THE SIGNIFICANT DETERMINANTS OF SUBSTANCE USE AMONG YOUNG PEOPLE FROM SECONDARY SCHOOL

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Abstract

The aim of the study was to identify both protective and risk factors for substance use among secondary school students. The research sample consisted of 726 secondary school students from Slovakia, aged from 11 to 19 years (431 girls, 295 boys). Within the framework of quantitatively oriented research, two areas have been monitored through the author's questionnaire: Free time and emotions experienced in the family. The data was analysed through factor and regression analysis. To the basic results of the research belong the findings that the active spending of free time and the experiencing of positive emotions within the family are a protective factor in relation to substance use. The adolescents' spending of free time with parents had no effect on substance use. Conversely, passive spending of free time was associated with a higher frequency of substance use.

Keywords: Leisure time, drugs, adolescents

Introduction

The substance use of young people is a problem, which has long been monitored by various research activities. In Slovakia, for example, the TAD (Tobacco, Alcohol, Drugs) research study in primary and secondary schools periodically investigates the state of the consumption of addictive substances. According to this study, persistent trends are confirmed: a slight decrease in the smoking of tobacco - one-off, occasional and regular (regular smoking once or twice a day, 23.8% of secondary school students). With alcohol, lower frequencies of drinking is observed, however, there are growing addiction symptoms - especially among girls. Also, the indications of binge drinking are reduced (in 2014, 43.5% of students stated that they'd had a so-called "black-out", compared to 51.9% in 2010). The study also reported a decrease in the use of a wide spectrum of illicit drugs (e.g. in the case of one-off marijuana use, a decline has been observed since 2006, when

30.1% of respondents stated it, and in 2014, when 27.4% of respondents stated it) (Nociar, 2014).

Authors concerned with the risk areas associated with substance use, have especially referred to personality factors (a genetic predisposition, a biological predisposition), psychological factors (emotional experiencing, a tendency towards a certain course of behaviour, motivation, the factor of learning, personality traits, a way of thinking and an evaluation of the situation), social factors (lower education levels, social groups, social deprivation, family environment (Vágnerová, 2008, Fischer, Škoda, 2014) and the social environment (Ybrandt, 2010). The authors, Kabíček and Hamanová (2005), classified both protective and risk factors, and divided them into three groups – individual (e.g. among the protective factors, they include the involvement in positive peer groups, high intelligence and self-control, while among the risk factors, they include low confidence and self esteem, neglect and abuse, unemployment, an inclination to risk), family (e.g. among the protective factors, they include a good relationship between the parents and the children, support for adolescents, the absence of conflict between family values and peer groups; while among the risk factors, they include: too authoritarian or benevolent parents, chronically ill parents, a dysfunction within the family and a lack of communication) and societal (protective: a high quality school, patterns of society and strict drug legislation; risk: low socio-economic status, glorification of negative behaviour in the media).

The research suggests that the risk factors differ according to gender: e.g. antisocial behaviour is a risk factor for boys, while for girls higher levels of depression, low self-esteem, traumatisation (e.g. sexual abuse) and Post-traumatic Stress Disorder (Becker, Grilo, 2006, Bromberger, Donovan, 1997, In Ybrandt, 2010).

The aim of the submitted study is to determine which of the selected areas (free time, the experiencing of emotions within the family) are relevant in relation to the risk and protective factors of substance use among young people.

Method
Research sample and data collection
The research sample consisted of 726 secondary school students (grammar schools and secondary vocational schools), of which 431 (59.4%) were female and 295 (40.6%) were male. 164 (22.6%) students were aged 11-15 years, 538 (74.1%) were aged 16-19 years, and 24 (3.3%) students were aged 19 years and above. 193 (26.6%) of the respondents attended the first year, 140 (19.3%) the second year, 222 (30.6%) the third year and 168 (23.1%) of the respondents attended the fourth year.

The respondents responded anonymously during lessons, in the presence of teachers or interviewers.

Within the framework of a questionnaire survey, aspects related to the spending of free time and the experiencing of emotions within the family were primarily surveyed and besides that also the following aspects:

- family environment - 535 (73.7%) of respondents came from two-parent families, 191 (26.3%) from families in which one parent is absent.
- listening to music with vulgarisms - 297 (40.9%) of respondents listen to it.
- getting pocket money - 435 (59.9%) of respondents get pocket money, 291 (40.1%) respondents do not.
- fruit machines - 184 (25.3%) of respondents play them, 542 (74.7%) do not play them,
- membership of a group of peers - yes 539 (74.2%), no 186 (25.6%).

Measures

Our self-designed questionnaire consisted of three main areas: the spending of free time, experiencing emotions in the family and substance use. In the areas of the spending of free time and experiencing emotions in the family, the respondent answered on a three-point scale (1 - not at all; 3 - often), which expresses the frequency of carrying out a given activity and the frequency of experiencing emotions. During the examining of substance use, the respondents marked down the frequency (1 - never, 6 - every day).

Results
Descriptive analysis

In Table No. 1, the average value of the frequency of the spending of free time is shown. Respondents most frequently listen to music, go out with friends and spend time on the Internet. The least time was spent playing board games with the parents, visiting groups and voluntary work,

A more detailed analysis was focused on identifying the statistically significant differences (p <0.05) according to gender, residence and the school year of the respondents. Statistically significant differences were identified in the following activities:

- boys more often than girls play on the computer, play sports and have a part-time job; girls more often than boys listen to music, read books, spend time with their siblings and prepare for school;
- respondents from rural areas more often spend time with their siblings, are bored to a greater extent and are preparing more for school;
- the lower the school year of the respondents, the more often they watch TV, and the higher the year that the respondents attend, the more they

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read books and have part-time jobs.

Table 1 Descriptive characteristics of the variable "free time"

An analysis of free time activities	M	SD
I listen to music	2.89	0.33
I go out with friends	2.78	0.46
I am on the Internet	2.73	0.46
I talk with my parents	2.70	0.49
I play sports	2.50	0.61
I spend time with my siblings	2.37	0.69
I am getting ready for school	2.34	0.66
I watch TV	2.34	0.64
We go on trips with our parents	1.99	0.65
I read books	1.88	0.77
I play games on the computer	1.87	0.74
I am bored	1.86	0.62
I have a part-time job	1.81	0.74
I attend after-school activities	1.68	0.83
We play board games with our parents	1.51	0.57

Legend 1: M – Median, SD – Standard Deviation

Table No. 2 shows the frequency of experiencing selected emotions in the family. Respondents most frequently experienced joy, happiness and assurance, and least often helplessness, fear and loneliness. During a more detailed analysis, significant differences were detected only in the case of gender. The girls in the family experience negative emotions to a greater extent ($p<0.005$) – fear, anger, helplessness and loneliness; conversely boys experience greater positive emotions - trust and assurance.

Table 2 Descriptive characteristics of the variable "emotions in the family"

Experiencing emotions in the family	M	SD
the sensation of joy in the family	2.81	0.41
the sensation of happiness in the family	2.77	0.45
the sensation of assurance in the family	2.70	0.51
the sensation of trust in the family	2.69	0.53
the sensation of anger in the family	2.14	0.58
the sensation of loneliness in the family	1.53	0.64
the sensation of fear in the family	1.43	0.57
the sensation of helplessness in the family	1.41	0.60

Legend 2: M – Median, SD – Standard Deviation

In Table No. 3 the frequency of the use of individual substances is shown. Respondents consumed energy drinks most frequently (every day - N 34), cigarettes (every day - N 144) and alcohol (every day - N 7). From illegal drugs, the most consumed was marijuana (every day - N 10).

When analysing the differences among the four most commonly used substances, significant differences ($p <0.05$) according to gender were shown in energy drinks and marijuana, which boys consume more. Respondents

from the town more often consumed energy drinks and marijuana. Significant differences were shown when drinking energy drinks, depending upon the school year, – students from the first and fourth year mostly consume them, and alcohol – its consumption increases with each increasing school year.

Table 3 Descriptive characteristics of the variable "substance use"

		never	1 x every half year	1 x every month	1 x every 2 weeks	1 x every week	every day	Total	M	SD
energy drinks	N	78	267	195	67	85	34	726	2.88	1.33
	%	10.7	36.8	26.7	9.2	11.7	4.7	100		
cigarettes	N	313	149	58	25	37	144	726	2.66	1.96
	%	43.1	20.5	8.0	3.4	5.1	19.8	100		
alcohol	N	118	204	203	97	97	7	726	2.82	1.29
	%	16.3	28.1	28.0	13.4	13.4	1.0	100		
marijuana	N	573	95	28	8	12	10	726	1.38	0.92
	%	78.9	13.1	3.9	1.1	1.7	1.4	100		
pervitin	N	716	6	2	0	1	1	726	1.03	0.27
	%	98.6	0.8	0.3	0.0	0.1	0.1	100		
heroin	N	726	-	-	-	-	-	726	1.00	0.0
	%	100	-	-	-	-	-	100		
LSD	N	721	5	-	-	-	-	726	1.01	0.08
	%	99.3	0.7	-	-	-	-	100		
ecstasy	N	722	4	-	-	-	-	726	1.01	0.07
	%	99.4	0.6	-	-	-	-	100		
tramal	N	699	22	4	-	1	-	726	1.05	0.27
	%	96.3	3.0	0.6	-	0.1	-	100		
magic mushrooms	N	692	28	6	-	-	-	726	1.06	0.26
	%	95.3	3.9	0.8	-	-	-	100		
cocaine	N	719	5	1	1	-	-	726	1.02	0.20
	%	99.0	0.7	0.1	0.1	-	-	100		
thinner, glue	N	708	13	2	1	1	1	726	1.04	0.31
	%	97.5	1.8	0.3	0.1	0.1	0.1	100		

Legend 3: M - Mean, SD - Standard Deviation

Exploratory factor analysis

The above-mentioned items relating to free time, the experiencing of emotions in the family, values and the frequency of use of addictive substances, were classified into different groups (factors), for the needs of the following analysis. Principal components analysis and the Varimax rotation methods were used. Prior to the implementation of factor analysis,

the Kaiser Meyer Olkin (KMO) test and the Barlett´s Sphericity test were used.

In Table No. 4, a rotated factor matrix, consisting of individual items relating to free time, is shown. The result of the KMO test for the variable of spending free time was 0.647 and the result of the Barlett´s Sphericity test was statistically significant (χ2=716.417, p<0.000). Three relevant factors were identified: Factor 1 – free time spent with parents, Factor 2 - the passive spending of free time and Factor 3 - the active spending of free time.[1] All three factors together accounted for 38.9% of the total variance.

Table 4 Results of an exploratory factor analysis for measuring the spending of free time

	Factor 1	Factor 2	Factor 3
We go on trips with our parents	0.712		
We play board games with our parents	0.645		0.126
I talk with my parents	0.608	0.175	
I spend time with my siblings	0.547		
I am on the Internet		0.638	
I listen to music		0.539	
I watch TV	0.112	0.515	
I am bored	-0.202	0.495	-0.152
I go out with my friends	0.143	0.443	0.237
I play sports	0.259		0.619
I am getting ready for school	0.418		-0.549
I have a part-time job	0.115	-0.201	0.535
I read books	0.380	-0.102	-0.459
I play games on the computer		0.385	0.412
% of exhausted variance	15.7	11.8	11.4

In Table No. 5, a rotated factor matrix, consisting of individual items relating to the experiencing of emotions within the family, is shown. The result of the KMO test for the variable of the experiencing of emotions within the family was 0.800 and the result of the Barlett´s Sphericity test was statistically significant (χ2=1310.172, p<0.000). Two relevant factors were identified: Factor 1 - positive emotions, Factor 2 - negative emotions. All factors together accounted for 55.2% of the total variance.

Table 5 Results of an exploratory factor analysis for measuring the experiencing of emotions in the family

	Factor 1	Factor 2
the sensation of joy in the family	0.793	
the sensation of happiness in the family	0.779	-0.180
the sensation of assurance in the family	0.731	-0.241
the sensation of trust in the family	0.728	-0.204
the sensation of anger in the family		0.740
the sensation of fear in the family		0.726
the sensation of helplessness in the family	-0.198	0.687

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[1] The item "I attend after-school activities" did not satisfy even one of the factors, therefore, we have excluded it from further analysis.

the sensation of loneliness in the family	-0.285	0.556
% of exhausted variance	30.4	24.8

In Table No. 6, a rotated factor matrix, consisting of individual items relating to the frequency of substance use, is shown. The factor analysis was, due to the low number of certain items, only conducted from the four most commonly consumed substances - energy drinks, alcohol, cigarettes and marijuana. The result of the KMO test for the variable was 0.692 and the result of the Barlett´s Sphericity test was statistically significant ($\chi2=358.239$, $p<0.000$). One relevant factor was identified: Factor 1 - the frequency of substance use, which accounted for 48.1% of the total variance.

Table 6 Results of an exploratory factor analysis on the frequency of substance use

	Factor 1
cigarettes	0.793
alcohol	0.728
marijuana	0.665
energy drinks	0.569
% of exhausted variance	48.1

Regression analysis

A multiple linear regression analysis was carried out for estimating the weight of the selected factors for substance use. A regression model was created for the consumption of addictive substances as a dependent variable (Tab. No. 7), and the ENTER method was chosen.

Table 7 Regression model of substance use

	B	Std. Error	Beta	t	Sig.
(Constant)	4.510	0.449		10.049	0.000
FT with family	-0.163	0.092	-0.067	-1.772	-0.077
passive FT	0.302	0.115	0.086	2.630	0.009
active FT	-0.402	0.105	-0.132	-3.831	0.000
positive emotions in the family	-0.267	0.103	0.101	-2.597	0.010
negative emotions in the family	-0.169	0.086	-0.072	-1.955	0.051
Gender	-0,123	0.070	-0.062	-1.767	0.078
pocket money	0.152	0.065	-0.077	2.339	0.020
Music	0.400	0.067	0.203	5.986	0.000
group of peers	0.271	0.073	0.122	3.690	0.000
Family	-0.294	0.072	-0.133	-4.087	0.000
playing fruit machines	-0.462	0.076	-0.207	-6.069	0.000
$R^2 = 0.27$					

All the studied independent variables explain 27% of the dependent variable (frequency of substance use). To explain the frequency of substance use, the following variables are relevant: the passive spending of free time, the active spending of free time, positive emotions in the family, pocket

money, listening to music with vulgarisms, belonging to a group of peers, non/completeness of the family, playing fruit machines.

Discussion

The objective of the research was to determine which of the selected areas (free time, emotions experienced in the family, values) are relevant in relation to the risk and protective factors of substance use by young people. After implementing the factor analysis, from the variables investigating free time, three variables were created - the active spending of free time, the passive spending of free time and free time activities spent with parents. From the variables investigating the emotions experienced in the family, there were two variables identified - positive and negative emotions.

When examining the impact of substance use, besides the stated variables, dummy variables within the regression model were included, such as: gender, family, listening to music with vulgarisms, belonging to a group of peers, playing fruit machines and the spending of pocket money.

The research has identified the significant effect of free time on substance use - the more time students spend passively, the more they take substances. Among the activities that appear to be risky, are going out with friends (in the classification of the variable belonging to a group of peers, it has shown a significant effect as a separate variable in the linear regression model), spending time on the Internet, listening to music (the inclusion of the variable listening to music with vulgarisms, highlighted the significant impact precisely of this type of music in the regression model), watching television and being bored. The factor analysis suggests that these activities imply an element of passivity, which is typical for them. The influence of the active spending of free time was also demonstrated - the more actively the adolescents spend their free time, the less they use addictive substances. Among the protective activities include: reading books, having a part time job, playing sports, getting ready for school and playing games on the PC. Similar results were also attained by the authors Garcia and Torres (2012), who identified playing sports, going for walks with parents, doing homework and playing games on the PC, as protective factors of alcohol use. The most risky activities, according to the research, include going out with friends. In the case of the consumption of tobacco, most smokers from the respondents are those who do not play any sports and the least are those, who help with the housework. Activities that are protective against smoking marijuana, were activities related to studying (I do my homework, I study), helping with household chores and going out with the family.

An interesting finding is that the factor of spending free time with the family did not show up as protective, with respect to substance use. Activities such as talking to parents, family trips, playing board games and

spending time with siblings, are not relevant in relation to substance use. According to the authors, Nielsen Sobotková et al. (2014), during adolescence, the emancipation of adolescents from the family is an important stage, where it is important for them to "come and go" from the family environment and the establishment of differentiated relationships with peers. We believe that at this stage of development, adolescents do not need to spend a lot of free time with the family and they logically prefer their peer group. What is important is that the family remains a safe place for adolescents, with an overwhelming positive emotional climate (as will be described below).

Another investigated area, were the emotions that adolescents experience in families. Several studies point to the importance of family factors, in terms of their risk or protection. E.g. Čablová and Miovský (2013), based on the authors Dillon et al. (2006), Hogan et al. (2003), point to the riskiness of a lack of emotional ties and poor relationships in the family, a lack of parental control and family conflicts. To the protective factors belong, for example, positive ties to the family, a strong emotional bond between the parents and the children, and parental involvement in the life of the children. In our carried out research, based on factor analysis, two variables were identified - positive and negative emotions. When examining their impact on the consumption of addictive substances, only positive emotions were demonstrated to be significant - the more the respondents are experiencing them, the less addictive substances they are using. They include the sensation of joy, happiness, assurance and trust in the family. The experiencing of negative emotions has not shown to be significant in relation to substance use. A similar conclusion was also reached by the author, Ybrand (2010), who found that risky alcohol use in adolescence is closely associated with substance use within their peer group, when an adolescent engages in unlawful activities, has low ties to the family, conflicted behaviour towards the parents and during a low perceived support from the parents. Within the framework of these established risk factors, the differences between genders were not identified. The differences between genders in the use of addictive substance have not been proven, nor in the research group tested.

It is not surprising the influence the availability or unavailability of pocket money has on substance use, where an increase in pocket money also increased the frequency of their consumption (r = 0.192 **).

Another monitored variable was a complete/incomplete family. The aforementioned variable is significant with respect to substance use and incomplete families may influence the risk on the consumption of addictive substances. A similar conclusion was also reached by the authors, Kážmér et al. (2014), who point out that those respondents who grew up in incomplete

families showed higher risk behaviour in the context of smoking cigarettes, drinking alcohol and marijuana consumption.

Based upon the carried out studies, we can conclude that a meaningful spending of free time can be a protective factor against substance use. Also for this reason, it is important that the school paid attention to education towards the active spending of free time. As stated by the authors, Hájek et al. (2008), for children and youth free time means along-term perspective of education and life, the method as well as the chance for their comprehensive development and self-realisation. Education in the area of the free time of children and young people creates preconditions to enable these individuals to know a meaningful use in childhood, the period of adolescence, as well as adulthood. A second, equally important area acting on substance use, is the family. Its composition and the atmosphere, which reigns within it, are crucial in many areas, and may act protectively in this respect.

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