Simultaneous abuse of different psychoactive substances among adolescents

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Abstract

Although the drug abuse has been evidenced in every age of the human life, it seems that its occurrence is crucial during adolescence period with its well-known consequences on the further personality development. Adolescents like to experiment with risky lifestyles without adequate knowledge about their possible harmful effects and consequences. International experiences have represented that early onset of the risky behaviour predisposes young persons for serious problems in social, psychological and physical future lives.
It has been noticed that adolescents like to combine different psychoactive substances. Therefore the aim of this study was to present the most important and the most actual substances abused by young adolescents together with the substance characteristics.
This research included 600 adolescents with the same prevalence regarding age, sex and living zone (rural-urban).
Our research showed that simultaneous abuse of various harmful psychoactive substances (polydrug abuse) is the most common (tobacco smoking and cannabis consumption in 75% of cases, alcohol consumption and cannabis consumption in 80% of cases).

Key words: adolescence, genetic factors, biogenetic factors, cannabis, tobacco, alcoholism, Bosnia and Herzegovina.

Introduction

Drug abuse is sociopathological phenomenon that destroys social, economical and family life of the person. In the middle of 20th century new modern psychopharmacological medicines were discovered - drugs with the significant influence on the consumer's mental and behaviour status. Therefore, these medicines were named psychoactive or psychotropic substances. In the majority of cases, the use of psychopharmacological medicines is not under the control of medical professionals. Cases of the "self-medication" are very frequent, as well as numerous evidences when individuals, especially adolescents, experiment on themselves with a combined abuse of different psychotropic substances in order to experience their effects. This kind of behaviour often leads towards addiction syndrome with unpredictable consequences (1).
Psychoactive substance abuse implicates the psychoactive substance consumption in maladaptive manner during the period longer that one month. It differs from the psychoactive substance addiction syndrome because it does not comprise abstinence symptoms. Usually it leads to physical or mental health impairment. Although the drug abuse has been evidenced in every age of the human life, it seems that its occurrence is crucial during adolescence period with its well-known consequences on the further personality development. Adolescents like to experiment with risky lifestyles without adequate knowledge about their possible harmful effects and consequences. International experiences have represented that early onset of the risky behaviour predisposes young persons for serious problems in social, psychological and physical future lives.
As a country in transition, Bosnia and Herzegovina has all characteristics of the post-war society with numerous risk factors for the psychoactive substance abuse (2). The usage of narcotics, psychoactive substances (especially cannabis products), antiparkinson agents, glue, solvents, rarely heroin and seldom cocaine and LSD-25 was noticed during the year 1996. Unfortunately, exact data on the prevalence of psychoactive substances addiction have not been precisely evidenced, even in developed countries with highly organised health services and other following aspects of the social and health care. The reason for that is that drug abuse problem is very dynamic and changeable according to the prevalence of the illegal drug abuse, patterns of the drug abuse throughout time,

history of the drug consumption and development of the associated social problems. Psychoactive substance abuse exact data are usually gathered from the cured addict medical registers in health services, by the mortality prevalence data related to the drug abuse and throughout the police reports (2).
These are three groups of the drug abuse aetiological factors: Psychoactive substance type together with its effect, addict personality and social environment (social factors). Psychoactive substance type ad its effect have an important role in substance abuse among young people.

General drug abuse risk factors according to Newcomb are:

1. Cultural-social: Law that promotes drug abuse, social standards that promote drug abuse, drug availability, unusually difficult economic conditions, parents and family members substance abuse, positive attitude towards substance abuse in the family;
2. Interpersonal: Model for deviant behaviour (parent abuse of psychoactive substances), conflicts between parents or friends;
3. Biogenetic: Genetic factors responsible for the vulnerability (psychological vulnerability to substance effects, personality characteristics, low self-esteem and risky behaviour predisposition). Positive family anamnesis regarding drug addiction (children from the alcoholic families are two to four times more predisposed to develop some type of addiction in comparison to children from the non-alcoholic families). In this group of factors it is very difficult to differentiate genetic from the environmental component. Genetics is also very important in some psychiatric disorders especially in some affective disorders highly related to the drug abuse (e.g. bipolar affective disorder). These disorders are more frequently registered within population of addicts than within general population.
4. Psychosocial: prolonged risky behaviour with early onset, inappropriate and bad school behaviour and final educational result, insurgent behaviour, positive attitude towards drug abuse, addiction onset in early life age, conflicts and disturbed interpersonal relations in the family (it is more likely that children will start to use alcohol or drugs in families where parents do not control children at all or in families with too strict and inconsistent discipline). Also, it is well known, that if parents abuse psychoactive substances children become addicts more frequently.

There are many psychoactive substance classifications, but due to practical reasons we use to divide them into three major groups: The first group is presenting all substances with sedative effect, the second group is nervous system stimulating substances and the third group is substances with hallucinating effects (3, 4, 5).
Usually, addicts combine drugs with different substances such as alcohol, sedatives and hypnotics what can cause severe physical and mental impairments. Liver impairment, for example, can affect another drug metabolism by causing of prolonged sedative effect during the simultaneous usage of alcohol and sedatives.
Sedative effects of alcohol have been used in order to reduce anxiety or depression, but also to straighten effects of other substances consumed concomitantly with alcohol. Alcohol has ability to impair other substance metabolism including sedatives, cocaine and opiates. It hastens cocaine metabolism with resulting accumulation of its metabolites. For that reason alcohol has a hepatotoxic effect.
Adolescents mostly abuse marihuana and alcohol, but also marihuana and depressants in the form of tablets.
"Speedball" is when stimulants are used in combination with opiates. Recently, the new form of smoking stimulant known as "ice" is in use. It can induce a rapid and high drug concentration in the brain with resulting prolonged intoxication (12-24 hours). During the intoxication phase, "ice" consumers often have psychotic symptoms related to the violent behaviour. "Ice" abuse is in dramatic increase in California and Hawaii.
Considering all facts mentioned above, our research goal was to estimate the frequency of various psychoactive substances simultaneous abuse.

Methodology

Type of research
The study type was prospective and epidemiological-analytical.

Sample
This research included 600 adolescents in total, 200 from Tuzla Canton (100 from Elementary Schools and 100 from High Schools) and 400 from Sarajevo Canton (200 from Elementary Schools and 200 from High Schools). The average age of participants was between 12 to 17 years with equal prevalence regarding the sex and residence location. (rural-urban).

Research instruments
The collection of necessary information we performed by the "Q2000" test, a questionnaire founded in the period 1990-1991 and dealing with the drug abuse problem. This test was scientifically validated and accepted in many countries. "Q2000" test contains a wide spectrum of the questions relating to the all aspects of adolescent life, including health education, life style and behaviour in school. The questionnaire is anonymous and voluntary based. Our investigation preparation and "Q2000" test"

inquiry were performed simultaneously in Cantons Sarajevo and Tuzla during the year 2001.

Results

Researching results were calculated by standard statistical methods and were presented by EPI-INFO software programme (in the form of tables and charts).

Overview of the cannabis and various medications simultaneous abuse

Table 1 presents drug abuse among young people who have or have not previously smoked cannabis. There is a significant difference between drug abusing examinees who have tried cannabis (15%) and those who have not tried cannabis (1.8%). The same result has been shown by the x2 test presenting a significant difference between two respondent groups of examinees.

Analyses of the nicotine and various medications simultaneous abuse

The quantitative relation between the drug and nicotine simultaneous abuse is presented in the following table (table 2).

About 75% of cannabis abusing young people smoke tobacco in the same time in comparison to 25% of those who do not abuse cannabis. Parents allow tobacco smoking in 29.4% of young people who have previously tried cannabis and in 2.6% of those who have not tried cannabis yet. Value of the x^2 is showing a highly statistically significant difference between two groups of examinees.

Overview of the alcohol and various medications simultaneous abuse

Data presented in the table 3 are indicating that about 80% of young people who have tried cannabis simultaneously consume alcohol in comparison to 13.6% of young people who consume alcohol alone.

Parents tolerate alcohol drinking in 38.9% of young people already abusing cannabis while in 10.1% of adolescents who are not drug abusers. Also, it is shown that young people who have tried cannabis, drink alcohol with their friends and family more frequently in comparison to those who are not drug abusers. The x^2 test value is showing significantly important difference regarding all parameters mentioned above.

Correlations between the abuse of alcohol, tobacco and drugs

A tendency to abuse one or more of the mentioned harmful substances my give an answer to the dilemma weather all is about general vulnerability to the harmful substance abuse or manifestations of its polyvalent potency.

Table 1 Simultaneous drug and medication consumption

		Have you tried cannabis?			
		Yes		No	
		N	%	N	%
Analgesics	Yes	2	11.1	104	18.3
(X^2=0.610 p=0.4347)	No	16	88.9	464	81.7
Antibiotics	Yes			51	9.0
(X^2=1.777 p=0.1825)	No	18	100.0	515	91.0
Anxiolytic	Yes	3	15.0	10	1.8
(X^2=15.629 p=0.00001)	No	17	85.0	557	98.2
Hypnotics	Yes			4	.7
(X^2=0.128 p=0.7204)	No	18	100.0	562	99.3
Anti-asthmatic agents	Yes			4	.7
(X^2=0.128 p=0.7204)	No	18	100.0	563	99.3

Table 2 Simultaneous drug and cigarette smoking abuse

		Have you tried cannabis?			
		Yes		No	
		N	%	N	%
Do you smoke tobacco?	Yes	15	75.0	25	4.3
(X^2=154.701 p=0.00001)	No	5	25.0	553	95.7
If you smoke, do you parents allow that?	Yes	5	29.4	7	2.6
(X^2=28.590 p=0.00001)	No	12	70.6	262	97.4
If you smoke, how many cigarettes do you smoke per a day?	M	10		8	
If you smoke, how old were you when you smoked your first cigarette?	M	12		13	

Table 3 Simultaneous drug and alcohol abuse

		Have you tried cannabis?			
		Yes		Yes	
		N	%	N	%
Do you drink alcohol beverages? (X^2=63.920 p=0.00001)	Yes	16	80.0	77	13.6
	No	4	20.0	490	86.4
If you are drinking alcohol, do your parents allow that? (X^2=14.330 p=0.00001)	Yes	7	38.9	43	10.1
	No	11	61.1	383	89.9
If you are drinking alcohol, how old were you when you had your first alcohol beverage?	Mean	12		12	
How often do you drink alcohol with your friends?	Daily or almost daily	2	10.0	2	.5
How often do you drink alcohol with your family? (X^2=19.688 p=0.00001)	Couple times a week	3	15.0		
	Couple times a year	2	10.0	30	7.2
How often do you drink alcohol alone? (X^2=0.140 p=0.9866)	Couple times a week	1	5.0	3	.7
	Couple times per month	1	5.0	5	1.2
	Once a month	1	5.0	5	1.2
	Couple times a year	2	10.0	8	1.9
How often do you get drunk? (X^2=2.708 p=0.2582)	Couple times a week	3	15.0	1	.2
	Couple times per month	1	5.0	3	.7
	Couple times a year	5	25.0	10	2.3

Following tabular review is showing a high positive correlation between different substance abuse, including correlation between tobacco and alcohol abuse, tobacco and drug abuse and alcohol and drugs abuse as well. All results obtained during our investigation are indicating that there is a genetic and phylogenetic tendency to simultaneous polyvalent harmful substance abuse.

Table 4. is presenting a highly significant correlation between tobacco and drug abuse, but also between alcohol and drug abuse and alcohol and tobacco abuse.

Discussion

Literature data undeniably indicate that simultaneous abuse of different harmful substances is very common. Our investigation results are corresponding to the literature data. We discovered that young people who abused cannabis frequently consumed alcohol or psychotherapeutics in the same time, and vice versa, which implicated the presence of all variations of the simultaneous, different substance abuse.

Petraitis and Flay tested the USA population aged 12 years and older (1997-1999), and found out that 14.8 million Americans used illegal drugs from which 6.7% were aged 12 years and older. The most frequently abused drug was cannabis (75%), cannabis in combination with other harmful substances (18%) and other drugs (25%). It was concluded that 6.4 Americans were abusing other harmful substances with or without cannabis (7).

Psychotherapeutic agent abuse in Americans was present as follows: Painkillers 2.6 million, tranquillisers 11 million, CNS stimulants 0.9 million and sedatives 0.2 mil-

Table 4 Correlations

			Do you smoke cigarettes?	Do you drink alcohol beverages?	Have you tried cannabis?
Spearman rho	**Do you smoke cigarettes?**	Spearman rho		.390(**)	.509(**)
		P		.000	.000
		N		587	598
	Do you drink alcohol beverages?	Spearman ρ	.390(**)		.330(**)
		P	.000		.000
		N	587		587
	Have you tried cannabis?	Spearman rho	.509(**)	.330(**)	
		P	.000	.000	
		N	598	587	

** Correlation is significant on the level 0.01

lion Americans. About 1.5 million young people (12 years) abused cocaine (0.7%) while hallucinogens were abused by the 0.4% of young people. Analgesic abuse has been in increase from 1980-ties till present time. In the year 1990 the prevalence of the analgesic abuse among young people aged from 12 to 17 years increased for 6.3/1000 while the result for the year 1999 was 32.4/1000. The final conclusion was that most frequently abused illegal substance among American adolescents was cannabis (44% among high school adolescents) (8, 9).

Gilligan and the group of authors investigated tobacco smoking and highly risky behaviour with the purpose to establish the relation between cigar smoking, cigarette smoking and alcohol drinking among adolescents aged from 10 to 15 years. Adolescents who smoked tobacco more frequently abused some other tobacco products and alcohol beverages (10).

Concurrent abuse of different psychoactive substances was investigated by many authors with the conclusion that tobacco smoking and alcohol drinking were predictive for the drug abuse (11).

Our investigation revealed that adolescents most frequently abused cannabis.

Conclusion

Young people use to combine various psychoactive substances (>75% combine cannabis with alcohol drinking and cigarette smoking) very frequently. Our research revealed a significant positive correlation towards polyabuse of various psychoactive substances indicating an existence of the genetic or phylogenetic liability towards concurrent polyvalent harmful substances abuse.

It is conspicuous that parents support their children in a passive way to consume psychoactive substances (parents allow alcohol drinking: in children who smoke cannabis - 38.9%; in children who do not abuse drugs - 10.1%).

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