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FACTORS FROM THE SCHOOL ENVIRONMENT AND DRUG ABUSE

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A B S T R A C T

Research on the factors of drug abuse among adolescents in the school environment is an important precondition for preventive interventions and prevention programs. The subject of this research is the identification of factors originating from the school environment that have a direct impact on drug abuse and based on which is highly likely that drug abuse can be predicted, as well as the existence of differences between male and female adolescents in these factors. The sample for the research was drawn from the population of high school students in Belgrade as a random sample. The sample size was 1.287 students (675 females and 611 males), aged between 15 and 19 years. Analysis of the collected data was carried out using canonical discriminant analysis, separately for male and female adolescents. The results of the research showed that both male and female adolescents exhibit three forms of drug abuse: Using drugs only, Using and distributing drugs, and Distributing drugs only. Data analysis determined that these forms of drug abuse are most influenced by poor academic performance, skipping school, the absence of school police officers, easy drug availability, and certain forms of violence among students. The results also revealed differences between female and male adolescents in the factors contributing to drug abuse. For female adolescents, the most important factors were poor academic performance, lack of school police officers, violence in school, etc. For male adolescents, the key factors included the availability of suitable locations for drug sales and purchases within or near the school,

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the presence of betting shops and casinos near the school, and certain forms of violence, such as verbal abuse and sexual harassment of other students.

Key words:

adolescents, risk factors, school, drug abuse.

■ INTRODUCTION

Drug abuse is a behavior that undoubtedly occupies a very important place in terms of the severity of its consequences and the dangers it poses to the physical and mental health of individuals. Due to the immeasurable danger this behavior represents, the study of its etiology and the possibilities and methods of prevention, especially in the youth population, is of particular social interest. Research on the extent of drug use among high school students in European countries, conducted according to the ESPAD¹ methodology, has shown that the percentage of 15- and 16-year-old students who have used at least once illicit substance in their lifetime increased from 11% in 1995 (Hibell et al., 1995) to 17% according to the latest research in 2019 (ESPAD Group, 2020). It should be noted that the research data primarily refers to cannabis use, which was the most used illegal drug in all countries in the sample. The trend of cannabis use showed a general increase between 1995 and 2019, from 11% to 16% in terms of use at least once in the lifetime, and from 4.1% to 7.4% in terms of use in the past month. Additionally, the data indicates that in most countries, prevalence rates were higher among boys than girls.

Serbia participated in these studies on three occasions: 2007, 2011, and 2019. The results of the 2007 study, conducted on over 6.000 students, showed that about 15% of students had used an illicit substance at least once in their lifetime. The most used substance was marijuana, with 6.7% of students having tried it at least once, while 2.3% of students had used marijuana or hashish in the month preceding the study. According to the report of the 2019 study, the situation seems somewhat better, as the results show that 8.6% of students in the sample had tried an illicit substance during their lifetime, which is significantly lower than the data from the previous decade and lower than the European average, which, according to the latest research, is 17% (ESPAD Group, 2020).

Due to the undeniable significance that the school environment has on all types of student behavior, as well as in the prevention of behavioral disorders, it is of particular scientific interest to examine the extent to which the school environment can be used in drug abuse prevention. To determine this, it is essential to first establish whether, to what extent, and which factors of the school environment influence

¹ The European School Survey Project on Alcohol and Other Drugs – ESPAD

drug abuse. At the beginning of the study, researchers encounter the term “drug abuse,” whose meaning is defined differently and, accordingly, is operationalized in various ways. The term “drug abuse” is certainly not the most adequate for the set of behaviors associated with drugs, but it is often used in practice and among experts of different profiles as a common term for a range of behaviors that are sanctioned by the Criminal Code of the Republic of Serbia.² Some alternative expressions, such as drug use, addiction, or risky drug-related behaviors, are even less adequate and less acceptable.

Nevertheless, regardless of which term is accepted for this type of behavior, the availability of research findings on school factors that influence it is not extensive. A review of the literature shows that most studies focus solely on the factors related to drug intake, but not other forms of drug-related behavior. Research mainly concerns the role of poor academic performance (Bailey & Hubbard, 1990; Jugović, 2004; Mitrović et al., 2006; Newcomb & Bentler, 1988; Stojadinović, 2004; Šapić, 2008). Special attention is given to examining the connection between alcohol and drug use, and school performance (McCluskey et al., 2002; Townsend et al., 2007). Students who use alcohol and/or drugs are more likely to skip classes, have poorer concentration, negative attitudes towards school, and are less engaged and active in class. All of this leads to poorer academic performance, decreased motivation, irregular school attendance, and in the most severe cases, dropping out of school (Maljković, 2020). Although poor academic performance is sometimes strongly, and sometimes less strongly, related to drug use, almost all studies emphasize that academic failure precedes drug use — that is, it is a factor contributing to the behavior, not a consequence of it. A similar result was found in the work of domestic authors (Radovanović, 2016), where it was shown that poor academic performance is a significant predictor of use of various psychoactive substances, with the predictive strength varying depending on the level of academic failure and the interaction with personality traits. Furthermore, the authors point out that the interaction of poor academic performance with other risk factors in the school environment, such as inattention in class, irregular completion of homework, irregular studying, and others, does not weaken the predictive strength of poor academic performance; on the contrary, it amplifies it (Maljković, 2020).

However, a number of authors believe that poor academic performance acts as a mediator between drug use and other variables. For example, Šapić (2008) discovered that poor academic performance mediates the relationship between family dysfunction, psychoticism, and drug dependence. Mitrović and colleagues (2006) find the mediator role in the interactions between poor

² Chapter 23 of the Criminal Code of the Republic of Serbia “Criminal Offenses Against Health of People”, Articles 246, 246a, and 247.

academic performance and personality traits from Zuckerman's personality model (Zuckerman, 2002).³

In addition to poor academic performance, other factors contributing to drug abuse include school dropout, insufficient attachment to school, teacher aggression, physical violence in schools, parental neglect of a child's education, and others (Bailey & Hubbard, 1990; Bašić, 2009; Gottfredson, 2001; Mitrović et al., 2006; Newcomb & Bentler, 1998; Šapić, 2008). Protective factors against drug use include motivation for learning, commitment and attachment to school, positive attitudes towards school, a negative attitude towards violence, the presence of a school police officer, and others (Loeber & Farrington, 2000; Maguin & Loeber, 1996; Radovanović & Spasić, 2017; Žunić-Pavlović, Popović-Čitić & Pavlović, 2010). Attending school and spending time in productive activities at school are associated with lower levels of criminal behavior and drug abuse (Anderson, 2014; Gottfredson, 2002; Hirsch et al., 2018; Lochner & Moretti, 2004). Based on all the above, there is a clear need for networking among all relevant actors (from schools, through families, to the judiciary) to prevent school dropout (Maljković et al., 2021).

In this paper, the term "drug abuse" is accepted, but it refers to behaviors that differ from most of those mentioned so far. Specifically, this term encompasses all forms of behavior that are characteristic and possible during adolescent ages, and that are sanctioned by the provisions of the Criminal Code of the Republic of Serbia in Chapter 23. This practically means that the term "drug abuse" refers to: 1) the use or intake of drugs into the body only occasionally, from time to time, or when there is a perceived need for any amount or type of substance from the group of cannabinoids, CNS depressants, stimulants, or hallucinogens, 2) offering, 3) gifting, 4) lending drugs to others, 5) selling, 6) mediating in the sale or purchase, and 7) purchasing and possessing drugs for the purpose of sale.⁴

Given such a detailed and comprehensive definition, the authors of this paper are confident that no form of drug abuse has been left out of the definition of the basic term "drug abuse." This situation allows for a more precise definition of the problem, subject, and goal of the research. Accordingly, the research problem can be defined as determining whether, and to what extent, students who use and distribute drugs in any of the identified and possible ways differ from students who have no

³ Zuckerman's alternative five-factor model of personality contains five basic dimensions of personality: activity, aggressiveness/hostility, impulsive sensation seeking, neuroticism, and sociability. Among these five personality dimensions, impulsive sensation seeking and aggressiveness are particularly significantly correlated with substance abuse (Mitrović et al., 2006; Zuckerman, 1991). In support of this, some authors familiar with this model suggest that the trait of aggressiveness-hostility typically manifests in antisocial behaviors of various kinds, which certainly includes drug abuse, and that impulsive sensation seeking most often manifests as risky behaviors, such as committing criminal acts, alcohol use, and drug use (Radulović, 2014).

⁴ The common expressions in practice for behavior number one are "drug use," and for behaviors numbered 2 to 7, they are "distribution" or "drug dealing."

contact with drugs. However, since identifying differences in certain school factors using multivariate data analysis methods, such as canonical discriminant analysis, practically means determining the influence of these factors on those forms of drug abuse (Mejovšek, 2008), the problem of this research can also be defined as determining the impact of school environment factors on the type and degree of drug abuse.

Taking this into account, the subject of the research can be defined as: a) identifying the factors originating from the school environment that significantly influence drug abuse, and b) investigating the differences in the nature of these factors between male and female adolescents. The goal of the research is to enable the planning and implementation of preventive measures and interventions that would have a real impact on preventing drug abuse among adolescents in the school environment.

Given the defined subject of the research, it was possible to formulate several hypotheses of varying levels of generality. The broadest hypothesis was: *Variables belonging to the school environment represent factors that can explain a significant percentage of drug abuse among high school students.* Additionally, another general-level hypothesis would relate to the degree of explainability of drug abuse by students depending on gender and the type of abuse: *The extent of the variance in drug abuse explained by factors from the school environment varies depending on gender and the type of abuse.*

■ METHODOLOGY

Drug Abuse Variables

Based on the literature review and previous research, and adhering to the adopted definition of drug abuse, the following variables were selected for the sample in which drug abuse was examined: 1) Frequency of drug intake or frequency of drug use, 2) Frequency of drug sale, 3) Gifting drugs to others, 4) Lending drugs to others, 5) Mediating in the purchase or sale of drugs, and 6) Buying and possessing drugs for resale.

Because all variables, except the first, were distributed as rare cases, these variables were transformed into a dichotomous form: “yes – no drug distribution” in one of these ways. When dichotomizing the data and analyzing them, it was found that drug abuse has three forms: 1) *Only use*: This refers to the intake of drugs into the body without distributing them in any way. In this first form of abuse, 83 or 6.45%

of the total number of respondents in the sample participate.⁵ 2) *Use and distribution of drugs*: This form of abuse is the most common in the sample. The total number of respondents who behave this way is 145 or 11.27%. 3) *Only distribution of drugs*: This form does not involve the intake of drugs into the body. It is the least common form of abuse, as only 36 or 2.8% of respondents exhibit this behavior.

The opposite category to all these forms of abuse is *No contact with drugs*. This category is formed in cases where the respondents' answers to each variable from 1 to 6 are negative.

Variables From the School Environment

There are 24 variables in the sample of variables related to the school environment. These were selected based on previous research conducted by both foreign and domestic authors. The details of these studies and authors were provided earlier. Since each variable is individually listed in Table 1, and due to the character limit, they will not be listed here.

Respondent Sample

The study of the relationship between school environment and drug abuse variables was conducted on the sample of 1.287 high school students from Belgrade. The age range was from 15 to 19 years, and the number of participants per age group follows a normal distribution. The average age of the participants was 17.04 years, with a standard deviation of 1.147. The sample consisted of 611 (47.47%) male adolescents and 675 (52.45%) female adolescents.⁶

Instruments and Data Collection Method

All data for this study were collected using a specially designed *Questionnaire on the Characteristics and Behavior of High School Students in Belgrade*. The students answered the questions in writing, in a completely anonymous setting, after being informed about the purpose and goals of the study. The completion of the Questionnaire was administered by school psychologists. Before filling out the Questionnaire, students were informed that participation in the study was voluntary, and they

⁵ The sample will be described later

⁶ At 15 years old: 10.5% female and 10.5% male; At 16 years old: 21.3% female and 24.0% male; At 17 years old: 29.6% female and 29.6% male; At 18 years old: 29.3% female and 27.2% male; At 19 years old: 9.3% female and 8.7% male.

were free to decline or withdraw at any point during the process. The overall sample attrition, including refusals to participate, withdrawals during the completion, or incomplete questionnaires, was just 45 cases. A total of 1,287 correctly completed questionnaires were used for the research.

Data Analysis

The data regarding the relationship between the school environment and drug abuse variables were analyzed using *Canonical Discriminant Analysis*, which is part of the Statistical Package for the Social Sciences (IBM SPSS Statistics v. 22.0 for Windows).

■ RESULTS

The testing of differences between respondents who *Only use*, *Use and distribute*, or *Only distribute* drugs, on one side, and those who had no contact with drugs, on the other, in relation to the factors originating from the school environment is presented in the following table. The first part of the table contains basic parameters of the analysis, and the second part presents the standardized discriminant coefficients and the correlations of each variable from the school environment with the isolated latent dimensions (discriminant functions) for each of the three forms of drug abuse.

Table 1. Canonical discriminant analysis of only drug use, drug use and distribution, and only drug distribution in factors from the school environment – analysis by gender⁷

Key parameters of canonical discriminant analysis	Types of Drug Abuse											
	Without contact vs Only use						Without contact vs Use and distribute					
	m			f			m			f		
	m	c	r	m	c	r	m	c	r	m	c	r
Number of functions	1			1			1			1		
Canonical correlation	.456			.373			.412			.523		
Wilks' Lambda	.792			.861			.831			.726		
Significance level	.000			.017			.000			.000		
Variables of the school environment	c	r		c	r		c	r		c	r	
Poor performance in the previous grade	.012	.199		-.140	-.349		-.214	-.322		.114	.002	
The school does not have a police officer	.097	.028		.420	.152		.156	.310		.551	.429	
Teachers make an effort to teach us something	.025	.304		-.009	.134		.144	.254		-.099	.150	
Some teachers are aggressive	-.356	.078		-.175	-.136		.021	.212		.090	.213	
Some teachers drink too much	.250	.390		-.014	.065		.155	.313		.072	.305	
Proud of the school's name	-.169	.106		.115	.234		-.194	-.035		.047	.135	
Teachers are understanding when students have problems	.276	.377		.220	.288		-.043	.036		.202	-.025	

⁷ c is the canonical discriminant coefficient of the variable, and r is the correlation of the variable with the discriminant function

Some teachers belittle students	-.054	.212	.083	.066	.051	.249	-.043	.223	.341	.288	.178	.271
Some teachers have threatened or insulted students	.145	.160	-.166	-.093	-.054	.167	.101	.263	.038	.249	.102	.255
Grades are given randomly	.072	.385	-.192	-.050	.096	.230	.060	.301	.114	.152	-.335	-.066
Grades are not given based on knowledge	.350	.444	-.042	.001	-.182	.119	.111	.292	-.100	.068	.030	.089
There are convenient places in the school for drug dealing	.019	.268	.078	.168	-.069	.277	.046	.258	-.028	.281	.173	.284
Subcultural buildings/facilities near the school	.257	.290	.096	.023	.020	-.039	.026	-.026	.067	.093	-.104	-.083
Presence of drug dealers in the school environment	.134	.296	.043	.111	.388	.514	.296	.437	.262	.352	.286	.280
Participating in sports	.126	.164	-.194	-.110	-.088	-.071	-.369	-.309	.035	.056	.029	-.011
Extracurricular activities	.170	.175	-.163	.228	-.049	.001	.080	.069	-.002	.033	.109	.208
Skipping classes	.116	.411	.253	.476	.002	.396	.085	.267	-.108	.122	-.094	.181
Truancy from school	.403	.508	.249	.407	.528	.682	.545	.599	.075	.237	.122	.252
Participating in a fight at school	.118	.376	-.314	.128	.291	.117	-.154	.176	.059	.282	.552	.394
Participating in a fight outside of school	.421	.433	.598	.612	.019	.206	.097	.323	.036	.324	.232	.246
Insulting other students	.028	.276	.114	.288	.259	.505	.023	.309	.251	.492	-.100	.131
Sexual harassment	.036	.157	.225	-.383	-.005	.226	.002	.251	.368	.506	-.075	.060
Boycotting other students	.032	.226	-.215	.157	-.088	.346	.063	.379	-.064	.383	.457	.285
Threats to other students	.246	.179	.169	.248	.278	.423	.252	.420	.499	.661	.325	.435
Centroids of groups		m	f		m		f		m		f	
There is no abuse	-159		-130		-.143		-.267		-.095		-.081	
There is abuse	1.648		1.239		1.419		1.403		2.227		2.155	

According to the data in the table above, for all types of abuse, there is one latent dimension that is responsible for the differences between adolescents who abuse drugs and those who do not abuse them. The canonical correlations of these dimensions are significant at the 0.01 level. The lowest canonical correlation coefficient is of the order of .373, for adolescent girls who Only use drugs, and the highest .523 again for adolescent girls who Use and Distribute drugs. Generally speaking, these levels of canonical correlations are lower than expected given the number (24) of variables from the school environment. According to the results obtained, these 24 variables explain between 14 and 27.35% of the variance in the differences between adolescents who have no contact with drugs and those who abuse them in one of the three described ways.⁸ Looking at the variables individually, it seems that they can be conditionally classified into three categories according to the degree of contribution to these differences. The first category would include those whose contribution to the differences is absent or very small. Typical examples of these variables are students' perceptions that teachers make an effort to ensure that students learn the material, that some teachers are aggressive, that they use alcohol excessively, that they threaten and insult students, participation in extracurricular activities, and some others. The second category includes variables that have an impact only on some forms of drug abuse or among adolescents by gender. These variables with a sporadic impact on the differences are: the perception that some teachers belittled them, that grades are not given according to knowledge, not doing sports, running away from classes, the existence of subcultural buildings/facilities near the school, and some forms of violence among students. In the above table, it can be seen that these variables have significant discriminant correlation coefficients with the discriminant function. The level of these correlation coefficients in some cases reaches a substantial level.

The third category consists of five variables that have a systematic or near-systematic effect on differences in drug abuse. These are poor school performance, the presence or absence of a school police officer, truancy from school, the presence of drug dealers in the school environment, and threats to other students. These five variables will be discussed separately and in more detail in the next section.

⁸ These are squared canonical correlation coefficients

■ DISCUSSION

Considering that 24 school environment variables explain between 14 and 27.53% of variance in the differences⁹ between male and female adolescents who abuse and do not abuse drugs, it can be reasonably assumed that the school environment does not have a major impact on this abuse. This result must, of course, be verified in subsequent repeated studies. In support of the previous view on the limited impact of the school environment, one can also cite the fact that a significant number of variables do not contribute to the differences between adolescents who abuse and do not abuse drugs, but also a considerable number of variables that have only a sporadic impact on differentiation. Sporadic impact is important, but it manifests itself only in one of the three behavioral forms of abuse and/or only in male or female adolescents. It is difficult to find a pattern that would withstand all empirical tests for most of these variables, except for those that deal with violence. There is a fairly clear pattern in the association of some of these forms with drug abuse.

Poor academic performance stands out among the variables that systematically contribute to the differences between students who abuse and do not abuse drugs. Poor performance is a strong predictor of differences in adolescent girls who only use drugs (-.415 and -.423) and a less strong, but significant predictor in adolescents boys who both use and distribute drugs (-.214 and -.322). In addition to these two cases, it is important to mention its influence on differences in adolescent girls who only use drugs (-.140 and -.349). In all three examples, poor academic performance favors drug abuse.

This result is somewhat inconsistent with the views of a number of researchers (Bailey & Hubbard, 1990; Mitrović et al., 2006; Newcomb & Bentler, 1988; Stojadinović, 2004) who believe that poor achievement has a general predictive role in drug abuse. However, this role clearly changes when examined, depending on the form of drug abuse and depending on gender, and this should be taken into account when organizing and creating all preventive interventions.

Another important factor that distinguishes students who abuse drugs from those who do not abuse them is truancy from school. This truancy, defined as not coming to school for at least three days without the knowledge of the parents, strongly increases the likelihood of Only using and Using and distributing drugs in both male and female adolescents. The same direction of association exists for the third form, i.e. Only distributing drugs, but truancy is only correlated with this behavior, and at a fairly low level. Truancy should not be confused with interruptions or dropping out of school. These phenomena were not analyzed in this paper, because the research was conducted in regular school settings and it was therefore not possible to reach such respondents. It is reasonable to assume that similar or even the same results

⁹ Squared canonical correlations of each individual form of drug abuse.

would be obtained in these cases. It is important to note that comparisons of the age at which truancy began and the age of onset of drug use clearly indicate that truancy precedes this behavior, meaning that it is a factor in drug abuse, not its consequence.

The third variable from the school environment that is extremely important for drug abuse is the absence of a school police officer. His/her presence in the school premises and schoolyard is a strong protective factor, especially for those adolescent boys who Only Distribute Drugs (843 and .180), but also for adolescent girls who Use and Distribute Drugs (.551 and .429) or Only Use Drugs (.420 and .152). Interestingly, this variable has no effect on this behavior among adolescent boys who Only Use Drugs. However, regardless of this, it is worth saying that the existence of a school police officer is a very important preventive factor that would effectively eliminate many drug problems among students.

The variable Presence of drug dealers in the school environment also plays a significant role in the existence of differences between students who abuse drugs and those who do not abuse them. This presence is a strong risk factor for both sexes of students who Use and Distribute Drugs and somewhat less strong, but still very pronounced, in the behavior of Only Distributing Drugs. Interestingly, drug dealers in the school environment have no influence on Only Use Drugs, neither among male or female adolescents, so it can be assumed that neither group obtains drugs from those dealers who visit their schoolyard. Independently of abstinence in this behavior, the fact remains that the availability of drugs in the schoolyard is a strong risk factor for most students who abuse drugs in the two ways described. This is another reason why school police officers are used as a very useful and powerful protective factor.

The last variable from the group of those that are systematically important for drug abuse, and that belong to the school environment, speaks of psychological violence manifested as “threats to other students”. These threats play an important role in all forms of abuse, both for female and male adolescents, but this role is particularly pronounced in students who deal drugs, i.e. in Use and Distribute Drugs and Only distribute drugs. Considering this systematic connection of “threats to other students”, as well as the previously mentioned results with other violence variables, it seems justified to claim that already at the adolescent age there is a pronounced connection between violence and drug abuse, which can later develop into very serious violent acts. There is no evidence in this research whether violence precedes abuse or is a consequence of abuse. The fact that a variable has predictive ability does not necessarily mean that it is a factor in that behavior. This ability may also exist because that variable is an important symptom of that behavior, and therefore, it is an indicator predictability, and not an etiological factor of a certain behavior. In the case of violence, researchers have an important task to answer the question of whether it is one or the other of the aforementioned statuses.

The results obtained point to the conclusion that the backbone of preventive programs when it comes to the school environment should be the five variables that have been discussed. The classical method that is most often used, i.e. education about the effects and harmfulness of drugs, probably does not achieve anything. The literature shows the ineffectiveness of these programs, and some researchers also draw attention to their harmfulness. What is certain, however, is the fact that all programs that are based on etiological factors from the school environment must take into account gender differences.

The existence of gender differences in drug abuse is not a new phenomenon. Research has found that they exist in very different areas: in the number of men and women who use drugs (Greenfield et al., 2010; Marsh et al., 2018; SAMHSA, 2014); in the way they first come into contact with drugs (Doherty et al. 2000; Najavitis, 2002); in the age of first drug use (Brady & Randall, 1999); in the effects of abstinence (Becker & Koob, 2016); in the frequency of delinquent behavior and the type of offense (Breen et al., 2005; Curry & Latkin, 2003). Research has rarely been conducted on adolescent samples, although it does exist (Radovanović, 2016; Serpelloni et al., 2013). Among the etiological factors, the roles of physical and sexual abuse (Liebschutz et al., 2002; Moncrieff, 1996; Simpson & Miller, 2002) and the roles of mood disorders, depression and anxiety (Simon, 2009) have been studied. In both areas, significant differences between the sexes have been found. A somewhat broader and different scale of potential risk factors in adolescent samples is found in the works of Serpelloni et al. (2013). They also study differences between the sexes (for example, the presence of close people who use drugs, alcohol use, problems in family relationships, etc.), but they do not include variables from the school environment.

In this study, with a sample of 24 variables from the school environment, interesting and important results are obtained on the different etiological roots of drug abuse depending on gender. Among students who Only use drugs, there were only five variables on both sexes, which significantly separate those who abuse and do not abuse drugs: skipping classes, truancy from school, perception that teachers understand students' problems, participation in fights outside of school, and threats made to other students. Differences existed in as many as 12 variables. Among adolescent girls, poor performance in the previous grade and the absence of a school police officer were particularly noteworthy. These variables are not present in adolescent boys. Compared to adolescent girls, they are dominated by perceptions that some teachers use alcohol excessively, that grades are not given according to knowledge, and that there are so-called subcultural facilities (gambling, betting shops, cafes, etc.). These differences are very easily seen in the following table.

Table 2. Differences by gender in variables that are correlated with Only drug use

Variables	Only use				Variables	Only use			
	m	c	r	f		m	c	r	f
Poor performance in the previous grade	-	-	-.140	-.349	Convenient places in the school for drug dealing	.268	-	-	-
The school does not have a police officer	-	-	.420	.157	Subcultural buildings/facilities near the school	.257	.290	-	-
Teachers make an effort to teach us something			.304	-	Drug dealers around the school	.296	-	-	-
Some teachers drink too much	.250		.390	-	Skippping classes	.116	.441	.253	.476
Some teachers are aggressive	-.356		-		Truancy from school	.403	.508	.249	.407
Teachers are understanding when students have problems	.276		.377	.220	Participating in a fight at school	.376	-	-	-
Grades are given randomly	.355		-	-	Participating in a fight outside of school	.421	.433	.598	.612
Grades are not given based on knowledge	.350		.444	-	Insulting other students	.276			.288
					Threats to other students	.246	.176	.169	.248

Table 3. Display of gender differences in significant variables associated with Drug Use and Distribution

Variables	Use and distribution of drugs				Variables	Use and distribution of drugs			
	c	r	c	f		c	r	c	f
Poor performance in the previous grade	-.214	-.322	-	-	Not participating in sports	-	-	-.369	-.309
The school does not have a police officer	.156	.310	.551	.429	Skipping classes		.396		.267
Teachers make an effort to teach us something	.144	.254	-	-	Truancy from school	.528	.682	.545	.599
Some teachers drink too much	.155	.313		.305	Participating in a fight at school	.291	.117	-	-
Some teachers have threatened or insulted students	-	-		.263	Participating in a fight outside of school	-	-		.323
Grades are given randomly	-	-		.301	Insulting other students	.259	.505		.309
Grades are not given based on knowledge	-	-		.292	Boycotting other students		.346		.379
There are convenient places in the school for drug dealing		.277		.258	Threats to other students	.278	.423	.252	.420
Drug dealers around the school	.388	.514	.296	.437					

Table 4. Display of gender differences in significant variables associated with Only Distributing Drugs

Variables	Only Distributing Drugs				Variables	Only Distributing Drugs			
	m		f			m		f	
	c	r	c	r		c	r	c	r
Poor performance in the previous grade	-	-	-.415	-.423	Truancy from school		.237		.252
The school does not have a police officer	.843	.180	-.480	.191 ¹⁰	Participating in a fight at school		.282	.552	.394
Proud of the school's name	-	-	.373	.397	Participating in a fight outside of school		.324	.232	.246
Some teachers belittle students	.341	.288	.178	.271	Insulting other students	.251	.492	-	-
Some teachers have threatened or insulted students		.249		.255	Sexual harassment	.368	.506	-	-
There are convenient places in the school for drug dealing		.288	.173	.284	Boycotting other students		.383	.457	.285
Drug dealers around the school	.262	.352	.286	.280	Threats to other students	.499	.661	.325	.235

¹⁰ The variable has a suppressor role

In the form of drug abuse Use and distribution of drugs, for both sexes, the presence of dealers in the school environment, truancy from school, and threats to other students make a substantial and simultaneous contribution to the differences compared to students who do not have contact with drugs. Differences between the sexes exist for nine variables. The most important of these are that poor performance is now an important factor for male adolescents, but not for female, that the absence of a police officer in the school is still of great importance for girls and of minor importance for boys, and that not doing sports is characteristic of girls and completely irrelevant for boys.

The most noticeable and important difference in Only distribution of drugs is certainly the important role of poor school performance among adolescent girls. This variable, together with participation in a fight at school and boycotting some students, is the basis for predicting Only Distributing Drugs by female students. None of these three variables exist among adolescent boys who deal drugs. Among adolescent boys, a very strong predictor of Only Distributing Drugs is the absence of a school police officer (.843 and .180). This variable now, completely unexpectedly, has a suppressor status among adolescent girls (-.480 and .191). Among the variables of violence among adolescent boys who Only Distributing Drugs, it is worth mentioning insulting other students and sexual harassment as quite strong predictors that do not exist among adolescent girls.

■ CONCLUSIONS AND RECOMMENDATIONS

After analyzing the data in this study, it was reliably determined that poor academic performance, truancy from school, the absence of school police officers, easy availability of drugs due to the presence of dealers in the school environment, and some forms of violence among students represent strong risk factors for all forms of drug abuse by students. In addition, it was reliably determined that in these factors, as well as those that are important only for certain forms of abuse, there are evident gender differences that significantly affect not only the likelihood of abuse but also its manifestations.

The applied method of analyzing the influence of school environment variables on drug abuse has reliably established that the listed factors represent real factors of drug abuse among young people. However, because drug abuse is an extremely complex research phenomenon in which the influences of factors of different origins are intertwined, the authors of this article believe that it is necessary to continue researching the factors of this behavior. It is undeniable that the applied method of data analysis can reliably determine which factors of drug abuse act directly and which indirectly, and it has clearly established this by emphasizing that the factors

listed above are direct factors of this abuse. However, the method, and the research as a whole, cannot reveal the “internal mechanisms” by which these behaviors, such as violence at school or truancy from school, cause the testing and later use, and even the distribution of drugs. The only way to discover these mechanisms is through the so-called clinical or idiographic research that, through the analysis of individual cases and individual phases in behavior, reveals the paths of transformation of one type of behavior into subsequent behaviors of a different nature.

The research, the results of which are presented in this article, did not include respondents younger than 15 years of age in the sample, which is one of the important limitations of the results obtained in this research. The existence of behavioral disorders (drug experimentation/use/disposal) at an early age and their research is very useful and extremely important for the prevention of drug abuse. However, it is clear that not all phenomena can be investigated in one research endeavor, and therefore new research is proposed, including those with completely different research concepts.

A particularly important issue is the implications of research on the prevention of drug abuse within schools. Given that there are risk factors for abuse that are the same for both sexes, prevention programs should have certain common content for all students. Among these, special emphasis should be placed on systemic ways of solving the problems of poor performance, truancy from school, easy availability of drugs, and violence among students. One way to achieve this is to engage school police officers and experts in adolescent behavioral disorders in schools. The school, by the nature of its activity, must also be the organizer and carrier of other types of preventive interventions, such as teaching skills to resist peer pressure and replacing peer groups with those with a value system acceptable to the social community. However, it must be borne in mind that there are gender differences in the factors of drug abuse (in all its forms) and that preventive interventions must be adapted to these differences. If this is not done, these interventions will almost certainly have low effectiveness.

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