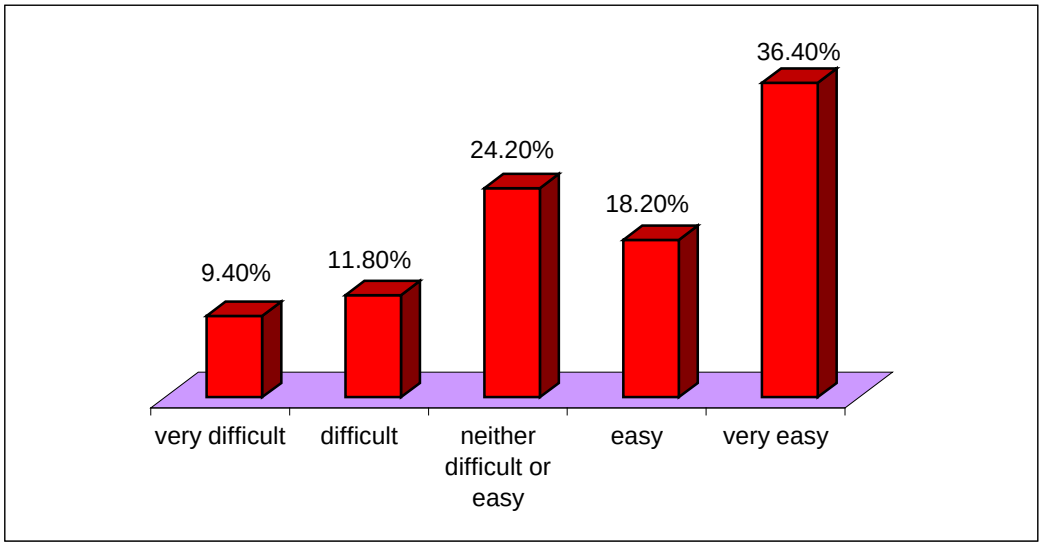



**Diagram no. 68 – It would be difficult for you not to use when the coach or physicians offer you?**

The influence of the physician or coach, which could establish the prohibited substances user behavior, would represent an important factor for 298 athletes (21,2%). They would very hardly or hardly refuse an offer from the two persons.

Among them, 30 athletes (10,1%) declare that they have used, are using or could use prohibited substances and most of them (18 persons) have „other results" than the first two positions in national or international competitions.

At the same time, 27 athletes would be tempted to use such substances (14 juniors and 13 seniors), while 53 are not decided yet (27 juniors and 26 seniors). Among the 80 athletes assessed within this item, 45 don't have notable results. (Diagram no. 69).

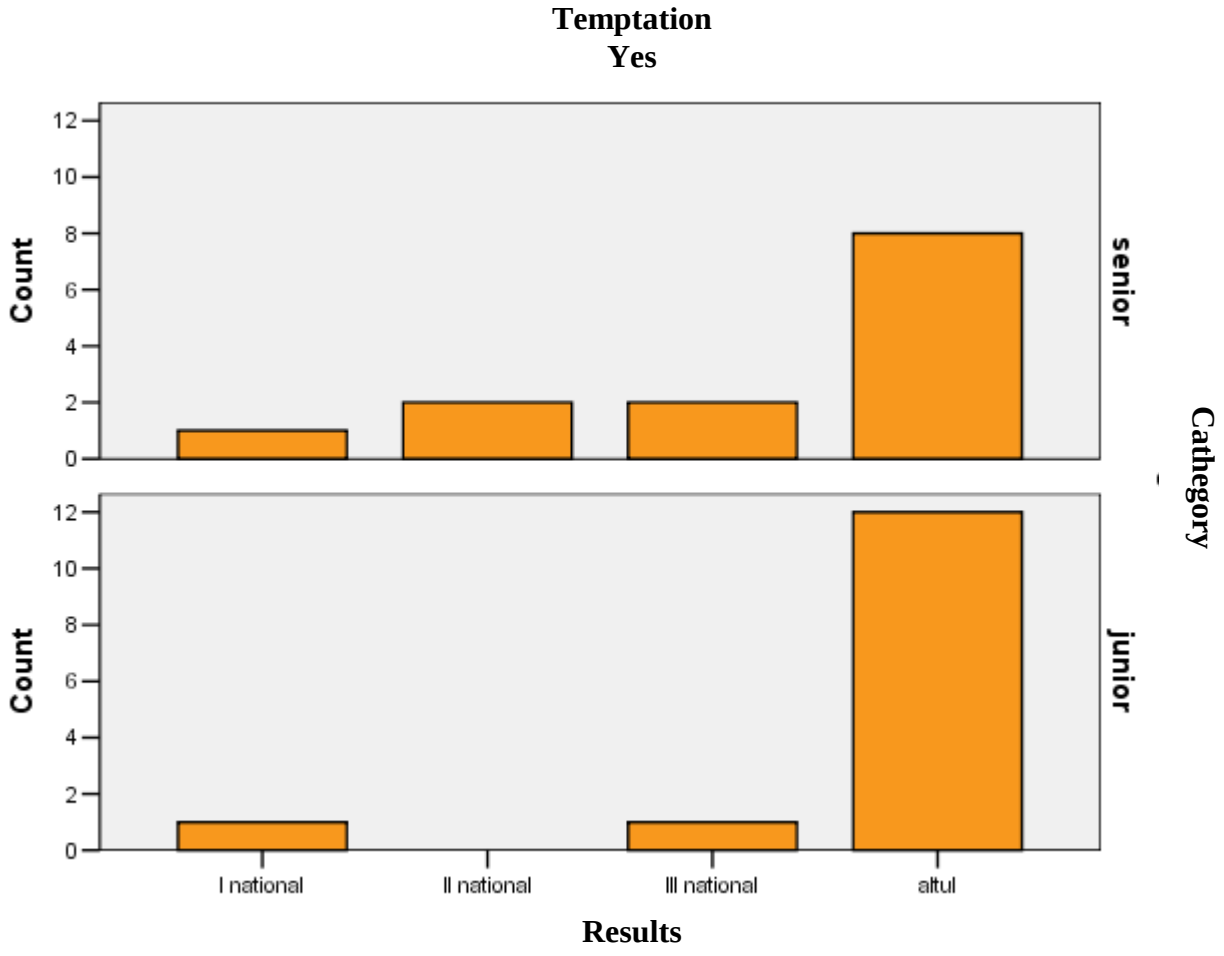



**Diagram no. 69 – Relation between the influence of the coach and physician and the temptation to use prohibited substances**

On most of these athletes, it can be noticed that the tension and depression values are over-average, 18 of them having higher values. Even if the differences are not significant, it can be noticed that the high values of tension-anxiety are predominant for the first category.

*To conclude, we can state that the influence of the physician or coach can be exerted to the same extent on athletes, regardless the category – juniors or seniors or the previous results but mostly in conditions of tension-anxiety or depressive states of the subjects.*

The influence of the entourage

*The colleagues' influence over the use of prohibited substances*

„You are training in a gymnasium / a team / a pool, where the colleagues frequently use performance enhancing substances. One of your colleagues incites you to try. Do you think it would be difficult not to use prohibited substances or methods in such a situation?" 8,7% (122) very difficult, 10,7% (150) difficult, 20,7% (291) neither difficult or easy, 19,9% (280) easy, 40% (561) very easy. (Diagram no. 70)

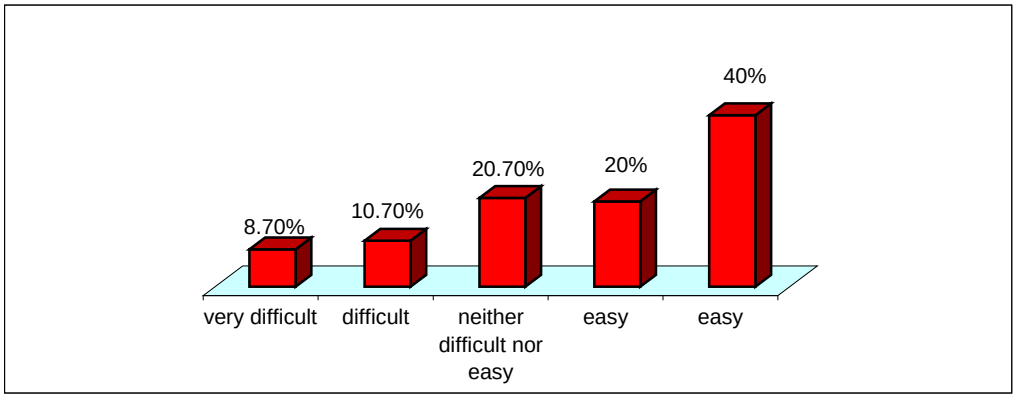



**Diagram no. 70 – It would be difficult for you not to use when your colleagues offer you?**

Among the 272 athletes (19.4%) declaring that they would very hardly or hardly refuse the offer of prohibited substances by the team colleagues, 82 athletes declare that they are tempted to use prohibited substances (28 juniors and 54 seniors). (Diagram no. 71).

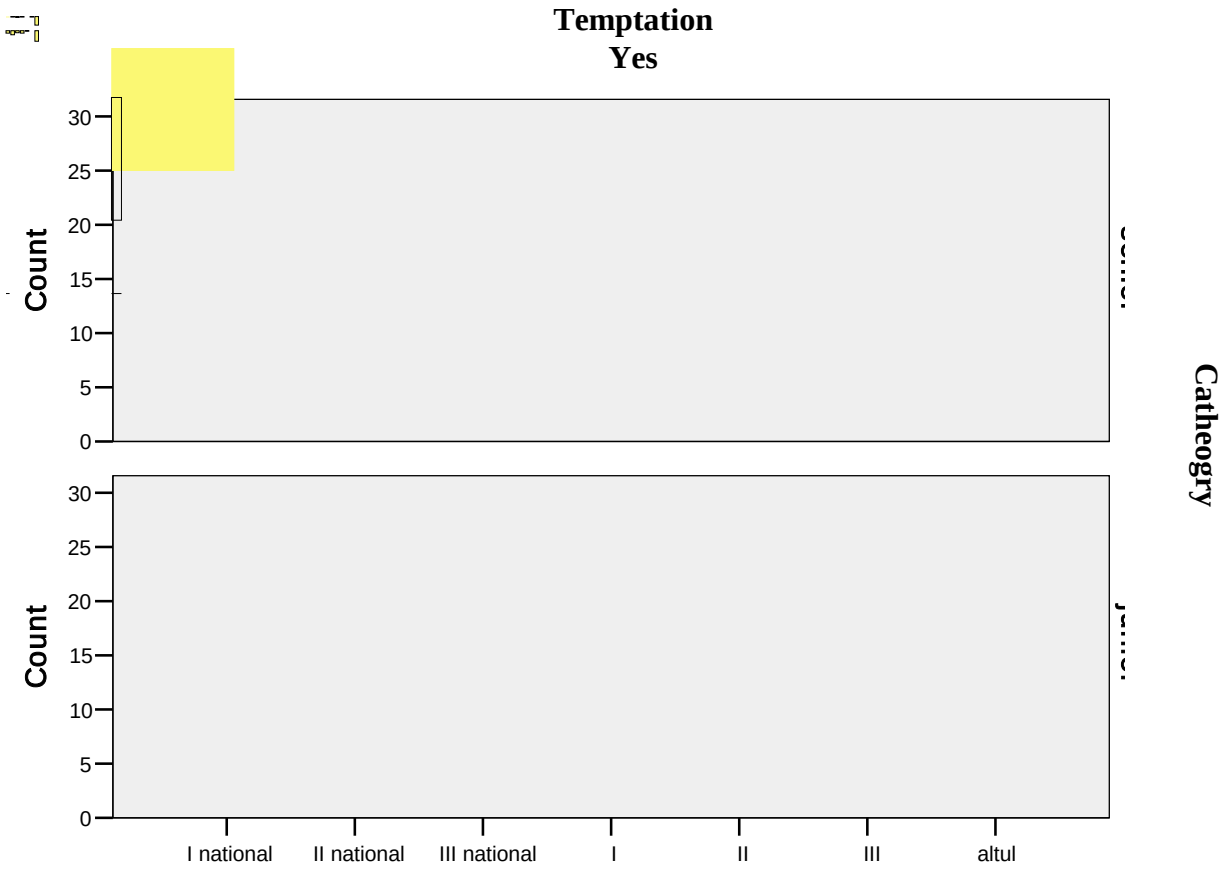



**Diagram no. 71 - Relation between the entourage's influence – temptation to use prohibited substances – category and best result in official competitions**

As the Diagram no. 71 shows, most of the athletes (47) have other results than the first three positions in national and international competitions.

At the same time, the analysis of the results achieved at POMS test has highlighted the fact that 57 of them have over-average scores on tension-anxiety, 50 on depression-dejection and 67 over-average scores on anger-hostility. The differences between junior and senior athletes are not significant for p=0.05, so we can say that there aren't notable differences between the two categories.

*The athletes strongly feels the influence of the coach or physician, they are tempted to use prohibited substances as they reveal over-average scores on tension-anxiety and depression-dejection factors.*

At the same time, 136 athletes among those who feel more seriously the influence of the coach or physician, have used, are using or could use prohibited substances. Among the users (9 persons), 7 are juniors, while 29 seniors have already used, and 24 juniors and 23 seniors could use in the future. In this situation

there are the athletes ranked on the first three positions in national and international competitions, but mostly those with “other results”. (Diagram no. 72)

The analysis of the personality tests’ results didn’t highlight deviations from the general tendencies of the investigated pool.

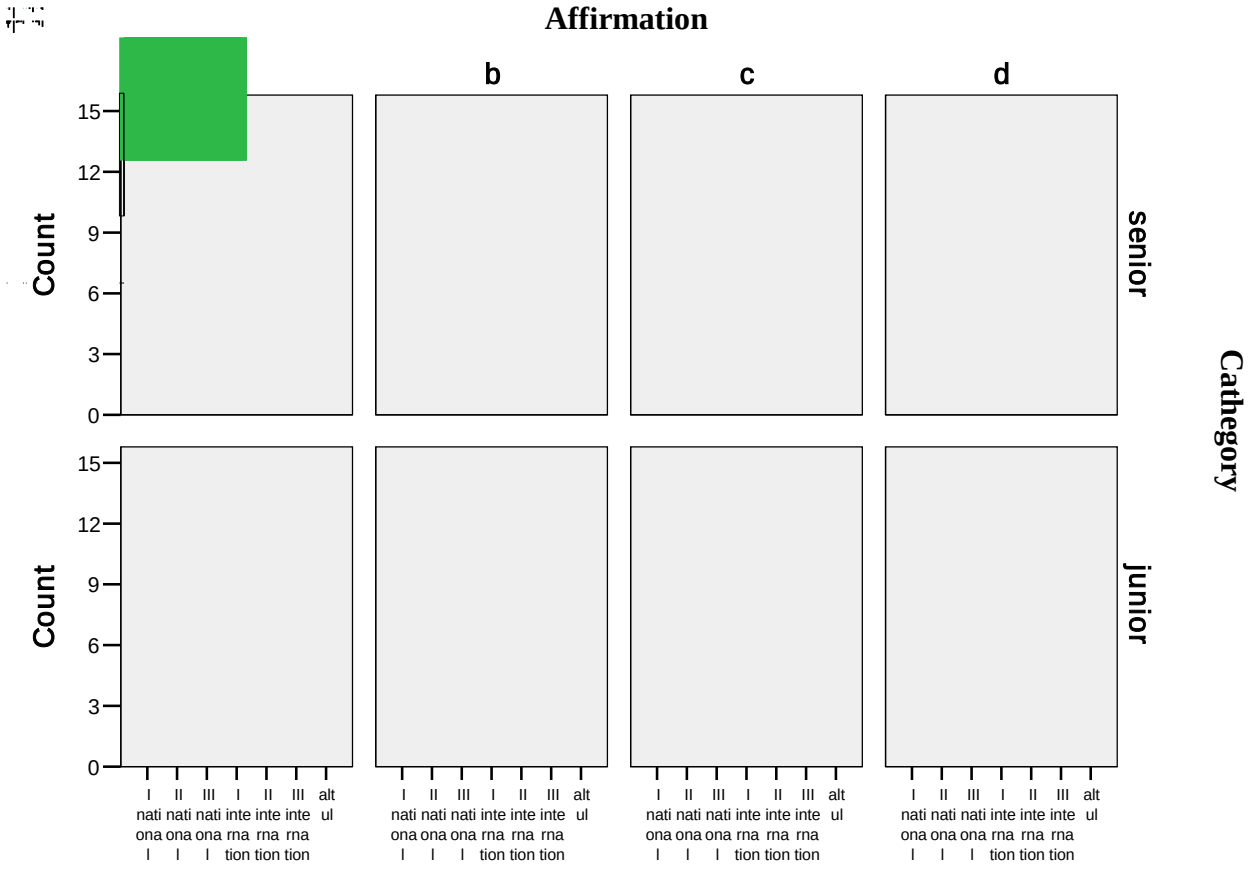



**Diagram no. 72 - Relation between the entourage´s influence – the use of doping substances– category and best result in official competitions**

*It can be stated that the influence of the entourage – represented by the training partners it is equally exerted on the athletes, regardless the category (juniors or seniors) and particularly on those who didn’t distinguish themselves on international level.*

***The influence of the team colleagues***

„The team / pool colleagues use prohibited performance enhancing substances. You would like to be part of this group but you don’t think you can unless using this kind of substances too. Do you believe it would be difficult for you not to use prohibited substances or methods in such a situation?” 6,6% (93)

very difficult, 12,8% (180) difficult, 24,7% (347) neither difficult or easy, 22,9% (321) easy, 33% (463) very easy.

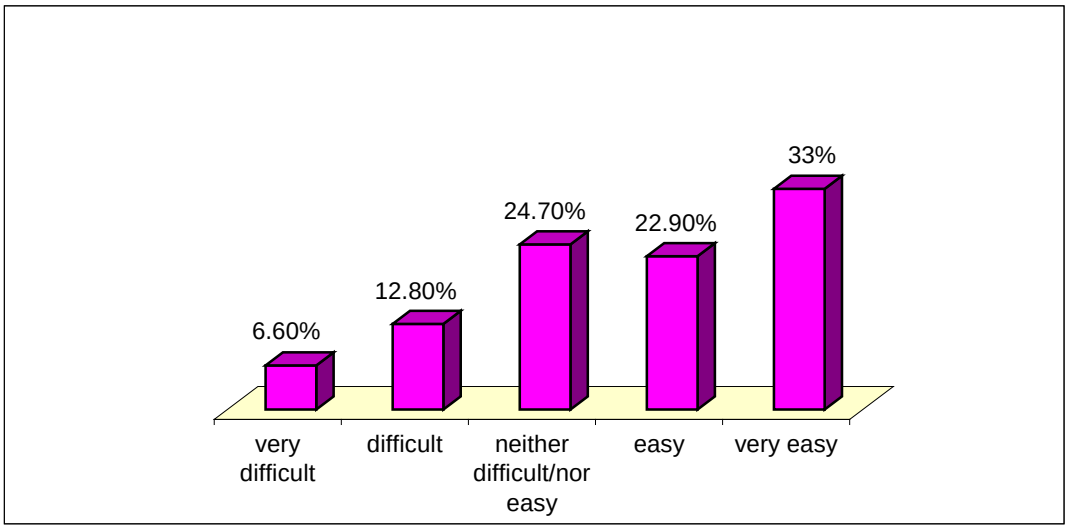



**Diagram no. 73 - It would be difficult for you not to use if the team colleagues are using?**

Out of the 273 athletes (19,4%) declaring that they would very hardly or hardly refuse to use substances when their colleagues offer them, 81 athletes (12 juniors and 13 seniors) are tempted to use in the future. And they have results on national level only. The differences between the juniors and seniors' number are not statistically significant. (Diagram no. 74)

The analysis of the personality tests' results didn't reveal significant differences as compared to the model of the investigated pool.

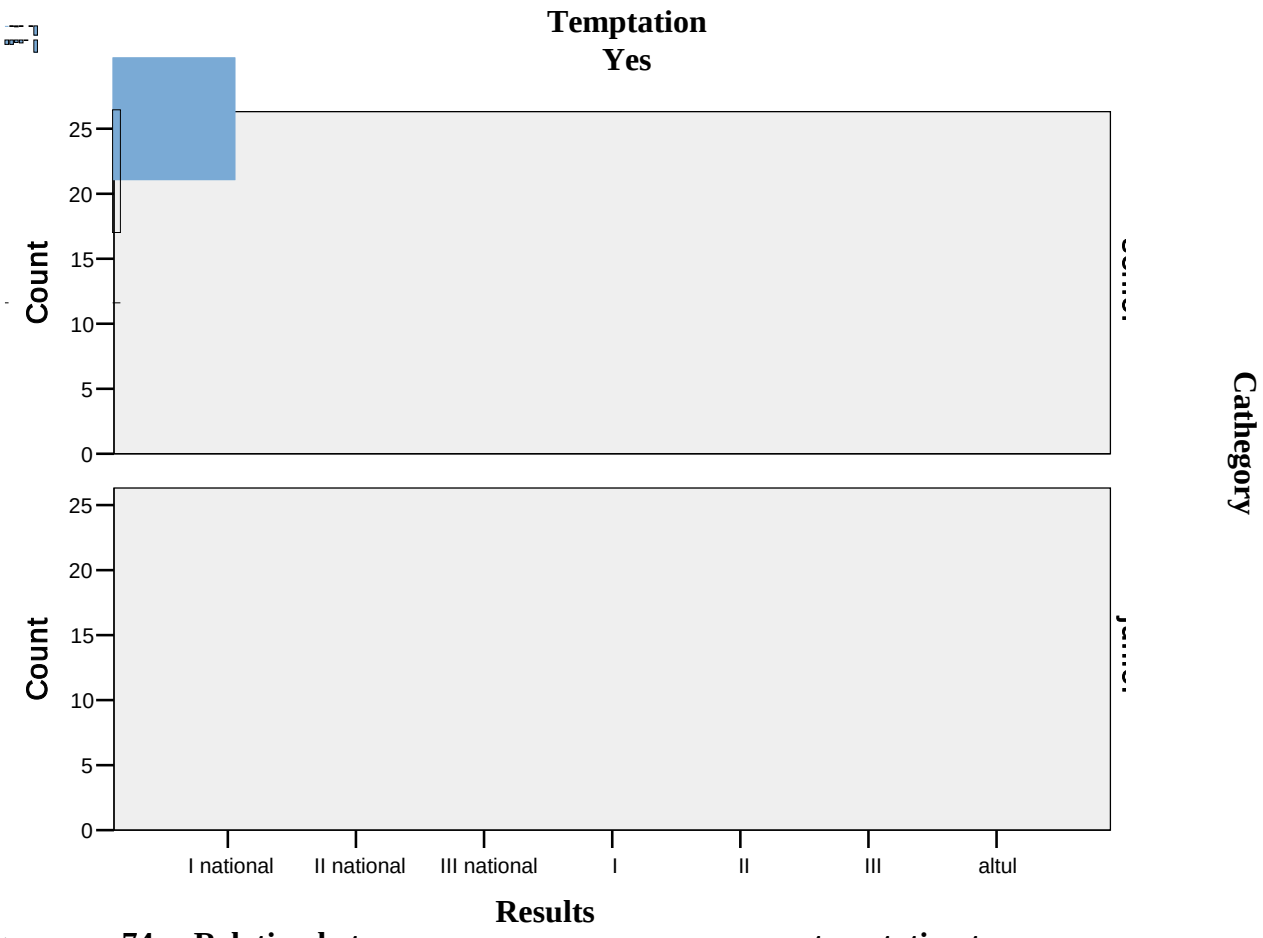



**Diagram no. 74 – Relation between the entourage's influence – temptation to use – category and result**

38 athletes feeling the entourage's influence and being also tempted to use, declare that they are already using or could use prohibited substances. Among them, 12 athletes are junior and 26 are senior, being ranked on the first three positions in national competitions. However, most of them have "other results" (21 athletes).

At the same time, significant differences, as compared to the group average are not registered on either of the personality factor or momentary psychic states.

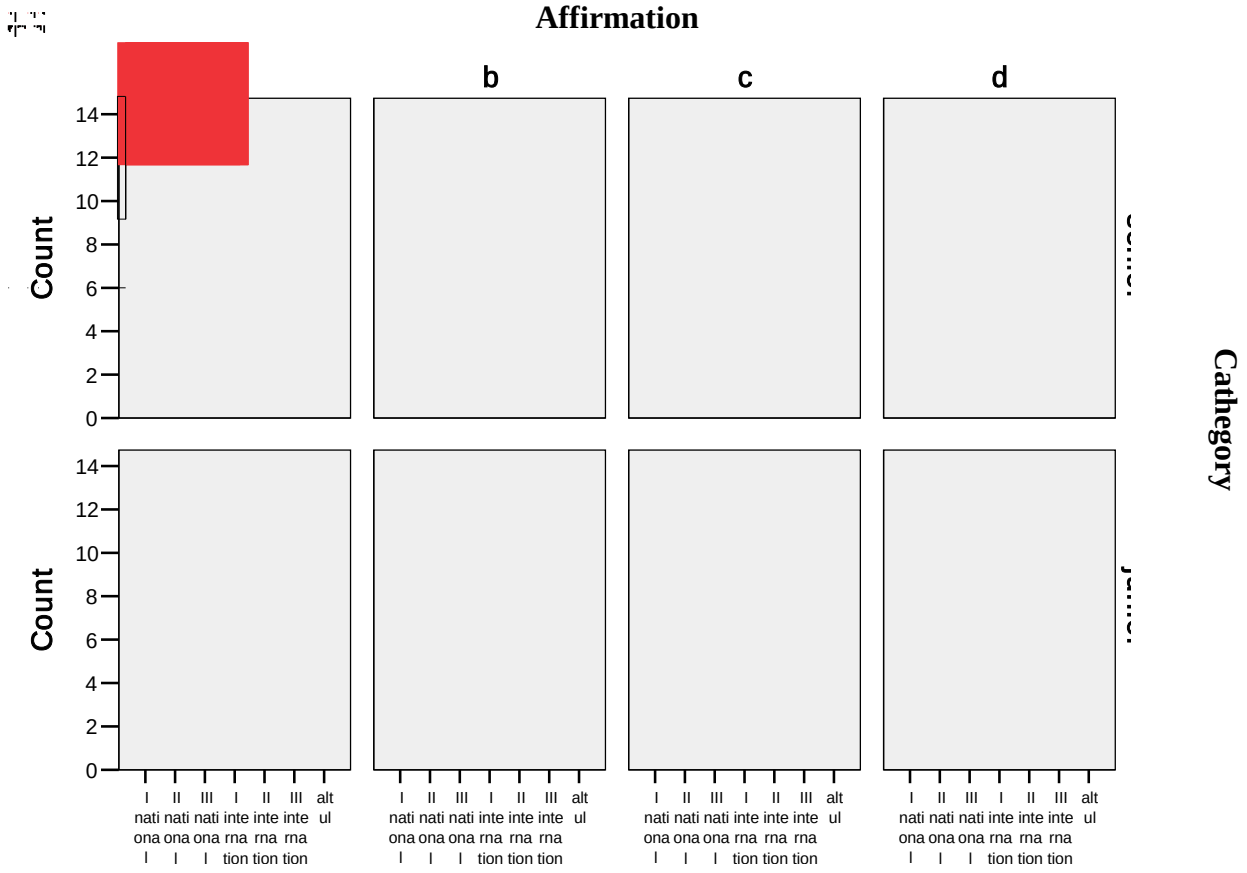



**Diagram no. 75 – Relation between the entourage's influence – declared or intentional use – category and result**

*The influence of the team is equally exerted on the athletes, mostly with respect to the doping behavior, regardless the category (juniors or seniors) and particularly on those who didn't distinguish themselves on the first three positions*
*The risk of using prohibited substances is high even for those placed on other positions than the first three, on which the doping controls are usually conducted.*

*5. Attitudes under the influence of the entourage* (physician, coach, colleagues, friends, partners and others)

***Parents' influence over the use of prohibited substances***

2,1% (29) of the athletres declared that the parents **would agree** for them to use prohibited substances, 86,6% (1216) said that the parents wouldn't agree and 11,3% (159) didn't know what their parents would say. (Diagram no. 76)

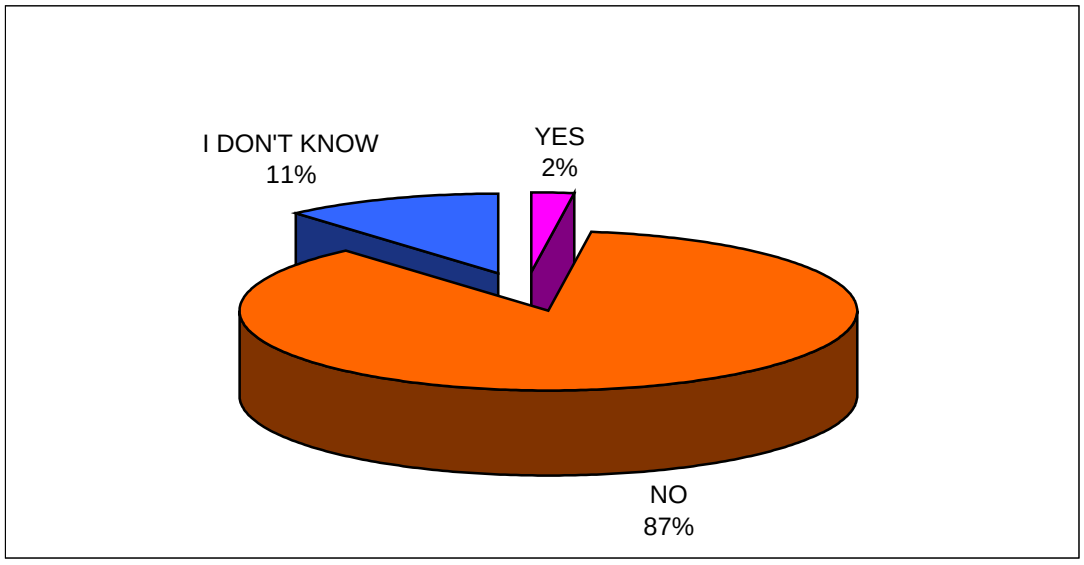



**Diagram no. 76 – Parents' influence over the use of prohibited substances**

Among those declaring to have their parents' agreement (29 athletes), 20 athletes would be tempted to use prohibited methods or substances (11 juniors and 9 seniors). Even if they are ranked on the first and third positions on international level, 2 of the juniors declare that they would use such substances. Most of the athletes have "other results" in national and international competitions. (Diagram no. 77)

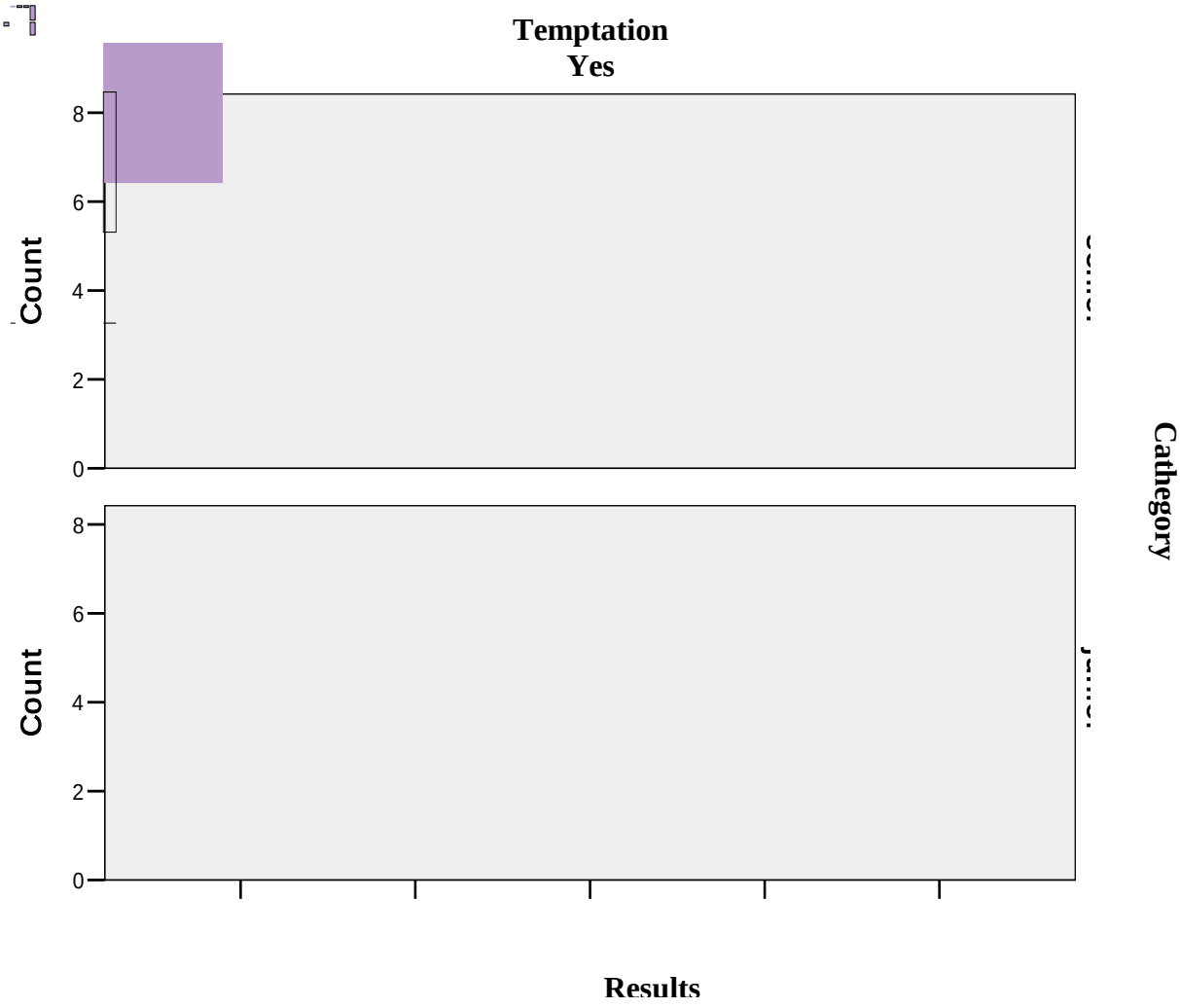



**Diagram no.77 – Relation between the parents' influence – temptation to use – category and result**

On these athletes it can be noticed that even the tension-anxiety (14 athletes), depression (14 athletes), anger (18 athletes) and fatigue (11 athletes) values are over the group, which reinforce e the idea that momentary psychic states have a decisive contribution in taking the decision to use doping substances.

Among the 29 athletes (2%) declaring to have their parents' agreement to use prohibited substances, 14 are using or will use this kind of methods. 5 seniors who have used, were ranked on the third position on national level or less, while the juniors were ranked on the first and second positions on international level, and on the second position on national level. (Table no.30)

| Statement | | | Category | | Total |
|---|---|---|---|---|---|
| | | | junior | senior | |
| a | result | III national | 1 | 0 | 1 |
| | | other | 3 | 2 | 5 |
| | Total | | 4 | 2 | 6 |
| b | Result | I national | | 2 | 2 |
| | | other | | 3 | 3 |
| | Total | | | 5 | 5 |
| c | Result | I international | 1 | 0 | 1 |
| | | other | 3 | 1 | 4 |
| | Total | | 4 | 1 | 5 |
| d | Result | III international | 1 | 0 | 1 |
| | | other | 2 | 1 | 3 |
| | Total | | 3 | 1 | 4 |

**Table no.30 – Ratio between the user statement – category and result**

Numerically, the differences between the junior and senior athletes are not significant for p=0.05, but we want to highlight the fact that there is a slight tendency for the juniors to take more into consideration their parents' advise.

*Based on the parents' agreement, the temptation to use prohibited substances is higher on juniors, which can be explained by a stronger influence of the family at this age. This influence is stronger on juniors who present accentuated momentary psychic states – tension, depression, fatigue and anger.*

***The physician's inlfuence***

43,6% (612) of the athletes are very much taking into consideration the pool's physician recommendations, 42,5% (596) much enough, 10,6% (149) little, 1,9% (26) very little, 1,5% (21) not at all.

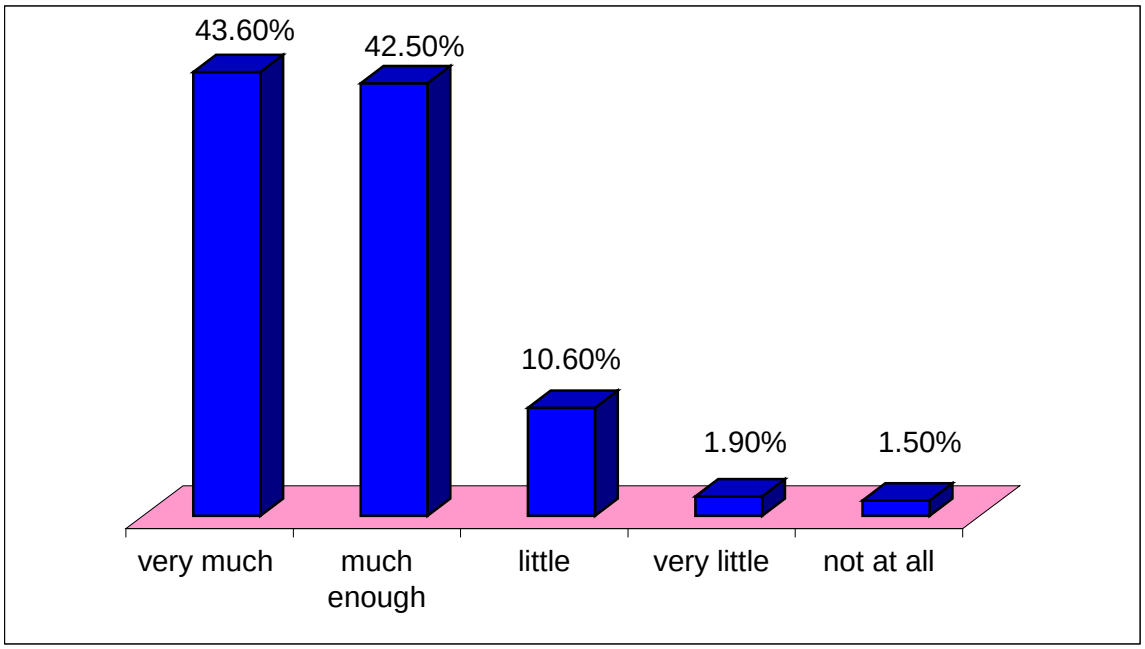



**Diagram no.78 – Does your physician's opinion count?**

Among the 612 athletes taking very much into consideration the physician's opinion, 34 of them (10 juniors and 24 seniors) declare to be tempted to use such substances and 12 of them (5 juniors and 7 seniors) declare that they have used or shall use in the future such substances.

The numeric differences between seniors and juniors are not statistically significant (Diagram no. 79). The personality tests do not reveal differences as compared to the general characterization of the investigated pool.

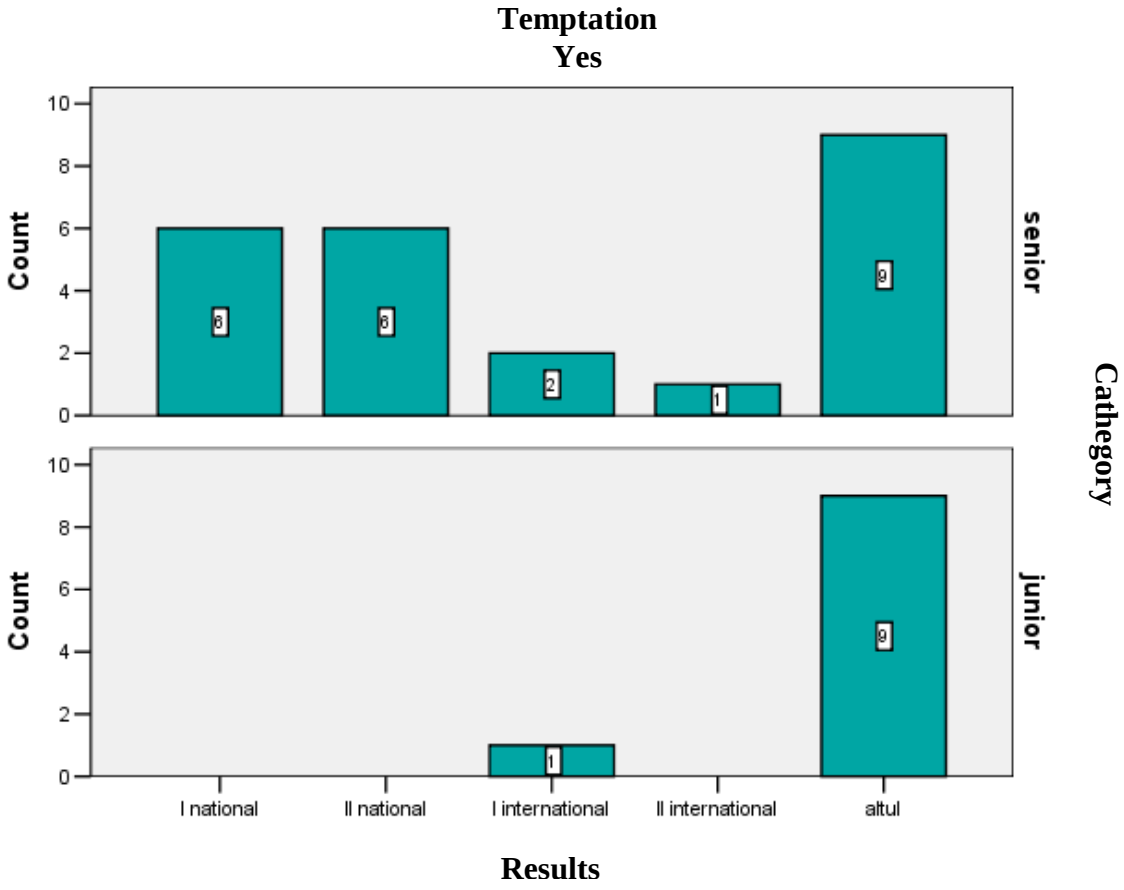



**Diagram no. 79 – Relation between the physician's influence – temptation to use – category and result**

*Although most of the athletes wouldn't appeal to these substances, it can be noticed that the athletes caring about the physician's opinion can use prohibited substances too and, obviously, a question arises whether they have his agreement or not. Among the athletes found in this situation, most of them are juniors ranked on the first position in international competitions or having other results.*

***The influence of the coach***

59.5% (836) of the athletes take very much into consideration the coach's opinion, 33.9% (476) much enough, 4.6% (64) little, 1.4% (19) very little, 0.6% (9) not at all. (Diagram no. 80)

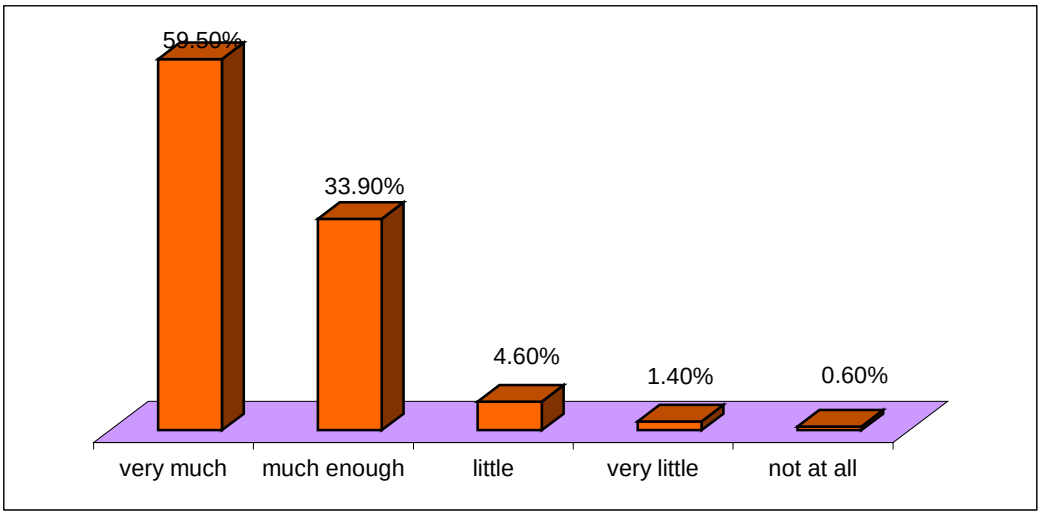



Diagram no.80 - Does your coach's opinion count?

Among the 836 de athletes (58.5%) who care very much or much to the coach's opinion, 21 athletes (15 seniors) have used such substances, 3 juniors are still using, and 33 de athletes (13 juniors among them) declare that they are going to use.

Within this category, 37 respondents would be tempted to use (most of them seniors), and 77 are not decided. Among those who are tempted to use, most of them are juniors, 12 of the 19 athletes, having „other results".

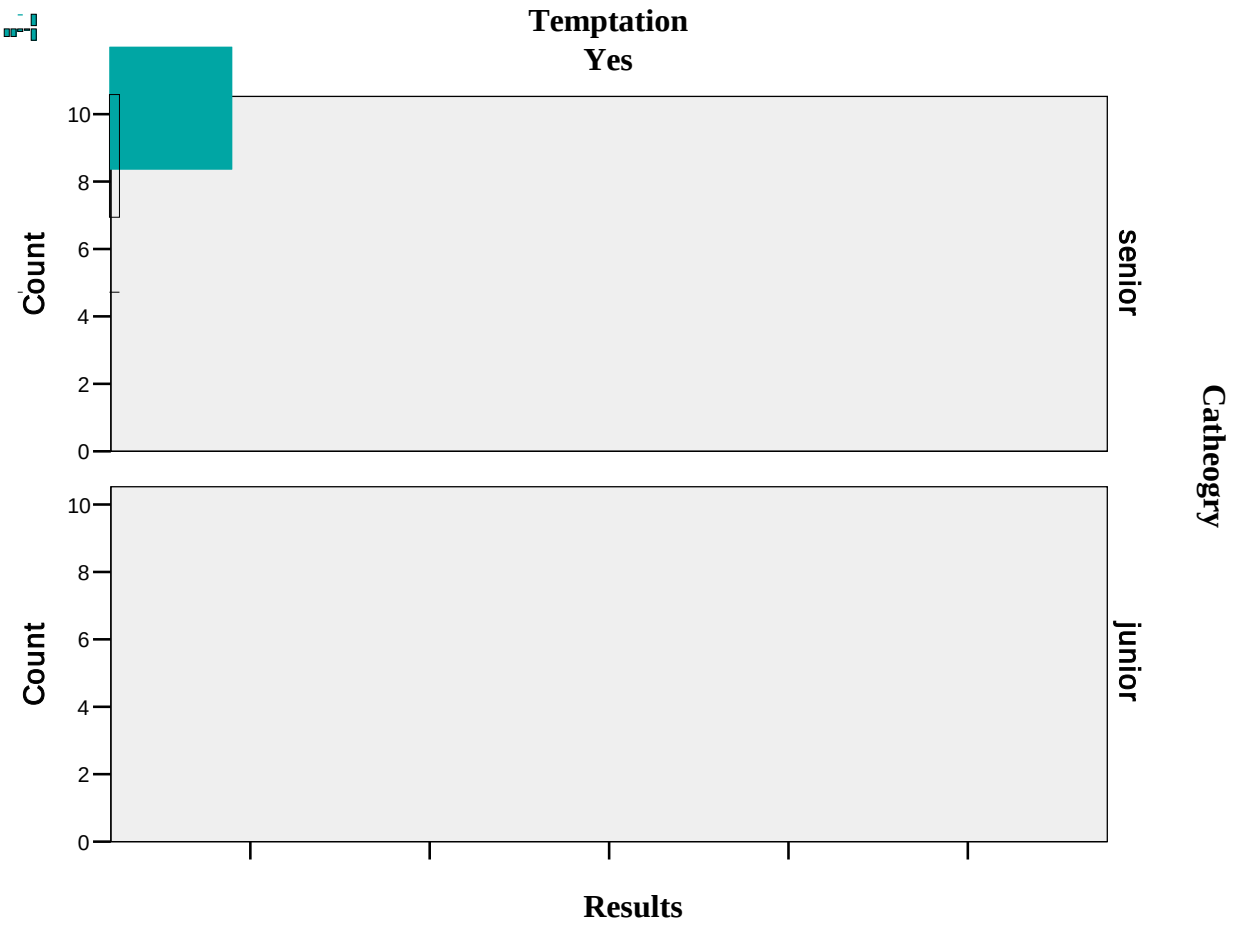



**Diagram no. 81 – Relation between athletes who care about the coach's opinion – temptation to use – result and category**

After analyzing this item, we can state that, although the athletes take into consideration the coach's opinion, the juniors with less notable results are more exposed to the risk of using.

17.8% (250) of the athletes take very much into consideration the team colleagues' opinion, 55.5% (779) much enough, 21.2% (298) little, 3.8% (54) very little and 1.6% (23) not at all. (Diagram no. 82)

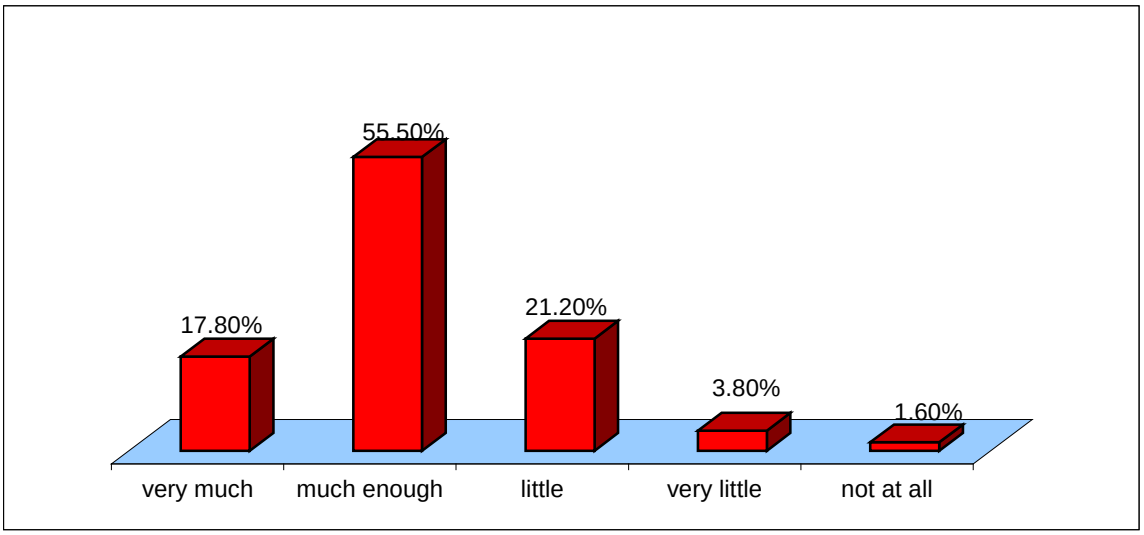



**Diagram no. 81 – Does your colleagues' opinion count?**

Among the 250 athletes who take very much into consideration the team colleagues' opinion, only 20 athletes declare that they use (4 juniors), have used (6 seniors, 2 juniors) or are ready to use (6 juniors, 2 seniors) doping substances.

With respect to the temptation, it is equally manifesting on juniors and seniors (16 persons – 8 juniors, 8 seniors). As for the undecided ones, it can be noticed that their number is bigger on juniors (14) than on seniors (9). The personality tests didn't highlight differences as compared to the group model. (Diagram no. 82 )

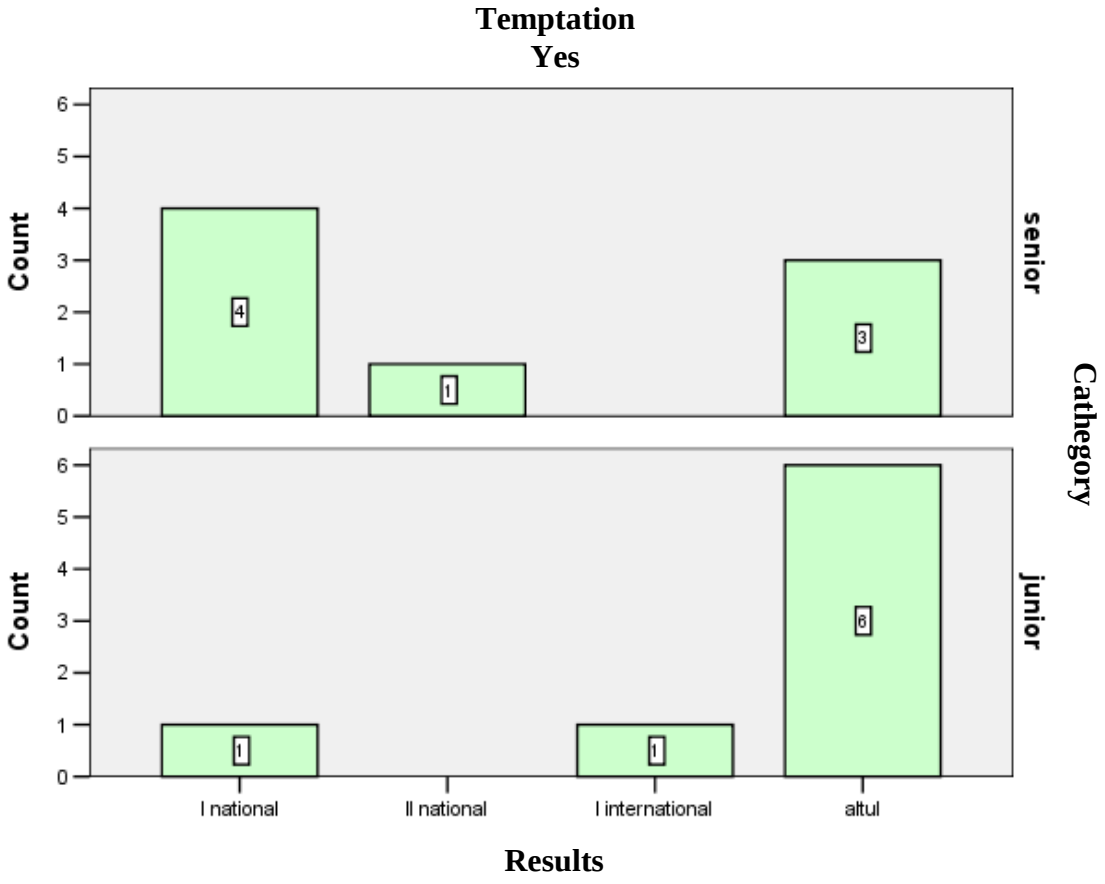



**Diagram no. 82 – Relation between the athletes who take into consideration the colleagues' opinion – temptation to use – result and category**

*Even if the differences between seniors and juniors are not statistically significant, there is the possibility for the junior athletes to be more tempted to use doping substances when their team colleagues incite them to do so. The juniors who are under the group's influence are more exposed to the risk of using doping substances.*

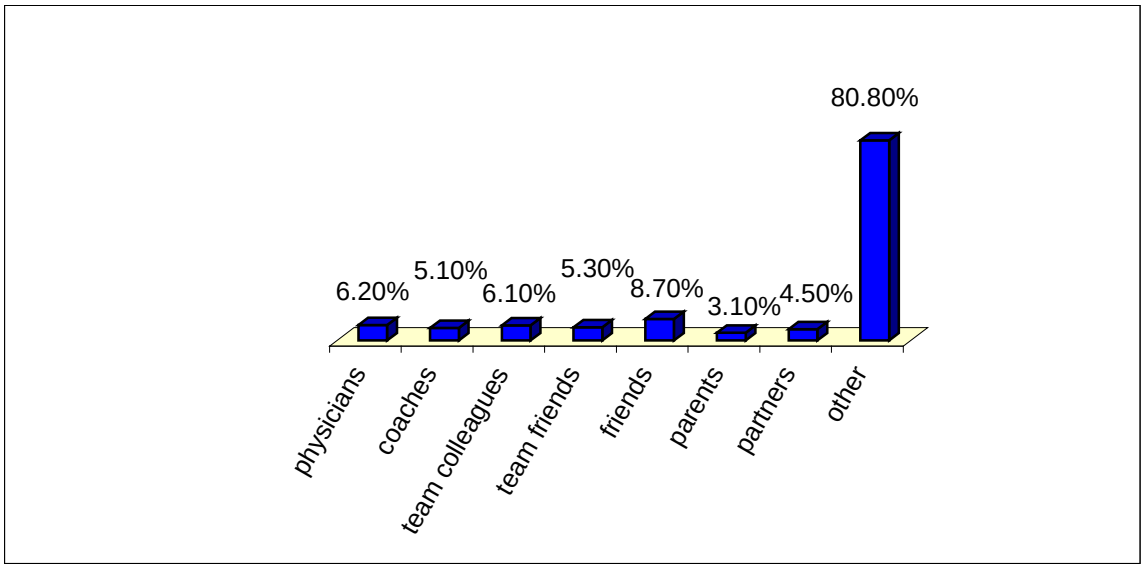
19.8% (278) of the athletes take very much into consideration the team friends' opinion, 55.8% (783) much enough, 20.3% (285) little, 3.1% (43) very little and 1.1% (15) not at all.

20.9% (293) of the athletes take very much into consideration the private life friends' opinion, 50.9% (714) much enough, 23.3% (327) little, 3.3% (47) very little, 1.6% (23) not at all.

32.5% (457) of the athletes take very much into consideration the partner's opinion, 49.4% (693) much enough, 12% (169) little, 3.1% (43) very little, 3% (42) not at all.

6.2% (87) of the athletes declared that the physician would agree for them to use prohibited substances and methods, 5.1% (72) the coach, 6.1% (85) the team

colleagues, 5.3% (75) the team friends, 3.1% (44)the parents, 4.5% (63) the partner, 8.7% (122) the friends. (Diagram no. 83)




**Dia**

**Diagram no. 83 – Who would approve for you to use prohibited substances?**

Among the 87 athletes who declare that the physician would agree the use of prohibited substances, 8 athletes (4 juniors, 4 seniors) declare that they have already used, 6 are still using (5 juniors among them), and 12 admit that they could use in the future (7 juniors and 5 seniors), regardless the result achieved until the present moment.

At the same time, it can be noticed that 24 athletes are tempted to use prohibited substances and 10 are undecided. Even if the differences between juniors and seniors are not significant, the number of juniors is bigger for both categories (13 juniors, 11 seniors, respectively 8 juniors, 2 seniors). (Diagram no.84)

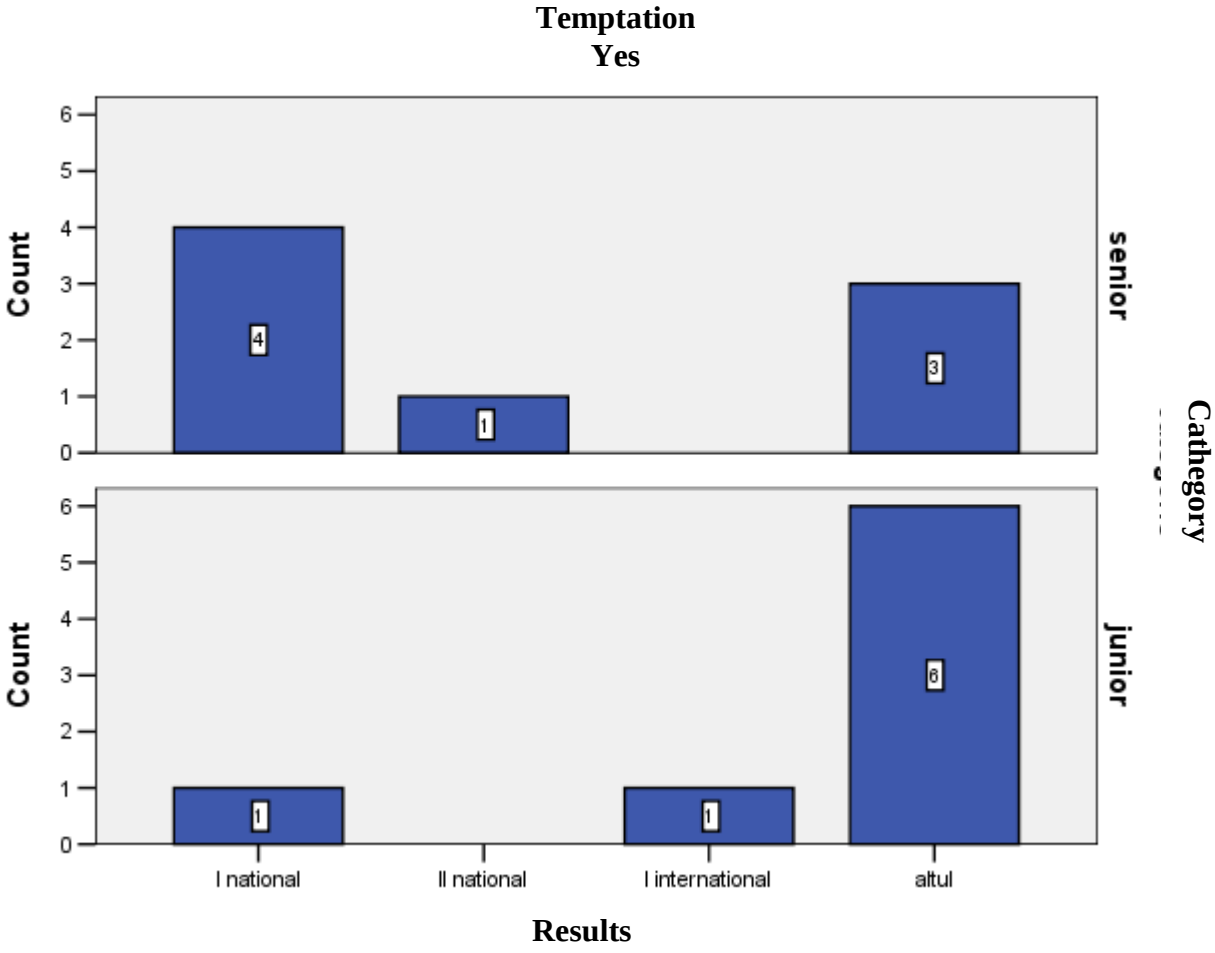



**Diagram no.84 – Relation between the athletes who take into consideration the physician's opinion – temptation to use – result and category**

*Regardless the result achieved until the present moment, the juniors are more exposed to the risk of using doping substances than the seniors, whn they have the physician's agreement.*

*6. Miscellaneous*

Experiences, control, doping use, smoking, drinking

„You have used once such a substance. You were satisfied with its effect. Now, you realize that its effect is diminishing and you return to the previous level. Do you think it would be difficult for you not to use prohibited substances or methods in such situation?" 8.4% (118) very difficult, 14.5% (203) difficult, 25.5% (358) neither difficult nor easy, 18.4% (259) easy, 33.2% (466) very easy. (Diagram no.85)

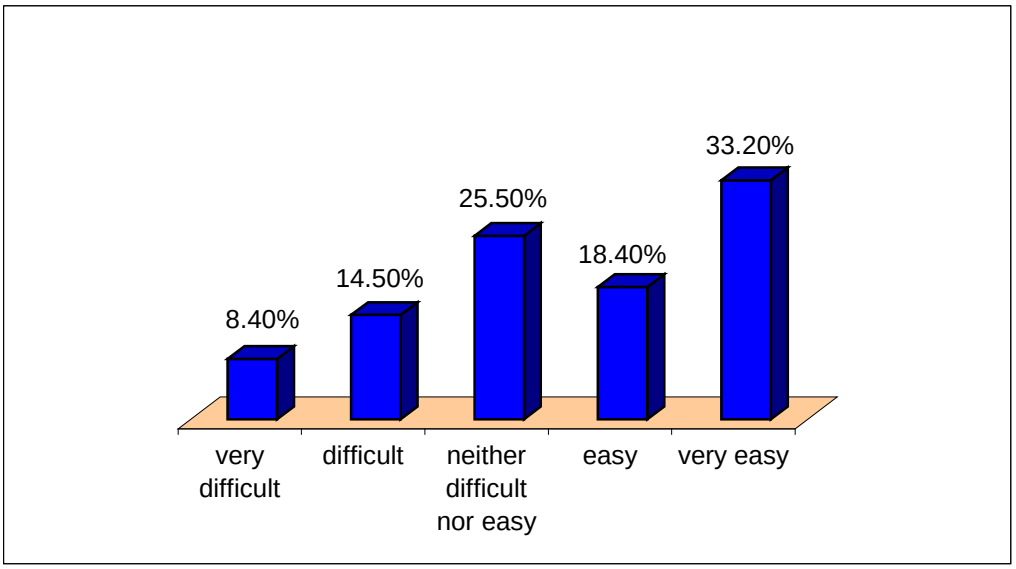



**Diagram no. 85 – It would be difficult for you to use if you have used once and you were satis fied with the result?**

Among the 118 athletes who declared that it would be difficult not to use such substances, it can be noticed that 33 have used, are using or could use. We have to underline that none of the respondents have international results.

At the same time, it can be noticed that on these athletes, the tension-anxiety and anger values are over the group average.

*We can state that the athletes with international results are less exposed to the risk of using prohibited substances. Despite these, accentuated momentary states could stand at the basis of such decisions taken by the athletes with other results.*

„You want to participate to sport events but you don't think you have a chance unless using performance enhancing substances. You think it would be difficult for you not to use prohibited substances or methods in such situation?" 5.9% (83) very difficult, 10.8% (152) difficult, 23.7% (333) neither difficult nor easy, 23.4% (328) easy, 36.2% (508) very easy. (Diagram no.86)

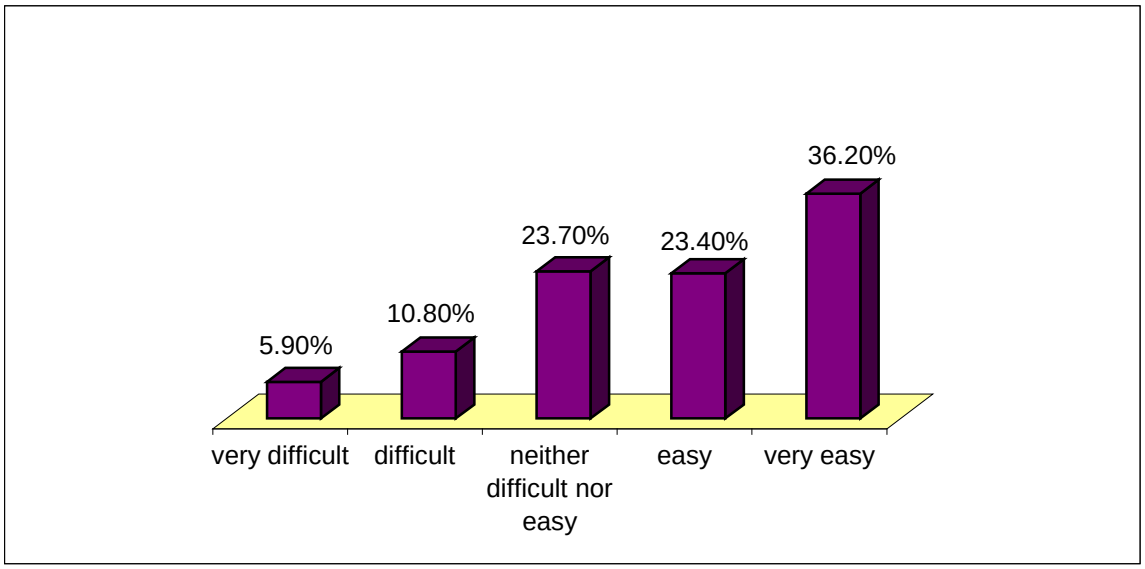



**Diagram no. 86 – It would be difficult for you not to use if you want to participate to sport events?**

235 athletes consider that it would be difficult for them not to use if they know that the other athletes are using. 51.5% are juniors and 48.5% are seniors. 59.6% are athletes with „other results" than the first three places on national and international level. Even if 208 of them wouldn't use prohibited substances, 27 declare that they have already used or they could use in the future, while 26 declare that they would be tempted to use. Among them, only one athlete has international results.

*As in the previous item, it can be noticed that the temptation to use is equally elevated on juniors and on seniors, and particularly on athletes with less valuable results, who consider that the other athletes are using prohibited substances.*

Analyzing the answers from the coaches' questionnaires, we found out many aspects concerning coaches' perception and attitude about doping phenomenon. We keep in our mind only the relevant results for the educational programs of ANAD.

The majority (417 subjects, 83,9%) knows the official documents which settled the anti-doping activity and the conditions to obtain the TUE, even there are 78 coaches (15,6%) that don't have this information. (Diagram no.87)

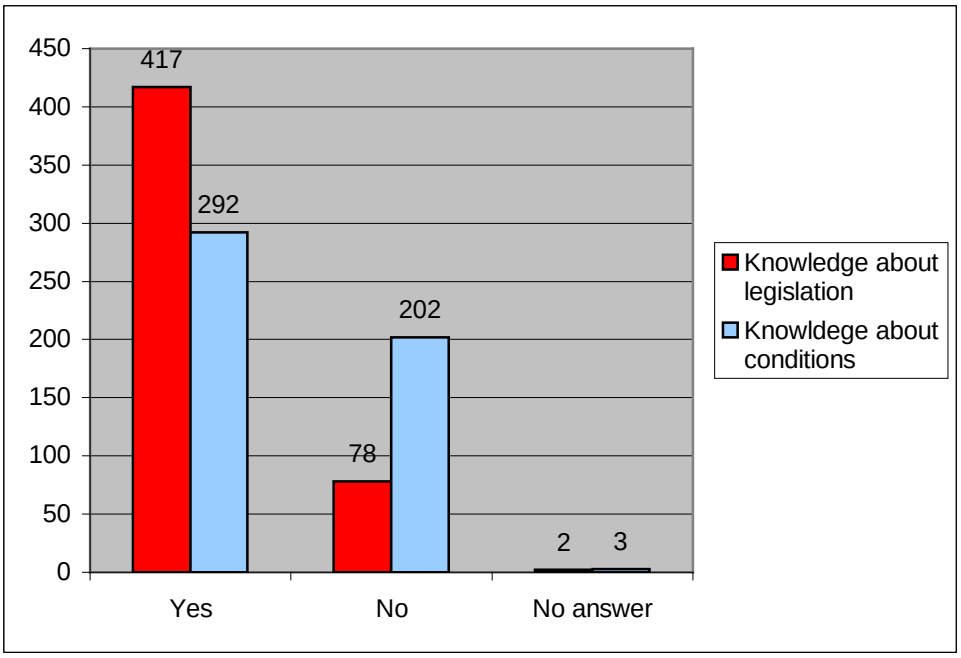



**Diagram no.87 – Coaches' knowledge about the official documents and about the conditions of obtaining TUE**

Also, the coaches know the negative effects of prohibited substances and are agree with the sanctions applied to the positive tested athletes. (Diagram no.88)

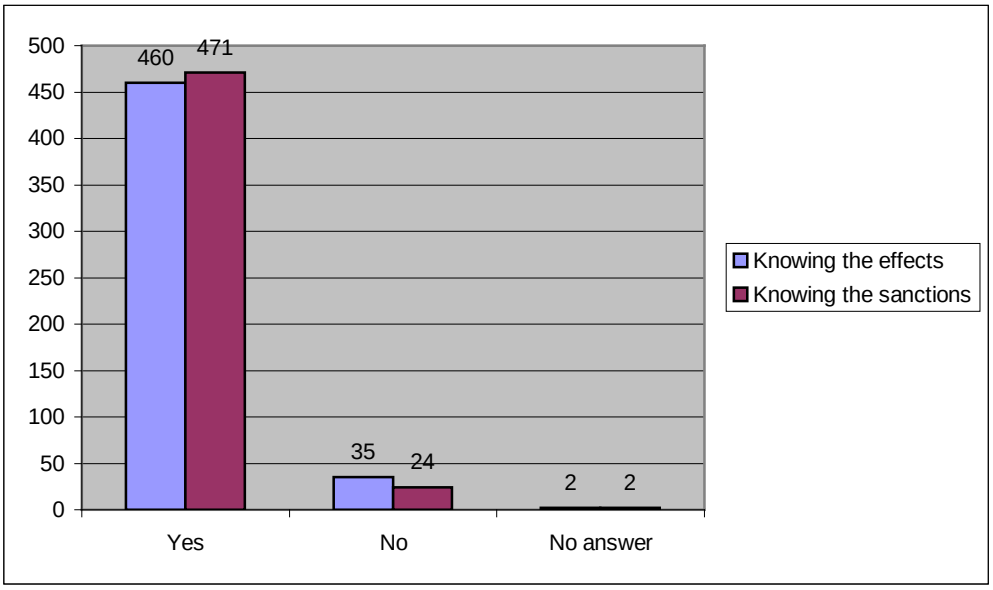



**Diagram no.88 – Coaches' knowledge about the negative effects and about the sanctions for the using of prohibited substances**

At the question about the factors which encourage the athlete to use the prohibited substances, the answers put in evidence that most of the coaches consider that this is the consequence of the social ambiance/entourage

influence(25%). 18% consider that the athletes try to obtain high performances in a shorter time, 13% express the affirmation desire, 9% of them consume for the material advantages, and few coaches present at reasons lack of information, fear to compete, increase the muscular capacity, but also, the family influence and the activity from fitness gym (less than 1%).

| **Trainer's opinion about the factors that influence the using of prohibited substances** | **Nr. of subjects** | **Percent** (%) |
|---|---|---|
| Desire to obtain high performances in a shorter time | 104 | 20.9 |
| Result | 85 | 17.1 |
| Affirmation desire | 71 | 14.3 |
| Team influence | 57 | 11.5 |
| Material factors | 43 | 8.7 |
| Family | 24 | 4.8 |
| Lack of information | 18 | 3.6 |
| Lack of confidence | 10 | 2 |
| Lack of information about the risk | 8 | 1.6 |
| Muscular capacity | 4 | 0.8 |
| Fitness gym | 3 | 0.6 |
| Fear to compete | 2 | 0.4 |
| Family troubles | 2 | 0.4 |
| Body building magazines | 1 | 0.2 |
| Didn't know the answer | 30 | 6 |
| Non answer | 35 | 7 |

**Table no.31 – Factors that influence the use of prohibited substances**

Through the subjects, 7% didn't answer to this question. The frequency of non-answer is higher at the coaches with less experience (between 0 to 5 years).

In which concern the educational factors responsible with athletes anti-doping education, we emphasize that 23,2% of them mention the coach/trainer, which responsibility is shared with the physicist, with the psychologist, with the school and with the family. 14,3% eliminate the role of the family, but they maintain the main role of the coach/trainer. 8,9% appreciate that only the coaches have to assume the responsibility for this type of education, 7,4% consider that ANAD plays a decisive role, and also 7,4% associate an exclusive educative role to specialists (coach, doctor, psychologist, manager). 6.4% include also the media through these influences and 6,4% consider that the school have to assume itself an active role in anti-doping education. (Diagram no.89)

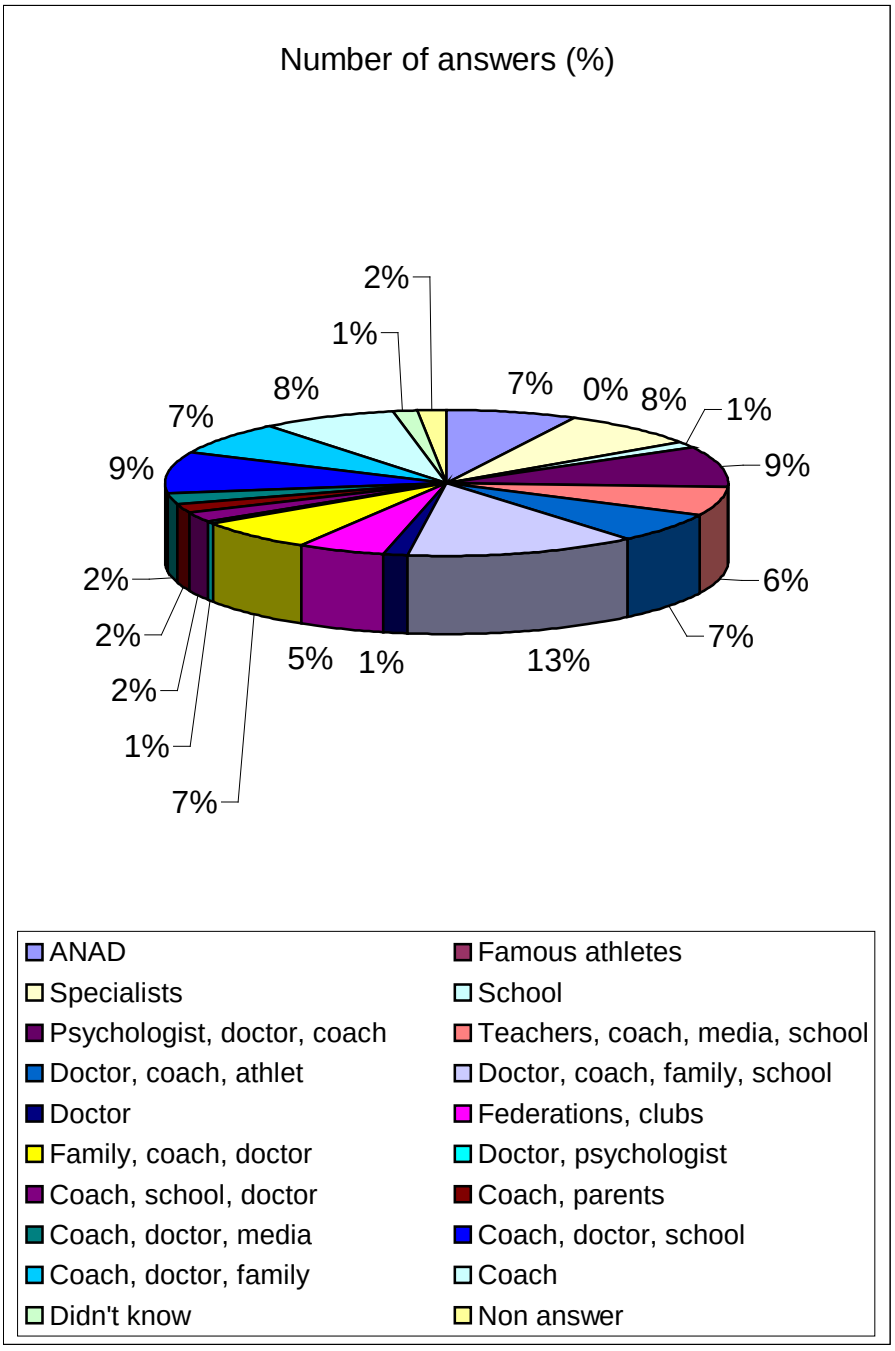



**Diagram no.89 – Educational factors involved in athletes' anti-doping attitude**

These results put in evidence that the coach represents a valuable partner of ANAD, able to sustain its educational policies. This information reinforce the idea that also the coach needs to be sustain by the others, members of interdisciplinary team or of the social factors. The coaches assume an active role in athletes' anti-doping education, 87,5% from them sending specific information and 84,7% appreciating that they are interested how their athletes achieve the objectives.

Even the athlete was mentioned only by a single coach as an educative factor, from our analyze results that the most of the coaches are agree that the sportsmen have to know the substances that they use. (Diagram no.90)

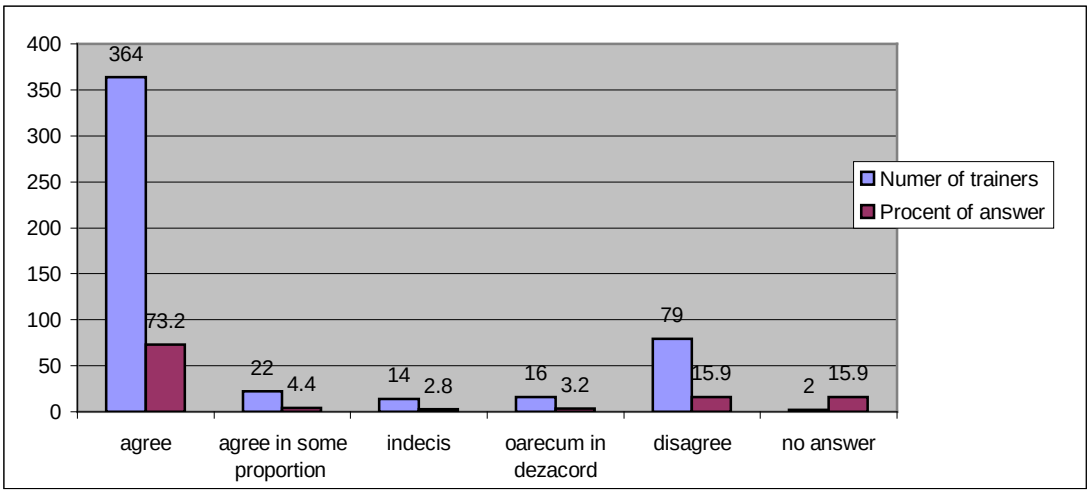



**Diagram no.90 – Athletes' responsibility about used substances**

An encouraging aspect for the premises of the educational programs of ANAD is that majority don't consider that disadvantages of prohibited substances are exaggerated. (51,3%). Even in these conditions, 23,9% consider that the effects of prohibited substances are presented in an unrealistic manner, the main argument being to discouraged its usage by the athletes. (Diagram no.91)

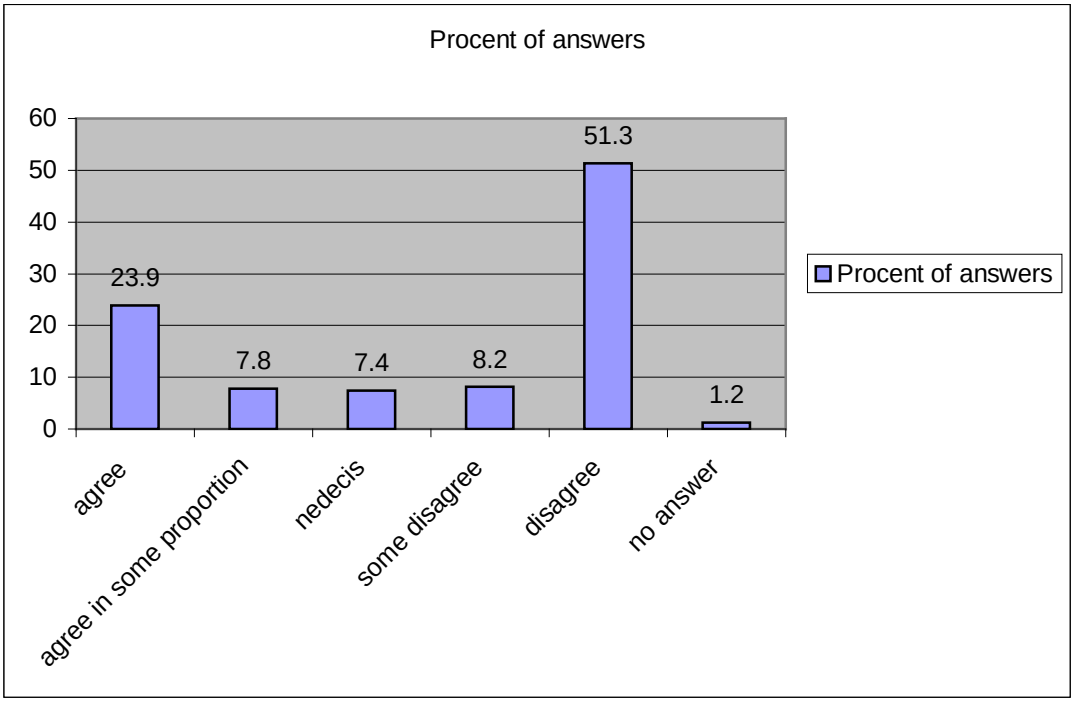



**Diagram no.91 – Coaches' opinion about the exaggeration of disadvantages of prohibited substances usage**

These opinion explain why the coaches' attitude about those get in the act is 23,3% rough and 2,5% tolerant. Of course, the majority are agree with rough sanctions (74%), but the others opinion have to be kept in attention. 7,2% coaches consider that informing the athletes about the doping substances could have the opposite effect by encouraging them to consume. (Diagram no.92)

Certainly, the manner to perceive information is different and depends about the presentation quality which athlete get in the contact, and also, by the cognitive and emotional impact. But all these answers could raise another question: if it is possible this attitude to represent the manipulation intention of the coaches and their wish to remain the only educative factors in sportsmen careers.

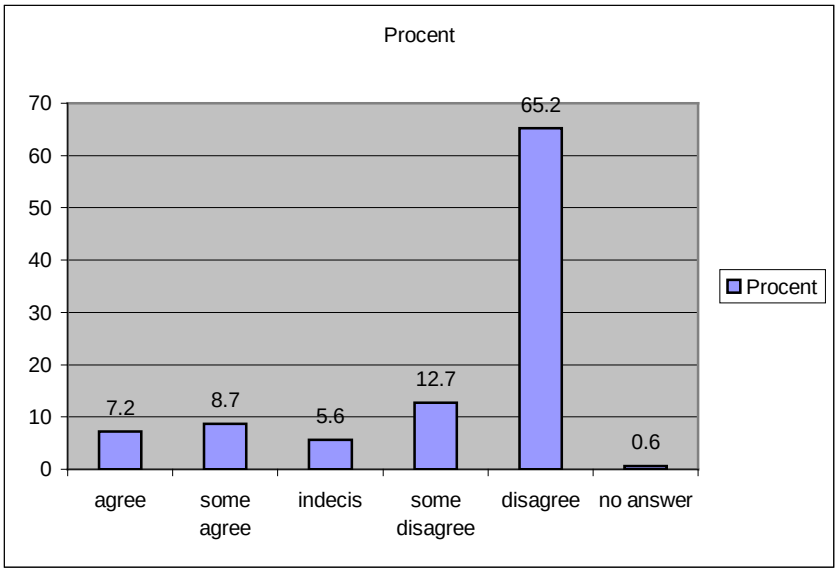



**Diagram no.92 – Coaches' opinion about the influence of information on athletes' anti-doping attitude**

Through the educative measures proposed by ANAD, those concerning the professional counseling of the athletes represents one that is accepted by 86,4% of the coaches. Certainly, some specialized counseling services could sustain the effort of the other educative factors

## CHAPTER 6 - DISSEMINATION PLAN

Parts of this project were used in some scientific congresses or conferences. (Table no. )

| | DATE | DISSEMINATION ACTIVITIE | SUBJECT | TYPE |
|---|---|---|---|---|
| 1 | September 2008 | International Conference "Current Challenges in Anti-Doping Activity", *RNADA, Bucharest, Romania* | „Athlete's Attitude Regarding Doping Substances Use " | Conference |
| 2 | September 2008 | International Conference "Current Challenges in Anti-Doping Activity" *RNADA, Bucharest, Romania* | „Doping Attitudes on Romanian Coaches" | Conference |
| 3 | October 2008 | The 15th Sport Medicine Balkan Congress "Health through Sport, Performance through Sports Medicine" *Romanian Sports Medicine Society, Bucharest, Romania* | „Doping Attitudes on Romanian Coaches and Doctors" | Congress |
| 4 | November 2008 | International Conference „Contemporary Paradigms in Sport Science", *University Babeş-Bolyai, Cluj-Napoca, Romania* | „Athlete's Attitude Regarding Doping Substances Use" - poster | Conference |
| 5 | November 2008 | International Conference „Contemporary Paradigms in Sport Science", *University Babeş-Bolyai, Cluj-Napoca, Romania* | - „Athlete's Personality Structure – Risk Factor in Doping Use" - poster | Conference |
| 6 | November 2008 | National Scientific Communication Session "News and Perspectives | „Athlete's Attitude Regarding Doping Substances Use II" | Conference |

| | | | | |
|---|---|---|---|---|
| | | in Physical Education, Sports and Kinetotherapy", *University "Spiru Haret", Bucharest, Romania* | | |
| 7 | December 2008 | Sports Medicine Seminary and first E.C.O.S.E.P.T Congress, *Thessaloniki, Greece* | „Doping Attitudes on Romanian Coaches II" | Congress |

## CHAPTER 7. CONCLUSIONS

The main conclusion of our research confirms in general the formulated hypothesis that the elements of the athletes' personality structure and the social environment may represent risk factors for the doping behavior.

The risk factors with important signification are the ones in the system of personality features, especially in the domain of attitudes, knowledge and moral beliefs, all of these related to the aspects specific to sport practice and entourage. The idea that the features of Type A of personality of Romanian athletes are part of the risk factors category is not confirmed well enough.

In the initial draft of the research's tasks we presupposed an equal ponder between the characteristics of Type A of personality, other personality features and the social-environmental factors as potential risk for doping behavior in some athletes.

The analysis of data collected revealed that the most important risk factors are *the attitudes* while the intimate, temperamental and less conscious structures are less important. The attitudes on their turn, by their nature, have an essential social cause.

We started our proper and realistic interpretation of there search data from the characteristics of the pattern. Most of our subjects are athletes of average level, amateurs. Consequently, the psychological model of the top athlete is not on this level; therefore these athletes are less pressed by the motivation of *performance at any cost* (intrinsic meta-motivation), the requests of the managers, coaches or mass-media.

The personality structure of the athletes - subjects to the research is featured by average values and the items of the applied tests, with plus and minus variations depending on the age or the experience in sport activity. Assertiveness and masculinity are expressed on superior level. Most of the

subjects show less aggressive trends (pacifism), reject adventurous lifestyle (sensation seeking, or risk taking) while their public self consciousness is not involved in the relationships with others. Juniors trend towards dogmatism, they are less distrait, while the seniors trend towards flexibility and they are more distrait.

The general behavior of the athletes is explained only partially by the personality features, many of them having also a native character. These features will mix with the attitudes in the biunivoque relation.

Especially significant for our theme is *the attitudes complex*, consisting in social-environmental influences, in particular the *entourage* (colleagues, coach, doctor, parents) and sport specific situations experienced by the athletes.

From the cognitive point of view, the athletes are informed about the anti-doping rules and the Prohibited List. Nevertheless, the information related to prohibited substances and methods is not a condition of doping behavior. The athletes with other results than the first three places in national and international competitions, seniors and juniors, and with results above average in tension and depression factors are tempted to use prohibited substances although they find useful the information on doping. The ones wishing high level results in sport competitions with states of minds like tension, depression, and fatigue over the average of the population are more tempted to use prohibited substances than the ones already consecrated.

From behavior and action point of view, most of the subjects, athletes, coaches or physicians reject the doping. The lines below highlight the risk aspect of the personal and social factors.

The influence of the physician or coach is equally exerted on the athletes, regardless the category – juniors or seniors and the previous results. However, the athletes, particularly the juniors, who have tension-anxiety or depressive states, are tempted to use prohibited substances.

With respect to the doping phenomenon, the athletes have the higher confidence in physician and coach. Older athletes are models for the younger ones and they are the ones who should be particularly worked with.

Even if they reject the doping idea when speaking about others, for themselves and their image (physical and psychical) they are ready to appeal to doping. We think that there is a need for more psychological advice centers for athletes and sport clubs to benefit of specific counseling.

The parents' influence is clearly and justifiable greater over the juniors who have tension, depression or fatigue states, being exposed to an unfair behavior.

At the same time, the group or the team to which the athlete is affiliated exerts favorable and unfavorable influences; when lacking the moral sense, it obviously represents a risk factor in doping behavior.

Through the educative factors, the coach represents an important ANAD partner. In the educational process could be involved also other factors, mentioned by the coaches, which can contribute to the implementation of educative programs of ANAD.

The school role in the educational process, including the doping topic, is very well recognized by many coaches. As a consequence he educative programs could be addressed to school population, involved or not in high performance sport, but a potential beneficiary of practicing physical exercises in free time.

It can be emphasized the necessity to continue the effort of informing the coaches about the using of TUE. Even the effects of prohibited substances are known, and the sanctions as well, the level of legislative knowledge is too low.

Finally, the results achieved through the empiric research conducted by NADA confirm the established hypothesis, providing a series of data that shall be useful in improving our anti-doping educational programs. We mention that most of the results achieved by us are also found on other pools of athletes of different nationalities.

The critical analysis of the *risk factors* should lead us to their transformation into doping *prevention and rejection factors*, through adequate educational means.

***

The educational dimension is very important in anti-doping activity, as it is the essence of the prevention principle, through which the clean sport's spirit can be maintained, as it is settled in the World Anti-Doping Code.

We think that there is extremely necessary to widen the popularization of the anti-doping rules among minor athletes, particularly male groups. Together with the experience gained, the athletes are more aware of their specific statute (elite level athlete) and more responsible, but also more ready to cheat in order to win.

The qualitative improvement of the education level is absolutely necessary in the context of some complex changes on family life, community, multicultural society and globalization level. A quality education means to apply the diversity model by a different approach, development of projects that involve students, different categories of teachers, educational partners, starting with the parents, civil society, mass-media and community.

To this end, the National Anti-Doping Agency shall promote a campaign addressed to young athletes, who are in course of consolidating their personality. Elite level athletes, juniors and seniors, represent the most important target group for the campaigns and activities conducted by the Agency.

# CHAPTER 8 – ACCOUNTANT ACTIVITIES

The financial-accountant activities have been developed by the relevant department within NADA and coordinated by Mrs. Maria Valcan, the Director of Economic Department. The main task was to spend the amounts allocated to the project, in accordance with the approved expenses budget.

For the first year of the project, a total amount of 7500 USD has been allocated. The amount was exchanged in the national currency at an exchange rate of 2.5287 Leu – USD.

The expenses are centralized in the following table:

| No | Detailed expenses | Document | Number/Date | Amount | | Exchange rate |
|---|---|---|---|---|---|---|
| | | | | Lei | USD | |
| 1 | Audio recorders | Invoice | 11471674/09.05.2007 | 2022.96 | 800 | 2.5287 |
| 2 | Memory sticks | Invoice | VF254/18.10.2007 | 505.74 | 200 | 2.5287 |
| 3 | Paper sheets | Invoice | 11896208/15.11.2007 | 505.74 | 200 | 2.5287 |
| 4 | Toner for printing | Invoice | ID 69/01.08.2007 | 758.61 | 300 | 2.5287 |
| 5 | Correspondence with the athletes | Invoice | | 1264.35 | 500 | 2.5287 |
| 6 | Envelopes | Invoice | 1122946/12.03.2007 | 252.87 | 100 | 2.5287 |
| 7 | Paper cases and ball pens | Invoice | 1122946/1122947/ 12.03.2007 | 758.61 | 300 | 2.5287 |
| 8 | Files | Invoice | 1122945/12.03.2007 | 758.61 | 300 | 2.5287 |
| 9 | Case files | Invoice | 1122946/12.03.2007 | 758.61 | 300 | 2.5287 |
| 10 | Transportation | Deduction | 1061/27.06.2007 | 1264.35 | 500 | 2.5287 |
| 11 | Research assistant services | Additional Act to the ILC (individual labor contract) | 55/07.05.2007 59/21.05.2007 | 6321.75 | 2500 | 2.5287 |
| 12 | Management expenses | - | - | 3793,05 | 1500 | 2,5287 |
| | TOTAL | | | 18965.25 | 7500 | |

For the second year of the project, a total amount of 12.500 USD has been allocated. The amount was exchanged in the national currency at an exchange rate of 24.506 Leu – USD

| No | Detailed expenses | Document | Number/Date | Amount | | Exchange rate |
|---|---|---|---|---|---|---|
| | | | | Lei | USD | |
| 1 | SPSS | Invoice | 07076/04.08.2008 | 14,704 | 6,000 | 2.4506 |
| 2 | Toner for printing | Invoice Invoice | 17107/05.06.2008 5410/05.06.2008 | 1,225 | 500 | 2.4506 |
| 3 | Paper cases and ball pens | Invoice | VF733/09.09.2008 | 1,225 | 500 | 2.4506 |
| 4 | Transportation | Invoice | 806145767/22.02.2008 | 3,676 | 1,500 | 2.4506 |
| 5 | Research assistant services | Additional Act to the ILC (individual | 55/07.05.2007 59/21.05.2007 | 3,676 | 1,500 | 2.4506 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | labor contract) | | | | |
| **6** | Management expenses | - | - | 3,676 | 1,500 | 2.4506 |
| | **TOTAL** | | | **28,182** | **11,500** | |

| CLUBS AND SPORTS ASSOCIATIONS |
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| A.S. Ripensia Timişoara |
| AS Electrica Timişoara |
| AS LM |
| AS Mihai Viteazul |
| AS Rădeşti |
| AS Smeeni Buzău |
| AS Textila |
| ASIA Harman Braşov |
| ASLM Alba Iulia |
| ASLM AS Juvenil |
| ASLV Alba Iulia |
| Asociația Sportivă Tenis Club 13 Sf Gheorghe |
| B.C Golf |
| BC ICIM Arad |
| CDS Mihai Petre |
| Ceahlăul Piatra Neamț |
| Cetatea Făgăraş |
| CF Predeal |
| CF Unirea Paşcani |
| Chimia RM Vâlcea |
| CL Sportiv Şcolar |
| Club Sportiv Municipal Medgidia |
| Club Sportiv Şcolar Gheorgheni |
| Clubul Copiilor din Zărneşti |
| Clubul Fitness |
| Clubul Român de Kendo |
| Clubul Sportiv nr 2 Constanța |
| Clubul Sportiv Şcolar |
| Clubul Sportiv Şcolar Caransebeş |
| Clubul Sportiv Şcolar CCS |
| Clubul Victoria Țăndărei |
| Clubula Avicola Sibiu |
| Constanța |
| CPS şi SFTFA |
| CS  Reşița |
| CS Agressione Cluj |
| CS Aluminiu Alro Slatina |
| CS ANEFS |
| CS Astra Arad |
| CS Atlas |
| CS Aversa |
| CS Avicola Sibiu |
| CS Colosseum Giurgiu |
| CS Delfinul-LER |

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| CS Dinamo |
| CS Dinamo Braşov |
| CS Dunărea |
| CS Dunărea Giurgiu |
| CS Farul Constanța |
| CS Integral Buzău |
| CS Național Iaşi |
| CS Năvodari |
| CS Nova Force |
| CS nr 1 Constanța |
| CS Nr 2 Constanța |
| CS Olimpia |
| CS Poli Argo Unirea Iaşi |
| CS Poli Iaşi |
| CS Politehnica Iaşi |
| CS Portu Constanța |
| CS Progym Gheorgheni |
| CS Recon Craiova |
| CS Sailura Buzău |
| CS Samurai OPS Sf Gheorghe |
| CS Satu Mare |
| CS Scorilo Caransebeş |
| CS Steaua |
| CS Şantierul Naval Tulcea |
| CS Tomis Constanța |
| CS Triumf Bucureşti |
| CS U Gens |
| CS Unirea Alba - Iulia |
| CS Unirea Constanța |
| CS Universitatea Aurel Vlaicu |
| CS Universitatea Cluj |
| CS Universitatea Craiova |
| CS Universitatea Reşița |
| CS Universitatea Reşița-CS Murariu Reşița |
| CS Viitorul Georgheni |
| CS Voința Nana |
| CSCondorul Lilieci |
| CSM |
| CSM Arad |
| CSM Braşov |
| CSM Călăraşi |
| CSM Codlea |
| CSM Craiova |
| CSM CSS Sf Gheorghe |
| CSM LMK Sf Gheorghe |

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| CSM Lugoj |
| CSM Mediaş |
| CSM Ploieşti |
| CSM Reşiţa |
| CSM SF Gheorghe |
| CSM Timişoara |
| CSO Sinaia |
| CSS |
| CSS  Buzău |
| CSS 1 Şcoala Sportivă Farul Constanța |
| CSS 4 Bucureşti |
| CSS Bacău |
| CSS BS |
| CSS Buzău |
| CSS Caransebeş |
| CSS Călăraşi |
| CSS Cernavodă |
| CSS Cetate Deva |
| CSS Constammental Buzău |
| CSS Gheorgheni |
| CSS Gheorgheni + Sport Club Miercurea Ciuc |
| CSS Gloria |
| CSS Gloria Arad |
| CSS Gloria-ASM Arad |
| CSS Hidroconstrucția Slatina |
| CSS I Constanța |
| CSS Inegral |
| CSS Kos Karoli Sf.Gheorghe |
| CSS Mediaş |
| CSS Odorheiul Secuiesc |
| CSS Oneşti |
| CSS Politehnica Iaşi+CSS Dinamo Bucureşti |
| CSS Roşiorii de Vede |
| CSS Rulmentul Braşov |
| CSS Sibiu |
| CSS Şoimii Sibiu |
| CSS Şoimii Sibiu+"Florin Teodorescu-Timişoara |
| CSS Ştiința Bacău |
| CSS Târgovişte |
| CSS Toplița |
| CSS Triumf |
| CSS UMK Sf Gheorghe |

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| CSS Viitorul Cluj- U Gens |
| CSS-CSM Reşiţa |
| CST Alexandria |
| CSTA Bucureşti |
| CSU Reşiţa |
| CSU TM; CSM Reşiţa |
| Dierna |
| Dinamo Braşov |
| Elecroaparataj |
| Electroprecizia Săcele |
| Extreme Dance |
| F.C. Ripensia 2000 Timişoara |
| F.C. Vulturul Lugoj |
| FC Dunărea Călăraşi |
| FC ELPIS |
| FC Iuventus Bucureşti |
| FC Pambac Bacău |
| FC Plavi Delia Sampertu Mare |
| FC Portul Constanţa |
| FC Râşnov |
| FC Ripensia 2000 Timişoara |
| FC Steaua |
| FC Tivoli |
| FC Top Alumino |
| FC UTA Arad |
| FCM Bacău |
| FCM Braşov |
| FCM Câmpina |
| Gala Deva |
| Grup Şcolar Sportiv |
| Grupul Sportiv Şcolar Buzău |
| HC Arad |
| HC Felcsik |
| HC Golden Kids BV |
| HC Madinson Travel Junior Sf Gheorghe Covasna |
| HC Odorheiul Secuiesc |
| HC Safilar Arad |
| Hobby Dana Bucureşti |
| Ippon Mediaş |
| Kiova Pucioasa |
| Lia Manoliu Bucureşti |
| Liceul cu Program Sportiv |
| Liceul cu Program Sportiv Slatina |
| Liceul Mikes Kelmen |
| Liceul Sportiv |

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| Liceul Sportiv Alba Iulia |
| Liceul Toeretic Traian Vuia Reşiţa |
| LPA Arad |
| LPS Alba Iulia |
| LPS Banatul |
| LPS Buzău |
| LPS Craiova |
| LPS CSS Piatra Neamț |
| LPS Deva |
| LPS Iaşi |
| LPS Iolanda Balaş Buzău |
| LPS Lugoj |
| LPS Nadia Comăneci Oneşti |
| LPS Piatra Neamț |
| LPS Roman |
| LPS Satu Mare |
| LPS Slatina |
| Luceafărul 2000 |
| Motrul Oradea |
| Muncitorul Reşiţa |
| Palatul Copiilor Constanța |
| Pamfil Şeicaru Ciorogârla |
| Pas in doi |
| Perla Basarabiei |
| Petrol Berca |
| Poli Argo Unirea Iaşi |
| Poli Iaşi |
| Politehnica Iaşi |
| Progym Gheorgheni |
| Rapid |
| RC Griviţa |
| RC Laur Iaşi |
| RC Select Bucureşti |
| Ripensia |
| Ripensia 2000 Timişoara |
| SCM Craiova |
| Select Suceava |
| Societatea de Patinaj Sibiu |
| Someşul |
| Spartacus |
| Sport Club |
| Sport Club Judo |
| Sport Club Miercurea Ciuc |
| Sport Club Municipal Braşov |
| Stăruinţa Baia |
| Ştiinţa Bacău |

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| Ştiința Municipal Dedeman Bacău |
| T.Cerna Constanța |
| TC Atlas Craiova |
| TC Dafora Mediaş |
| TC Olimp Craiova |
| TC Tivoli |
| TCM Autoturisme |
| Tenis Club Bucureşti |
| Top Alumino |
| Traian Vuia |
| Traian Vuia Reşița |
| UHCM TM |
| UMT |
| Universitatea Reşița |
| UNT Alba Iulia |
| Venus Piatra Neamț |
| Viitorul Rusețu |
| Volei Club Banatul |
| Volei Club Banatul Caransebeş |
| Vulturii Lugoj |
| Washi Craiova |
| Zalău |
| Zanshin Karate-Do Timişoara |
| Zanshin Timişoara |

| **UNIVERSITIES** |
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| Academia Națională de Educație Fizică şi Sport |
| Colegiul Național Emil Racoviță |
| EFS |
| Facultatea "Construcții de Maşini"Iaşi |
| Facultatea de Agricultură |
| Facultatea de Comerț- ASE Bucureşti |
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| Facultatea de construcții Gh Asachi |
| Facultatea de Drept Simion Bărnutiu |
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| Facultatea de Geografie |
| Facultatea de Horticultură Interbrands |

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| Facultatea de Litere, Comunicare şi Relaţii Publice Bacău |
| Facultatea de Management, Marketing şi Afaceri Economice |
| Facultatea de Mecanică |
| Facultatea de Medicină |
| Facultatea de Sociologie |
| Facultatea de Sport |
| Facultatea de Sport Tibiscus Timişoara |
| Facultatea de Ştiinţe ale Mişcării, Sportului şi Sănătăţii |
| Facultatea de Ştiinţe Politice Cluj |
| Facultatea de Tehnică Dentară Braşov |
| Facultatea de Vest |
| Facultatea EFS Al. Ioan Cuza |
| Facultatea EFS Bacău |
| Facultatea Eftimie |
| Facultatea George Bacovia |
| Facultatea Lucian Blaga |
| Facultatea Politehnica / Interbrands |
| Facultatea Sapienţia Sport Club |
| Facultatea SMSS Bacău |
| Facultatea Transilvania |
| FEFS |
| FEFS Craiova |
| FEFS Piteşti |
| FSMSS |
| FSMSS Bacău |
| FSMSS Studii Postuniversitare |
| IEFS |
| IEFS Piteşti |
| U.A.Cuza |
| UAV |
| UBB Cluj Napoca |
| UBB- Comunicare şi Relaţii Publice |
| UE Drăgan |
| Uiversitatea Ovidius |
| ULBS |
| Univ Transilvania |
| Universitatea Al Ioan Cuza |
| Universitatea Aurel Vlaicu- Facultatea de Finanţe Bănci |
| Universitatea Babeş Bolyai Cluj Napoca |
| Universitatea Bogdan Vodă |
| Universitatea de Farmacie şi Medicină Cluj |
| Universitatea de Medicină şi Farmacie Timişoara |
| Universitatea de Ştiinţe Agricole şi MedicinăVeterinară TM |
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| Universitatea de Vest " Vasile Goldiş" Arad |
| Universitatea de Vest Timişoara |

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| Universitatea de Vest Vasile Goldiş Satu Mare |
| Universitatea din Bacăi |
| Universitatea Eftimie Murgu Reşiţa |
| Universitatea George Bacovia |
| Universitatea Hyperion Caransebeş |
| Universitatea Lucian Blaga |
| Universitatea Sapientia |
| Universitatea Spiru Haret |
| Universitatea Ştefan cel Mare EFS |
| Universitatea Transilvania |
| Universitatea Vasile Goldiş |
| UniversitateaEcologică EFS |
| Unuversitatea Politehnică Bucureşti |
| UTP Calculatoare+Simens VDO Timişoara |

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