

**ABUSE DRUGS : A PREVENTION PROGRAM IN SCHOOLS**

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**Summary**

This paper describes an intervention developed during the school year 2010 - 2011 at the "Polo Tecnico Fermi-Gadda" of Naples, a secondary school. Purpose of the intervention was to integrate the drug-related information that teachers deliver to children, through meetings held by psychologists and neurologists. This to better define the characteristics of drugs, the consequences of their intake on brain systems, and their potential consequences. The sample on which the intervention was implemented consists of 278 students which are aged between 14 and 18 years. The intervention was divided into 5 sessions for a total of 15 hours. The arguments were presented in "ppt slides" and were treated so as to alternate to any exhibition an interactive phase in which the students were encouraged to freely express doubts, opinions and/or personal experiences. Before and after the intervention the students filled out a questionnaire (9 multiple choice questions) on arguments discussed. Even to the teachers (13 professors) was given a questionnaire on an assessment of the adequacy, clarity, and structuring interventions. The results indicate that the total number of students' errors is reduced significantly after the intervention, going from 47.5% to 27%. Regarding the different categories of information, the results show that the

knowledge on "general and specific aspects of drugs" have improved significantly (45.6% of errors before the intervention, 28.6% after it), as well as those on "mechanisms of addiction" (41.4% before, 15, 2% after). Even the knowledge about risk factors, the aspect on which the students have made the greatest number of mistakes, have benefited from the intervention (52.3% before, 33.7% after). The results showed a positive assessment of teachers about the information offered and about the mode of communication adopted. It also showed that the students have expressed an interest on the covered topics even after the intervention, during lessons in class. We think that specifically medical and neuropsychological intervention on drugs of abuse, in addition to what is normally done during school activities, could induce a documented reflection in young people on risks and consequences. Obviously, any prevention program should be continued over time, applied on a large scale and include different methods. The one here proposed seems to be effective to engage a mindful dialogue opened to confrontations.

**Keywords:** Abuse drugs, multidisciplinary intervention, prevention, adolescence

### **Introduction**

The intake of drugs by young people is a public health problem of deep importance (1,2). Data from the 2010 Report of the European Observatory on Drugs and Drug Addiction (OEDT), suggest that about 14 million Europeans aged 15 to 64 used to take cocaine in their lifetime and approximately 4 million used it during the last year (3). In the young people in Italy is estimated that the drug is extremely widespread (4). A proper information could represents an element of protection (5); an information campaign should be performed early because, among different age groups, those most at risk is made up of young people between 15 and 24 years. In this age also, as evidenced by several recent studies, the use of drugs can disturb the physiological brain maturation, leading to damage of specific brain systems responsible for brain plasticity and cognition (6,7).

As a matter of fact, during adolescence the brain changes and some areas, particularly those in the prefrontal cortex, widely mature during this lapse of time: these are the areas involved in decision-making skills, planning of projects and strategies, control of impulses and maintenance of attention. Therefore, the normal development of these areas can be damaged by drugs (6,8).

The problem related to drug use by young people also affects the schools, where prevention programs should be implemented: the European directives, particularly in recent years, strongly recommend the inclusion of prevention programs in all schools (4,9,10). This paper describes an intervention developed during the school year 2010 - 2011. It was implemented at the "Polo Tecnico Fermi-Gadda" of Naples, a secondary school which is a reference point in the region for the professional and scholastic education aimed to the job placement. Purpose of the intervention was to integrate the drug-related information that teachers deliver to children, through meetings held by psychologists and neurologists working in health facilities. This to better define the characteristics of drugs, the consequences of their intake on brain systems, and their potential consequences.

### **Methods**

The audience of students from the "Polo Tecnico Fermi-Gadda" is made up of a total of 1342 pupils, of whom 34 are female students and the rest male. Almost all the students come from North Naples, a wide area that includes the districts of Acerra, Afragola, Arzano, Casavatore, Casalnuovo, Casoria, Chiaiano, Giugliano, Marano, Miano, S. Pietro a Patierno, Secondigliano, Piscinola.

This area is characterized by significant organizational and educational problems, and the social unrest, particularly among young people, has spread. Due to these problems, over the years, there were promoted numerous prevention initiatives; despite this, the area is still "difficult". It is also characterized by families whose perspectives and opportunities are limited: the leisure time of young people is mainly occupied by meetings with friends and / or playing video games. The level of education of these families is generally very low. The sample on which the intervention was implemented consists of 278 students, representing about 20% of the total. In total, there were included 12 classes from both the "biennio", a two-year scholastic period, to the "triennio", a three-year scholastic period. All the students are aged between 14 and 18 years.

The intervention was divided into 5 sessions, each one about 3 hours long, for a total of 15 hours. During each meeting were developed the following topics: definition of drugs and different types of drugs, mechanisms by which drugs act and brain circuits involved, physical dependence and psychological effects on short and long term. It was also briefly presented the Italian and the European legislation on drugs.

The arguments were presented in "ppt slides", and were treated so as to alternate to any exhibition an interactive phase in which the students were encouraged to freely express doubts, perplexities, opinions and / or personal experiences. Each of the meetings was attended by two or three classes.

Before and after the intervention the students filled out a questionnaire (9 multiple choice questions) in which a series of questions were asked: for example, it was asked to define the concepts of "drugs", "tolerance", "addiction", and so on.

Even to the teachers was given a questionnaire with a Likert scale (indicating the most appropriate response, from 1 to 5). The questionnaire was designed to obtain from the teachers an assessment of the adequacy, clarity, and structuring interventions. Both questionnaires were completed in total anonymity.

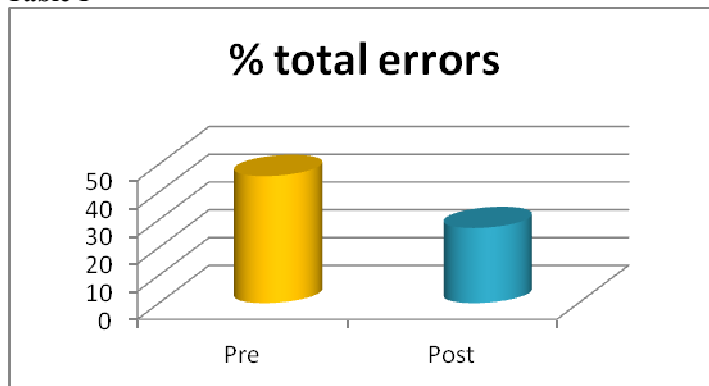
### **Results**

The informational effectiveness of the intervention was measured considering the scores obtained by the students to the questionnaire pre and post intervention. It has been rated:

- 1) the total score;
- 2) the score for the 3 main categories of information: a) general and specific characteristics of drugs; b) mechanisms of dependence, c) risk factors

The results, summarized in Table 1, indicate that the total number of errors is reduced significantly after the intervention, going from 47.5% to 27%.

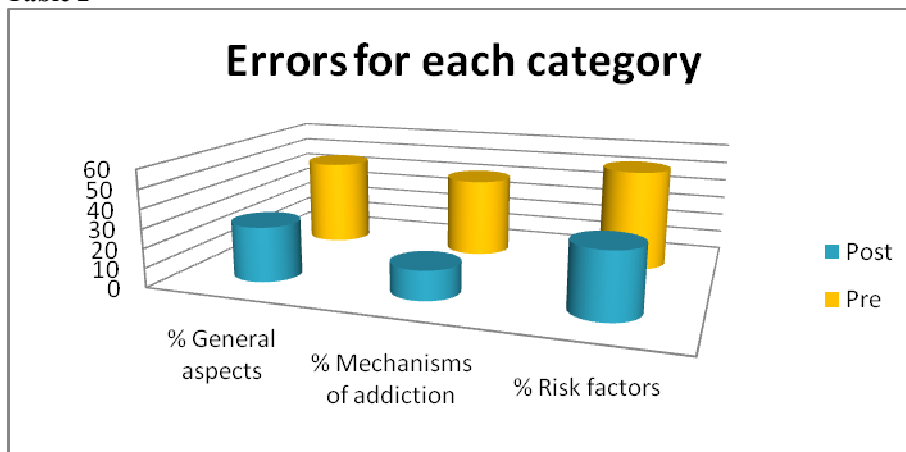
**Table 1**



*The graph shows the percentage of errors made by students in completing the questionnaire pre and post intervention.*

Regarding the different categories of information, the results show that the knowledge on "general and specific aspects of drugs" have improved significantly (45.6% of errors before the intervention, 28.6% after it), as well as those on "mechanisms of addiction" (41.4% before, 15, 2% after). Even the knowledge about risk factors, the aspect on which the students have made the greatest number of mistakes, have benefited from the intervention (52.3% before, 33.7% after).

**Table 2**



*Percentage of errors for each category of information: "General and specific aspects of drugs" (% mistakes); "Mechanisms of addiction" (% mistakes); "Risk factors" (% mistakes). In orange and blue were respectively reported the percentages before (Pre) and after (Post) the intervention.*

The attitude of teachers regarding the intervention was measured by a questionnaire based on a Likert scale. The questionnaire (Figure 1) aimed to give a measure of the opinions of the teachers about the clarity and the relevance of the information provided, and about the way of their presentation; it also aimed to investigate the interest expressed by the students after the intervention itself. It was attended by 13 professors. The results showed a positive assessment about the information offered and about the mode of communication adopted. It also showed that the students have expressed an interest on the covered topics even after the intervention, during lessons in class.

**Figure 1**

How much do you agree/disagree to each of the following statement				
Completely agree	Agree	Uncertain	Disagree	Completely disagree
1	2	3	4	5
a) Contents are pertinent				
b) Contents have been well detailed				
c) Contents have been correctly examined				
d) Presentation in slide has been effective				
e) The division in four aspects each content has been useful for learning				
f) The short discussion followed by a longer discussion has been effective				
g) Students have been really involved				
Any suggestion or consideration				

*The questionnaire addressed to teachers*

### **Discussion**

The Annual Report of the Parliament on drugs reports that drug use is increasing not only amongst boys but also amongst the girls; amongst young people the abuse of stimulants and hallucinogens is prominent (11). In Naples the national trend is confirmed: the percentage of young cocaine users is very high and Campania has also the primacy of the region with the highest number of deaths from drug abuse (11,12). Despite the high consumption of such substances, it emerges, not only by our investigation, that youngsters do not have an accurate knowledge about drugs, as well as about their effects and possible damages (13). Such informations are, indeed, easily available and well presented in numerous Internet sites, as the one of the Ministry of the Interior's, not to mention that in recent years the Department for Anti-Drug Policies of the Presidency of the Council of Ministers developed a project called EDU, that "has as its aim the creation of a national network of interactive informational websites for schools, aimed to provide support and information to students, teachers and parents for the prevention of drug abuse amongst young people". Despite this, the informations do not appear to be widespread (9,12).

So how should we do to effectively involve young people and to spread a correct information?

The intervention at the "Fermi - Gadda" has been proposed to attract the interest of the boys on a delicate issue, which seems to be debated everywhere, but that is, as a matter of fact, very little known. We chose to implement a dialogue face to face with the young people, based on a constant interaction, where every statement or answer was accompanied by simple explanations, but with a solid scientific basis. As indicated by the above results, the approach was effective.

The teachers have expressed a positive assessment about the suitability, the clarity and the structure of the intervention but, above all, the boys have shown interest in the topics and in the approach. This is clear giving a look at the scores of post-intervention questionnaires. In addition to the quantitative assessment it is important also to underline a qualitative aspect that emerged during each meeting about any topic: the young people asked many questions, and they have also expressed curiosity, so that any answer was usually followed by many other questions, often of critical type. One of the more frequent observations was, for example, the one related to the incoherence of the Italian law on drugs, which provides

not tolerance towards the use and the dealing of drugs, but allows the use of drugs in the medical field (eg. Morphine in patients suffering from cancer or marijuana for patients with pain from multiple sclerosis) (7). These and other observations, a sign of attention and involvement, showed how the guys are actually willing for information and for a clear dialogue, which the websites, even if they give really good informations, does not allow to obtain. There is also an understandable fear in young people in talking about these issues: most of them used to wait for a pause to approach our staff and ask more specific questions, sometimes personal. The effectiveness of the intervention is also due to the presentation of real images related to clinical cases (eg. those on brain damage induced by cocaine or other stimulants) and to the presentation of arguments made by a neurologist along with a group of young psychologists. The presence of teachers at each of the meetings has been a substantial element of importance, because it "legitimized" the intervention as part of the scholastic education and, on the other side, gave to the students the opportunity to continue the discussion in the classroom if necessary.

We think that a specifically medical and neuropsychological intervention on drugs of abuse, in addition to what is normally done during school activities, could induce a documented reflection in young people on risks and consequences. Obviously, any prevention program should be continued over time, applied on a large scale and include different methods. The one here proposed seems to be effective to engage a mindful dialogue opened to confrontations.

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