

The Personality Traits and Social Characteristics of Croatian Heroin Addicts and Cannabis Users

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ABSTRACT

The purpose of this study was to investigate differences in social characteristics (level of education, working and family status, and criminal record) between heroin addicts, cannabis users and a control group. Additional goal was to explore the possibility of discerning subjects of different addiction status (of both gender) based on their scores on Eysenck Personality Questionnaire (EPQ). In comparison to the control group, heroin addicts and cannabis users had lower level of education, were more frequently unemployed and with criminal record, and more often came from dysfunctional families. In cannabis users the frequency of these characteristics was generally lower than in heroin addicts. Proportion of correct classification of subjects in groups of different addiction status based on the EPQ scores was 23.3% for males (higher than by chance alone), and 30% for females.

Key words: heroin addicts, cannabis users, personality traits, social characteristics

Introduction

Bozarth¹ describes the abuse of drugs as a continuum from occasional use to addiction. On this continuum, addiction is an extreme that only quantitatively, but not qualitatively differs from compulsive use of psychoactive agents.

Transition from use and abuse to addiction is conditioned by joint working of intrinsic factors (e.g. personality traits), positive stimulating effect of drugs caused by their biological activity in the central nervous system, and extrinsic factors (e.g. availability of drugs, social control and sanctions against abuse)². The complex interrelationships among these factors underscore the complexity of the pathways of drug use and abuse.

A number of family factors may be associated with the development of drug use and abuse³. Parents may confer increased risk of drug abuse on their offspring not only through their genes but also by providing negative role models, and especially by using and abusing drugs as a coping mechanism. This has been found to be the case with adolescent cigarette smoking⁴ and initiation of cannabis use among adolescents⁵.

Although research comparing personality features of drug users/abusers has shown various inconsistencies,

an extensive literature now supports an important role of personality in drug abuse. It is generally recognized that there is a limited number of broad personality traits that seem to be based on the general construct of disinhibition and correlate with drug abuse⁶.

Both theory and empirical data suggest that addiction disorder can be directly related to psychopathology of personality^{7–12}. Various studies pointed out a significant contribution of Eysenck theory of personality¹³ in explaining addiction behavior.

Results of studies using Eysenck Personality Questionnaire (EPQ) have shown that drug addicts score higher than non-addicts on the scales of psychoticism (P) and neuroticism (N)^{14–19}. For addicts of both gender, a high P is very discriminative, whereas N factor is also important, but somewhat less so. Low scores on the scales of extroversion and lie are also characteristic for drug addicts^{20,21}. In a meta-analysis of studies using EPQ scales, Francis²² showed that psychoticism is the key personality factor in addictive behaviors. Most studies clearly confirm the association between neuroticism and addiction, whereas the relationship of extraversion and addiction is less clear.

The goal of our study was to investigate whether heroin addicts, cannabis users, and control subjects differ in their social characteristics (level of education, working and family status, and criminal record). Additional goal was to explore the possibility of discerning subjects of different addiction status (of both gender) based on their scores on EPQ scales.

Material and Methods

Subjects

The study was conducted between 2005 and 2007 and included a convenient sample of three groups of participants of both gender, their total number being 778.

The first clinical group consisted of heroin addicts who participated in a program of psychoactive drug addiction treatment in the institution »Zajednica Susret«. Besides meeting the DSM-IV²³ criteria for psychoactive drug addiction, subjects had to meet the following inclusion criteria: 1) indicated heroin as a primary addictive agent; 2) had no psychotic disorders; 3) spent at least 4–6 weeks in closed institutional treatment before the study-related psychological examination. A total number of subjects in this group was 260, out of which 193 were males and 67 females, with mean age (\pm SD) of 25.75 (3.10).

Second clinical group consisted of cannabis users who participated in an advisory program after being caught for illegal possession of this drug. Besides diagnostic DSM-IV criteria for abuse of psychoactive drugs, we defined the following additional inclusion criteria: 1) participants indicated marijuana as the primary agent which they use at least 1–3 times a month; 2) had no psychotic disorders; 3) had urine tests negative on any of the psychoactive agents at least 4–6 weeks before the study-related psychological examinations. This group consisted of 260 subjects, out of which 193 were males and 67 females, with mean age (\pm SD) of 25.42 (3.03)

Subjects in the control group were patients in a family medicine practice. They were included according to the following criteria: 1) they never used any illegal psychoactive drugs (these do not include alcohol and tobacco); 2) had no psychotic disorders. A total number of subjects in this group was 258, with 193 males and 65 females, and mean age (\pm SD) of 24.98 (3.57)

Subjects in all three groups were equalized by age and gender. They were informed about the purpose of the study according to the ethics code of psychologists, and gave their consent for participation in the study.

Measures

We used the following instruments:

1. Standardized Pompidou questionnaire, which is a form recommended by the Council of Europe Pompidou Group for keeping records on addicts with the International Classification of Diseases – 10th Revision (ICD10) diagnosis²⁴. The questionnaire consists of 55 questions. Participants responded to all questions,

but only answers to the questions No. 5–20 were analyzed for the purpose of this study because they contained basic data on the treatment, socio-demographic characteristics, type of drugs used, reasons for starting experimenting with drugs and major etiological factor for addiction²⁵.

2. Personality was evaluated by the Adult Eysenck Personality Questionnaire¹³. The questionnaire is a self-reported inventory of 106 items referring to three scales that correspond to the three basic factors of Eysenck's analysis of personality: extraversion, neuroticism, and psychoticism. The fourth scale is lie scale as a measure of social desirability. Each item has a dichotomous answer (Yes/No). The psychometric properties of the EPQ suggest an adequate and homogeneous internal consistency among the three dimensions and a good test/re-test reliability (0.78–0.90 for males; 0.76–0.85 for females) on each dimension separately²⁶.
3. Laboratory tests of urine samples

For the purposes of this study, samples of urine were analysed in the group of cannabis users. Laboratory tests were conducted at the Institute for public health, using the method of homogenous enzyme immunoassay, whereby the results are expressed in nanograms, proportionally to the amount of psychoactive agent in the sample. Since the presence of tetrahydrocannabinol (THC) as the psychoactive substance in urine can be reliably confirmed within 10 days of drug use, weekly testing was sufficient for the control of abstinence.

Statistical analyses

χ^2 -test was used to determine the statistical significance of differences. Discriminatory analysis was conducted to classify the subjects of different addiction status. SPSS 14.0 software was used to analyze the data.

Results

Social characteristics of heroin addicts, cannabis users and control subjects

Heroin addicts, cannabis users and control subjects differed significantly in terms of their working status ($\chi^2=113.42$; $p<0.001$) (Table 1). Heroin addicts were more often unemployed, and they more rarely had occasional or permanent jobs, or student status than the subjects in other two groups. Cannabis users were less often students and also less often employed compared to the control subjects.

Significant differences between the groups were found in the level of education ($\chi^2=139.91$; $p<0.001$). Heroin addicts more often had only elementary school or unfinished secondary school, and less often had finished secondary school or graduation than the subjects in other two groups. Cannabis users more often had finished secondary school than heroin addicts, and less often a higher or high degree than controls.

TABLE 1
CHARACTERISTICS OF HEROIN ADDICTS, MARIHUANA USERS AND CONTROL SUBJECTS

| | Heroin addicts (N=260) | Marihuana users (N=260) | Control (N=258) | χ^2 | p |
|-----------------------|---------------------------|----------------------------|--------------------|----------|--------|
| Education level | | | | | |
| Elementary school | 45 | 20 | 8 | | |
| < HS diploma | 60 | 33 | 1 | | |
| High school diploma | 151 | 190 | 199 | | |
| College degree | 4 | 17 | 50 | 139.91 | <0.001 |
| Employment | | | | | |
| Unemployed | 172 | 116 | 55 | | |
| Occasional job | 26 | 37 | 43 | | |
| Student | 18 | 54 | 68 | | |
| Employed | 44 | 53 | 92 | 113.42 | <0.001 |
| Law status | | | | | |
| Imprisonment | 59 | 7 | 0 | | |
| Conditional discharge | 78 | 31 | 3 | | |
| Misdemeanor sentence | 32 | 91 | 48 | | |
| No | 91 | 131 | 207 | 252.62 | <0.001 |

Three groups of participants were significantly different in terms of their criminal record ($\chi^2=252.62$; $p<0.001$). Imprisonment and conditional discharge was more frequent among heroin addicts than in other two groups. Cannabis users were less frequently convicted to prison or given conditional penalty in comparison to the heroin addicts. But they more often stated that they were sentenced for misdemeanor, and less frequently that they had a clear criminal record.

Heroin addicts, cannabis users and control subjects significantly differed in terms of marriage status of their parents ($\chi^2=46.84$; $p<0.001$) (Table 2). Parents of heroin addicts were more frequently divorced or widowed, and less often in marriage. Among cannabis users there was no differences regarding marriage status of their parents.

No significant differences between the groups were found in parents' level of education, although the comparison of mothers' level of education was on the margin of statistical significance, and indicated somewhat higher rate of only elementary school in mothers of heroin addicts than of subjects in the other two groups.

Significant differences between the groups were found in the family economic status ($\chi^2=14.55$; $p<0.01$). Heroin addicts and cannabis users more frequently indicated that the income of their families was above average.

All groups differed significantly with regard to the psychopathology of participants' fathers ($\chi^2=58.1$; $p<0.001$), mothers ($\chi^2=51.34$; $p<0.001$), and siblings ($\chi^2=54.97$; $p<0.001$). Heroin addicts more frequently indicated the presence of mental illnesses in their families, and the opposite was true among control subjects.

Predicting addiction status on the basis of scores on EPQ scales

In the discriminatory analysis, the results on the scales of psychoticism, extraversion, neuroticism and lie

were used as predictors. Separate discriminatory analyses were performed for males and females.

Two canonic discriminant functions were obtained, whereby the first one had a higher discriminating power than the second, but both were statistically significant at the level of $p<0.001$, which indicates that both functions could be used for discriminating the groups. The structure coefficients showed a significant correlation of neuroticism (0.71), lie (-0.67) and psychoticism (0.51) scales with the first discriminant function, and extraversion (0.77) scale with the second discriminant function (Table 3).

A posteriori classification based on discriminant functions and known results on EPQ scales gave the following results:

- 133 (68.9%) male heroin addicts were correctly classified, 36 (18.7%) of them were classified in the group of marihuana users, and 24 (12.4%) in the control group;
- 74 (38.3%) male users were correctly classified, 43 (22.3%) of them were classified in the group of heroin addicts, and 76 (39.4%) in the control group;
- 121 (62.7%) male control subjects were correctly classified, 20 (10.4%) of them were classified in the group of heroin addicts, and 52 (26.9%) in the group of cannabis users.

Overall, 56.6% participants were correctly classified, which means that knowing the results on EPQ scales increases the probability of correct classification by 23.3% in comparison with classification by chance. The best discrimination was achieved between the control group and the heroin addicts, whereas the discrimination was not so good between cannabis users and heroin addicts, and especially between cannabis users and control subjects.

Two canonic discriminant functions were obtained, out of which only one was statistically significant ($p<$

TABLE 2
FAMILY CHARACTERISTICS OF HEROIN ADDICTS, MARIHUANA USERS AND CONTROL SUBJECTS

| | Heroin addicts (N=260) | Marihuana users (N=260) | Control (N=258) | χ^2 | p |
|---------------------------------|---------------------------|----------------------------|--------------------|----------|--------|
| Parental marriage | | | | | |
| Divorced | 57 | 46 | 21 | | |
| Widow/widower | 48 | 30 | 15 | | |
| Married | 155 | 184 | 222 | 46.84 | <0.001 |
| Educational level (father) | | | | | |
| Elementary school | 53 | 36 | 58 | | |
| <HS diploma | 4 | 1 | 2 | | |
| High school diploma | 151 | 160 | 138 | | |
| College degree | 52 | 63 | 60 | 10.16 | 0.118 |
| Educational level (mother) | | | | | |
| Elementary school | 78 | 57 | 62 | | |
| lpha<HS diploma | 4 | 2 | 4 | | |
| High school diploma | 147 | 148 | 138 | | |
| College degree | 31 | 53 | 54 | 12.21 | 0.058 |
| Family economic status | | | | | |
| Below average | 59 | 60 | 59 | | |
| Average | 166 | 169 | 188 | | |
| Above average | 35 | 31 | 11 | 14.55 | 0.006 |
| Psychopatology (father) | | | | | |
| Yes | 122 | 80 | 41 | | |
| No | 138 | 180 | 217 | 58.09 | <0.001 |
| Psychopatology (mother) | | | | | |
| Yes | 98 | 50 | 31 | | |
| No | 162 | 210 | 227 | 51.34 | <0.001 |
| Psychopatology (brother/sister) | | | | | |
| Yes | 72 | 40 | 11 | | |
| No | 161 | 191 | 222 | 54.97 | <0.001 |

0.001). The structure coefficients showed a significant correlation of the first discriminant function with the scores on psychoticism (0.78), lie (-0.69) and neuroticism (0.57) scales, and the second discriminant function with the extraversion scale (-0.33).

A posteriori classification gave the following results (Table 4):

- 56 (83.6%) female heroin addicts were correctly classified, 9 (13.4%) of them were classified in the group of cannabis users, and 2 (3%) in the control group;

- 27 (40.3%) female cannabis users were correctly classified, 15 (22.4%) of them were classified in the group of heroin addicts, and 25 (37.3%) in the control group;
- 43 (66.2%) female control subjects were correctly classified, 8 (12.3%) of them ih were classified in the group of heroin addicts, and 14 (21.5%) in the group of cannabis users.

Overall, 63.3% female participants were correctly classified, which represents a 30% increase in the probability of correct classification when compared with classification by chance.

TABLE 3
BASIC RESULTS OF DISCRIMINATORY ANALYSIS OF MALE HEROIN ADDICTS, MARIHUANA USERS, AND CONTROL SUBJECTS ON THE BASIS OF THEIR SCORES ON EYSENCK PERSONALITY QUESTIONNAIRE SCALES

| Discriminant functions | Eigenvalues | Canonical correlation | Wilks' Lambda | χ^2 | p |
|------------------------|-------------|-----------------------|---------------|----------|-------|
| 1 | 0.53 | 0.59 | 0.63 | 264.59 | 0.000 |
| 2 | 0.04 | 0.19 | 0.97 | 20.17 | 0.000 |

TABLE 4
BASIC RESULTS OF DISCRIMINATORY ANALYSIS OF FEMALE HEROIN ADDICTS, MARIHUANA USERS, AND CONTROL SUBJECTS ON THE BASIS OF THEIR SCORES ON EYSENCK PERSONALITY QUESTIONNAIRE SCALES

| Discriminant functions | Eigenvalues | Canonical correlation | Wilks' lambda | χ^2 | p |
|------------------------|-------------|-----------------------|---------------|----------|-------|
| 1 | 0.86 | 0.68 | 0.53 | 121.63 | 0.000 |
| 2 | 0.01 | 0.07 | 0.99 | 1.04 | 0.904 |

Discussion and Conclusion

Comparison of social characteristics of heroin addicts, cannabis users and control subjects who did not use psychoactive substances

The comparison of heroin addicts with the control subjects showed that the former more often had a lower educational status, higher rates of unemployment, were more often sentenced to prison or conditional discharge, and committed criminal acts even before beginning to abuse psychoactive substances. Heroin addicts more often came from incomplete families (due to divorce or death of a parent), and higher rates of mental illnesses were observed among their family members. Heroin addicts' fathers frequently had a drinking problem, their mothers more often suffered from anxiety-depressive disorder, and their siblings were more often drug users themselves. Among heroin addicts' mothers, lower educational status was somewhat more frequent, and the family income in this group of study participants was more often above average.

A comparison of our results with related studies in Croatia and other countries shows some similar trends. Lalić and Nazor²⁷ also found a lower educational level, a pronounced problem of unemployment, and inclination to criminal activities in heroin addicts. A possible explanation is that addictive behavior impairs the life processes on different levels of functioning. Lalić and Nazor²⁷ point out a direct connection between a higher rate of high school dropouts among addicts and their taking of psychoactive substances, which imply a certain lifestyle (abstinence syndroms, school absenteeism, negative influences of peers, poor motivation etc). The same can also explain a high rate of unemployment among heroin addicts.

Comparing the characteristics of adolescent heroin addicts and control subjects, Glavak and colleagues²⁸ got results similar to ours. Namely, they found more frequent alcoholism among fathers of heroin addicts, more frequent use of psychopharmacs among their mothers and siblings, as well as a higher socio-economic status of their families. Our findings therefore confirmed the role of family variables on addictive behaviors. Earlier studies also showed a higher prevalence of addicts in incomplete families^{29,30}. A recent study³¹ indicated that parental psychological problems were directly associated with adolescent drug abuse problems after controlling for parent substance use and parenting behaviors.

As mentioned earlier, we found a somewhat lower educational status (elementary school only) among addicts' mothers. Lalić and Nazor²⁷ suggest that parents with higher educational status more often use democratic parenting styles, which are suited to specific developmental needs of each child. In such environment children more easily accept family influences and they are less inclined to satisfy their social needs among their delinquent peers. Findings of our study are in accord with this explanation: mothers of participants who did not consume psychoactive substances and mothers of marihuana

users more often have a higher educational status than mothers of heroin addicts. Considering the fact that in our culture mothers have more active role in child rearing than fathers²⁷, this explanation becomes even more feasible.

The finding about a higher socio-economic status of families of heroin addicts and cannabis users does not correspond either with clinical observations or with results of previous studies²⁸, which indicate that addicts more often come from families with lower socio-economic status. Possible explanation is that drug users in our study overestimated the income of their families, as opposed to control subjects who estimated their families' income more realistically. It is also possible that structure of questions about socio-economic status on the Pompidou questionnaire is not specific enough (having only three possible answers: above average, average, and below average), and should be made more precise.

Differences in social characteristics of our study participants were most obvious between heroin addicts and control subjects. Presented results also show that the investigated social characteristics were mostly less represented in cannabis users than in heroin addicts, but more represented than in control subjects. One can identify a trend towards poorer social adjustment (lower educational achievement, higher unemployment and more frequent deviant behavior) and a family »risk« for addictive behaviors (more frequent incomplete family structure, alcoholism among fathers, anxiety-depressive disorders among mothers, and addictions among siblings) in cannabis users when compared with control subjects. This finding are in line with the study by Sutherland and Shepherd³², who found more frequent troubles with the police, poor academic performance, lack of religious beliefs, incomplete families, and favouring peer over family opinion among marijuana users. Research into psychosocial basis of addiction confirmed the importance of the family as an etiologic factor in drug abuse^{33–35}. The relationship between family variables and substance abuse is of great interest to researchers in the area of addiction³⁶.

Parents and close family members are the primary role models for the child and they pass on the child behavior, communication patterns, attitudes, and system of values toward others and oneself³³. Poor quality of family life in preadolescent age is the main risk factor for drug use³⁷. The consequences of a dysfunctional family life, occurring in several modalities, are most visible during adolescence when the separation process is accelerated, hindered or obstructed. In unhealthy and troublesome families, parental supervision is inadequate and adolescents reject family control before they grow up and develop self-control behavior³⁸. According to the National Institute of Drug Abuse the lack of consistent family supervision and care is one of the most important etiological factors of addiction³⁸. Research has shown that strong emotional ties between the child and parents have a protective function from drug abuse³⁹. Parental drug abuse and child abuse are also risk factors for drug abuse in adolescence.

Based on the results of this study it is not possible to make any conclusions about causal relationship between abuse of psychoactive substances and social characteristics of participants. It is not clear whether the observed poorer social adjustment of heroin addicts and, to a lower degree, of marihuana users and their families preceded the abuse of psychoactive substances or the poor social adjustment was a consequence of such abuse. Identified trends in family variables (alcoholism of fathers, addictions of siblings) among heroin addicts and, to a lesser extent, among marihuana users indicate a more frequent family pressure towards addictive behaviors, which can be a result of both genetic influences and social learning⁴⁰.

Findings about the timing of first law breaking among drug users suggest that deviant behavior preceded the abuse of psychoactive substances. Almost 80% of heroin addicts reported that they had their first trouble with the police even before starting to take any drugs. The number of their committed crimes increased manyfolds after they begun to use marihuana and heroin, especially the latter. This finding corresponds in part with results of an earlier study which explored the relationship between addiction and crime, and showed that addicts are inclined to break the law even before they start to take drugs; addiction itself aggravates and increases the frequency of criminogenic activities due to the need to procure the money for obtaining drugs⁴¹.

Predicting addiction status on the basis of scores on EPQ scales

Results of discriminatory analysis showed that subjects can be classified into heroin addicts or control group based on their results on the EPQ scales. In this way, 68.9% of heroin addicts and 62.7% of control subjects were correctly classified. Our findings are similar to those that Lodhi and Thakur⁴² obtained on the group of male heroin addicts (75.9% correctly classified) and control subjects (79.3% correctly classified).

For the female subjects in our study, the rate of correct classifications was even higher: 83.6% of heroin addicts and 66.2% of control subjects were correctly classified. Based on these findings, one can conclude that scores on the scales of psychoticism, extraversion, neuroticism and lie allow better prediction of addiction status among women. In both men and women, the rate of correct classifications was higher than by chance alone (which would be 33%).

Comparison of the results of discriminatory analyses on male and female subjects indicates similar trends. Scores on the EPQ scales allow distinguishing heroin addicts and control subjects in both men and women, which is especially true for the latter. However, distinguishing heroin addicts from cannabis users, and particularly cannabis users from control subjects, is much more difficult.

Based on arithmetic means and structure coefficients, one can conclude that men who score higher on the scales of psychoticism and neuroticism, and lower on the scale of lie have more chances of developing (or having already

developed) addictive behaviors, whereas men who score higher on the scale of extraversion are more inclined towards abuse of marihuana. The dimension of extraversion is characterized by sociability, liveliness, jocularity, and impulsiveness. The extraversion score is mainly a measure of social orientation and sensation-seeking.

Based on our study findings, one can expect that women who score higher on the scales of psychoticism and neuroticism, and lower on the scale of lie would more often show addictive behaviors than those without such a personality profile. This corresponds to the findings of Francis²² who suggested that psychoticism and neuroticism are the key personality factors in addicts of both genders. Neuroticism is characterized by high levels of negative affect, such as depression and anxiety, and the neuroticism score is mainly a measure of trait anxiety, emotional dysfunction, and increased liability to develop abnormal reactions to stressful events. The dimension of psychoticism is associated with the susceptibility to exhibit recklessness, disregard for common sense or conventions, and inappropriate emotional expression. The psychoticism score measures paranoid tendencies and antisocial behaviors.

In this study, possibility of predicting cannabis users was very low, almost none. Scores on the EPQ scales did not allow making distinctions between marihuana users and heroin addicts, and even less so between marihuana users and controls.

The results of this study can be applied in practical work with persons who show disorders due to use of psychoactive substances. These findings can be used in planning and conducting preventive and therapeutic activities with heroin addicts and cannabis users of both genders.

Our study is limited by an imbalanced gender composition of the sample. A further limitation is related to the fact that no conclusions can be made on the causal relationships, i.e. it is not clear whether the observed differences in social characteristics and personality traits among the subjects in different groups preceded the abuse of psychoactive substances, or were their consequences. Longitudinal studies who explored personality traits before and after the abuse of psychoactive substances mostly indicated that personality traits as measured by the EPQ instrument have significant role in predicting future addictive behaviors. It was found that personality pathology is an antecedent, rather than a consequence of addiction disorder^{12,43,44}. Recent research studies have shown that personality traits often precede the onset drug use, indicating that, at least for some classes of drugs, personality features may have a predictive value, acting as a predisposing factor for substance abuse. Some research also points to the possibility that an interactive effect may occur between drug abuse and specific personality traits thus indicating that these personality characteristics and drug use appear to mutually influence each other⁶.

The findings of this study can be summarized as follows: heroin addicts have lower level of education, are

more often unemployed, imprisoned or on probation, and more often show antisocial behaviors even before starting to take heroin. They more often come from incomplete families of higher economic status and have a positive family anamnesis (especially alcoholism among fathers). Cannabis users are mostly unemployed and with only a high school diploma, rarely with a higher degree. In comparison with control subjects, they are more often convicted for misdemeanor or criminal acts, come from

economically average or above average families, and report mental disorders among family members. High scores on the scales of psychoticism and neuroticism in both men and women can indicate an increased inclination for addictive behaviors, whereas high extraversion scores are more characteristic for cannabis users. Scores on the EPQ scales can be used for distinguishing heroin addicts and control subjects, but not cannabis users and other groups.

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OSOBI NE LIČNOSTI I SOCIJALNE KARAKTERISTIKE HRVATSKIH OVISNIKA O HEROINU I KONZUMENATA MARIHUANE

SAŽETAK

Cilj provedenog istraživanja bio je ispitati razlike u različitim socijalnim karakteristikama (stupanj obrazovanja, radni, sudski i obiteljski status) između ovisnika o heroinu, konzumenata marihuane i ispitanika kontrolne skupine. Dodatni cilj je bio utvrđivanje mogućnosti razlikovanja ispitanika različitog ovisničkog statusa (oba spola) na temelju poznavanja rezultata na EPQ skalama. U odnosu na ispitanike kontrolne skupine, ovisnici o heroinu i konzumenti marihuane češće imaju niži stupanj obrazovanja, češće su nezaposleni i sudski kažnjavani, te češće potječu iz disfunkcionalnih obitelji. Kod konzumenata marihuane učestalost navedenih karakteristika općenito je manja nego kod ovisnika o heroinu. Postotak ispravnih klasifikacija ispitanika u skupine različitog ovisničkog statusa na temelju poznavanja rezultata na EPQ skalama, na uzorku muškaraca za 23,3% veći je od klasifikacije prema slučaju, dok za žene taj postotak iznosi 30%.