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LEGAL DRUG USE PATTERNS OF ADOLESCENTS IN NORTHERN HUNGARY

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Abstract

In a quantitative cross-sectional study, the authors investigated the health risk behaviour of secondary school students in northern Hungary, including the consumption of legal psychoactive substances (nicotine, alcohol, caffeine). In addition to assessing substance use habits, the study should also assess mental health characteristics and examine the correlates of substance use. A total of 1251 respondents (n= 1251) took part in the survey (mean age: 16.4 years; SD: 1.6), with 59.1% of the sample being boys. The questionnaire included questions on socio-demographic data, nicotine and alcohol consumption, frequency of consumption, motivation for alcohol consumption and mental health characteristics. The results indicate that the intensity of smoking and alcohol consumption is highest in the 16-17 years old age group, with a higher prevalence of smoking among girls and alcohol consumption among boys. For smoking, lower parental education and poorer mental health are the main risk factors, and for alcohol consumption, lower parental education, a smaller settlement, poorer living conditions and poorer mental health are the main risk factors.

Keywords: *adolescents, nicotine, alcohol, mental health*

1. Introduction

Multiple representative studies aiming the assessment of psychoactive substance use patterns of adolescents have been conducted in Hungary in the recent years. The HBSC (Health Behavior in School-Aged Children; Németh, 2022) international research series was intended to examine the correlations between lifestyle, well-being, and health by involving 11-15 years old people. The most important long-term goal of the ESPAD study (European School Survey on Alcohol and other Drugs; Hilbell et al., 2009) was the measurement of changes happened in the substance use patterns of 15-16 years old young people and comparing trends varying from country to country. The first data collection of the study series was performed in 1995 with the participation of 26 European countries. Thereafter, the survey was conducted every four years, most recently for the seventh time in 2019. In the certain waves, the number of the participating countries changed between 30 and 35, but the variables were the same in the different countries, so, data have become comparable on an international level (ESPAD, 2020). Several national publications have been made by using the Hungarian results (Elekes and Domonkos, 2020). In 2014, the representative research called “School Health Development and Universal Drug

Prevention" (Iskolai Egészségfejlesztés és Univerzális Drogmegelőzés, IEUD) revealed the mental health status of the Hungarian school generation between the age of 6 and 18 years, including substance use (smoking, alcohol- and drug abuse), risk factors and protective (preventive and protective) factors (Grezsa et al., 2015). All international and national studies revealing the health risk behaviour of the young age group raised the attention to that both chemical and behavioural addictions occur at an increasingly younger age.

Based on the experiences of the Drug Consultation Forum of Miskolc (Kábítószerügyi Egyeztető Fórum, KEF), it has become justified to reassess the substance use patterns of adolescents in the Northern Hungarian region. The research presented in this current study was made for the initiative of the Drug Consultation Forum of Miskolc (KEF) with the support of the Municipality and the Vocational Training Centre of Miskolc. When designing the study, we contacted researchers conducting the Hungarian ESPAD research, who provided professional assistance for us.

Adolescence is a transitional period with many developmental and psychological challenges. These include becoming independent from the family, learning new skills and taking on new roles in relation to peers. During this time of searching for identity, the peer support system and social network of relationships change. Although the influence of peers is not necessarily negative, the prevalence of harmful, risky behaviours increases during this time (Pikó, 2010; Dinnyes et al.,2022).

Smoking and alcohol use are the two most common types of substance use during adolescence. To understand the factors that influence their occurrence, the complex interactions between family, peer group factors and personality traits need to be explored (Grezsa et al., 2015). Among peer influences, social norms and expectations, more specific peer influences and behavioral pressures play an important role. Among peer influences, we find social motivations, peer pressure and the need to feel a sense of belonging (Hüse et al., 2016).

For adolescents, the group model and frame of reference primarily influences their lifestyle, self-image, self-esteem and social life. Peer pressure is an important peer influence and a strong predictor of substance abuse. For young people who are less socially confident and have poorer communication skills, smoking and drinking often have social benefits by promoting conformity with peers (Pikó, 2010). In addition to the effects of peers, a number of studies have also investigated the mechanisms of action of intrapersonal factors in relation to risk and protection. Among other things, conscientiousness has been shown to be strongly associated with drug use, with higher scores indicating less interest in drugs (Booth-Kewley and Vickers, 1994), higher neuroticism scores are associated with the fact and extent of smoking (Mroczek et al., 2009), but also that the relationship between seeking sensory experiences and substance use is very strong (Hittner and Swickert, 2006). Adolescents with mental illness or from a stressful environment are vulnerable to both personal and environmental risks, with adolescents with less emotional stability consuming more alcohol in middle age (Hampson et al., 2006; Lopez-Quientero et al., 2011).

According to alcohol motivation theory (Cooper, 1994), alcohol consumption contributes to the satisfaction of certain needs and functions. The model assumes a conscious and automatic decision-making process underlying alcohol consumption, involving past and stable characteristics (genetic or biochemical, personality traits, cultural and environmental influences) as well as current factors (e.g. availability of alcohol, peer influence) and cognitive characteristics. Through the combination of these influences, the person develops expectations of positive or negative consequences of alcohol consumption (valence dimension), and the source of the expected consequences can be internal or external (source dimension) (Horváth, 2022; Farkas et al., 2012; Kuntsche et al., 2005).

On this basis, four categories of drinking motivation can be distinguished. Enhancement motivation means that a person drinks to feel better, i.e. to seek a more pleasant inner experience than usual. Social motivation means that a person drinks to have positive experiences, i.e. they drink to increase the pleasure of social interaction. Both motivations are positive, with the first coming from internal sources and the second from external sources. The coping motivation is an attempt to avoid or circumvent negative internal states, while the conformity motivation refers to a person drinking to avoid unpleasant social situations. Both motivations are negatively oriented, with the first being internal and the second external. National and international research suggests that reinforcement motivation is positively associated with riskier drinking patterns and coping motivation with problems resulting from alcohol consumption. While reinforcement motivation is associated with higher levels of pleasure-seeking, extraversion, impulsivity and lower behavioural control, coping motivation is associated with higher levels of neuroticism, depressive or anxiety symptoms (Farkas et al., 2012; Horváth, 2022; Németh et al., 2012).

1.2. The aim of the empirical research and the applied methodology

One of our research goals was to get to know the health risk behaviour of secondary school students studying in Miskolc, including the level and frequency of using legal psychoactive substances (nicotine, alcohol, and caffeine). The target group of the study in the year of the survey consisted of young people studying in a secondary school of Miskolc and being over the age of 14. Data collection involved young people participating in full-time normal secondary education and it was performed in 2023. It is equal to the protocol of ESPAD according to which data recording is performed by class query and self-filling method. During sample selection, we strived for representativity to show all classes of every school type in the sample. The study was performed online in the framework of a school lesson under the assistance of a measurement inspector.

Data presented in this current study were examined by socio-demographic questions (age, gender, type of residence, parents' education level, subjective judgement of living conditions), while the level and frequency of nicotine and alcohol consumption, the motives of alcohol use and the mental state characteristics were examined by the following questionnaires validated in the Hungarian language area.

The *Fagerström Test for Nicotine Dependence (FTND)* is a simple measuring tool applicable among both adults and adolescents, and it can be used to indicate the preference of cigarette, the level of its use and the intensity of nicotine dependence related to cigarette use (Heatherton et al., 1991; Pénzes, 2022). The questionnaire contains six items relating to nicotine intake and the attempts done for preventing relative nicotine deficiency, thus, they assess nicotine dependence based on the current cigarette smoking patterns. Minimum 0 and maximum 10 points can be achieved on the scale, and the higher score suggests the greater possibility of the intensity of physical nicotine dependence. Heaviness of Smoking Index (HSI) is the abbreviated version of the FTND, which is made up of items 1 and 4 of the FTND (Pénzes, 2022).

Alcohol Use Disorders Identification Test (AUDIT) is a questionnaire widely used for identifying and screening excessive alcohol consumption (Saunders et al., 1993; Gerevich et al., 2006; Horváth et al., 2022). The 10 items of the questionnaire are intended to assess three fields: the first three questions reveal the level of alcohol consumption, four items assess the symptoms of alcohol addiction, and finally, the last three questions refer to the negative consequences of alcohol consumption. Minimum 0 and maximum 40 points can be achieved on the scale, the higher score achieved on the measuring tool suggests higher level of harmful alcohol consumption. The measuring tool is well applicable among both adults and adolescents (Horváth et al., 2022).

Drinking Motives Questionnaire (DMQ-R, Cooper, 1994; Németh et al., 2012; Horváth, 2022) is a 20-item measuring tool created based on the motivation model of alcohol use, and it assesses alcohol use among four motivation dimensions by querying the incidence of the certain alcohol use reasons and causes. The social, enhancement, coping and conformity subscales include 5-5 items, the higher score on the certain subscale refers to the occurrence and stronger presence of the certain motivation dimension determining alcohol use, and maximum 25 points can be achieved on each subscale. The measuring tool is well applicable among both adults and adolescents.

The *abbreviated version of the Depression Anxiety Stress Scale (DASS)* assesses **the symptoms of the emotional conditions** of depression, anxiety, and stress by 21 items, with 7-7 variables based on self-description. The respondent should judge the symptoms on a four-grade scale (0 = not applicable at all and 3 = very often applicable) and based on the week before filling the questionnaire. Minimum 0 and maximum 21 points can be achieved on the certain scales (Lovibond and Lovibond, 1995; Horváth, 2022).

Data analysis of the study was performed by SPSS 25.0 program, and over measuring the frequency distributions, correlations were made by chi-squared test and correlation analysis.

The research was licensed by the Regional/Institutional Scientific and Research Ethics Committee of the Central Hospital and University Teaching Hospital of Borsod-Abaúj-Zemplén County (licence No.: BORS-06/2024).

1.3. Results

1.3.1. Sample characteristics

The questionnaire was filled by 1251 secondary school students. The mean age of the sample was 16.4±1.6 years, 59.1% of the sample were boys, 40.9% were girls. The greatest part of the respondents (38.4%) lived in the capital city, in a county seat or a village (38.3%), and the smallest part lived in farmhouses (1%). Regarding the parents' education level, the highest proportions (30.5%) were fathers with vocational education and training and mothers with a maturity certificate (28.1%). Most of the respondents (42%) judged the living conditions of their families to be average. Further detailed data are given in Table 1.

Table 1. *Socio-demographic data of the sample*

	N=1251	
Mean age	16.4±1.6 years	
Rate of genders	boys: 59.1%	girls: 40.9%
Parents' education level	father	mother
8 primary school classes or less	6.3	8.0
apprenticeship training, vocational school	30.5	20.1
maturity	24.3	28.8
unfinished college or university	4.8	4.6
college or university degree	18.0	28.1
not known	12.5	9.6
I do not know	3.7	0.7
Residence		
capital city, county seat	38.4	
another city	22.4	

village	38.3
farmhouse	1.0
Living conditions	
high among the best	5.8
much better than the average	15.8
somewhat better than the average	29.1
average	42.8
somewhat worse than the average	4.5
much worse than the average	1.2
among the worst	0.7

1.3.2. Prevalence of smoking

53% of the study participant students have already smoked. Most of the students (19.4%) tried smoking at the first time at the age of 15-16 years, but according to their own admission, 12.2% of them were 14 years old at the time of smoking the first cigarette. 3.1% of the students smoked their first cigarettes at the age of 9-10 years, and 5.8% were 12 years old. The young people started regular smoking mostly at the age of 15-16 (14.6%) as well, but 1.4% identified themselves as regular smokers from the age of 9-10 and 1.3% from the age of 12. Counted by chi-squared test, a significant correlation can be detected between the parents' education level and smoking started early (p=0,0001): children of parents with lower education level start smoking at a younger age (Table 2).

Table 2. *Prevalence of regularly smoking young people in terms of the parents' education level (%)*

	Father p=0.0001	Mother p=0.0001
8 primary school classes or less	9.1	13
apprenticeship training, vocational school	37	23.3
maturity	25.5	28.8
unfinished college or university	2.4	4.3
college or university degree	8.2	16.3
I do not know	12	7.2
I do not know	5.8	2.4

If we asked about smoking patterns more specifically, we got a more nuanced picture. Based on their self-report, 16.6% of the respondent young people smokes regularly, daily (Chart 1).

A significant correlation can be experienced in terms of genders (p=0.003). Here, girls clearly have higher levels of daily smoking.

Nearly one third of the students (409 persons) told that they currently smoked. When examining smoking in terms of ages, it could be observed that the 16-17 years old age group smoked the most intensively (p=0.0000) (Chart 2).

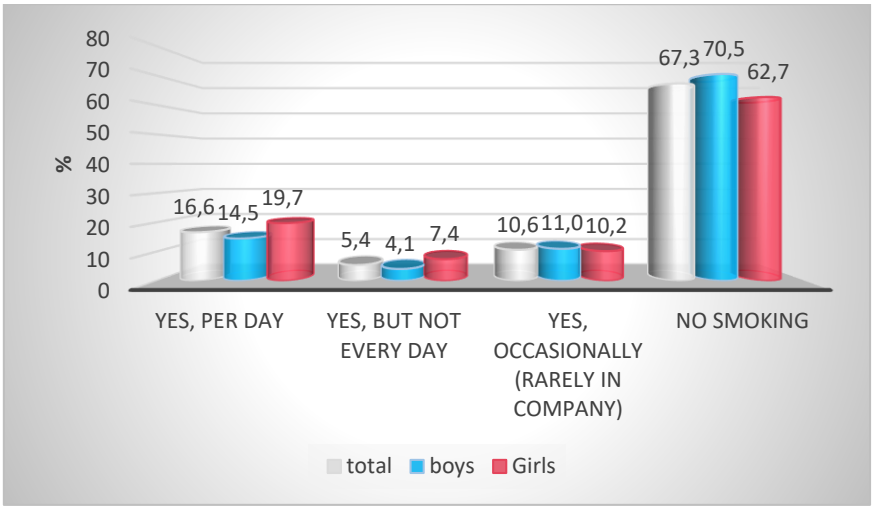

Chart 1. *Students' smoking prevalence in terms of genders (%)*

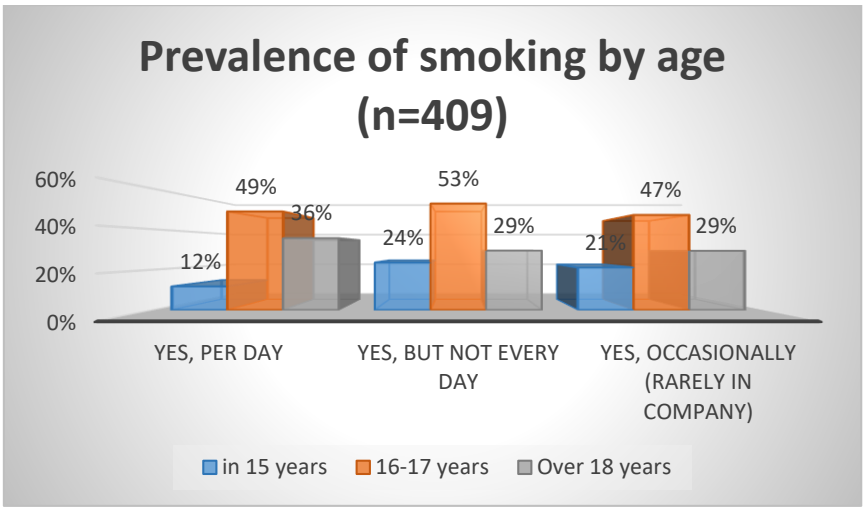

Chart 2. *Students' smoking prevalence in terms of age groups (%)*

The smokers' nicotine dependence was examined by the Fagerström Test for Nicotine Dependence (FTND). The questionnaire measures the level of nicotine dependence, the higher score indicates stronger addiction. The maximum score to be achieved is 10; the FTND index of smoking students in this current sample is 1.96±2.1 that shows very low nicotine dependence, but the value is on the border area. Without the casual smokers, this index is 2.52±2.2, so, the value changes category and it is in the low nicotine dependence category. Smoking Severity Index (DSI) is 1,05±1,51 in case of all smokers, so, low level nicotine dependence can be seen in this case as well[1], and this index also increases without the casual smoking (1.38±1.61).

Most smoking students (65.7%) smoke a half package of cigarettes or less every month (Table 3),

[1] DSI index: 0-1 low nicotine dependence, 2-3 medium nicotine dependence, 4-6 high nicotine dependence

but the rate of those smoking more than a half package or one package of cigarettes is not negligible (28%).

Table 3. *Rate of daily cigarette consumption*

Quantity of smoked cigarettes/month	Percentage/capita (n=409)
10 cigarettes or less	65.7
11-20 cigarettes	28.0
21-30 cigarettes	2.3
31 cigarettes or more	4.0

The rate of regular e-cigarette users is 26.5%. There are no significant correlations in case of genders (p=0.2), but regular use is more preferred among boys (59.5%) than girls (40.5%). A significant correlation can be detected between the use of e-cigarettes and traditional cigarettes (p=0.01), 49.5% of the e-cigarette consumers smoke traditional tobacco products as well.

1.3.3. Prevalence of alcohol consumption

During the survey, we examined the characteristics of the participants' alcohol consumption: we asked about the consumption during their lifetime, in the year before the data collection and the last month as well. We examined the frequency of consumption in the previous month by beverage types, the date of the last consumption and the quantity of drinks consumed then.

86.5% of the secondary school students participating in the sample have already consumed alcohol during their lives. This rate was 76.8% in the 12 months before the survey, and the alcohol consumption rate was 56.7% in the previous one month. Neither of the indicators show significant deviations between the genders (p=0.3) (Table 4).

Table 4. *Alcohol consumption rates by genders*

	Boys	Girls
Alcohol consumed in his/her lifetime so far	86.2%	86.9%
He/she consumed alcohol in the last one year	77.8%	75.4%
He/she consumed alcohol in the last month	55.2%	58.6%

In the month before the survey, 26.1% of the students consumed alcohol at least once or twice, and 8.2% of the students indicated consumption six times or more monthly (Table 5).

Table 5. *Alcohol consumption in the last 30 days by the number of occasions*

Consumed alcohol in the last 30 days	Percentage
No alcohol consumed	43.4
1-2 occasions	26.1
3-5 occasions	14.6
6-9 occasions	8.2
10-19 occasions	5.2
20-39 occasions	1.4
40 or more occasions	1.2

When examining the age groups, it could be seen that 43% of the 16-17 years old people, 39% of the 14–15-year-old students, and 17.1% of those over the age of 18 reported that they do not consume

alcohol at all. Examining by chi-squared test, significant correlation (p=0.001) could be seen between age and alcohol consumption in all the three categories, and the alcohol consumption of the age group of 16-17 years was the most intense (Table 6). At the same time, the occasional alcohol consumption of 14-15 years old young people is not negligible. The father's education level, residence and the material conditions show significant correlations (p=0.000) with the students' alcohol consumption. The alcohol consumption of students with less educated fathers, living in a smaller settlement (town or village) or in worse material conditions is more intense.

Table 6. *Alcohol consumed in the last 30 days by occasions and age*

Consumed alcohol in the last 30 days	14-15 years %	16-17 years %	Over 18 years %
No alcohol consumed	39.0%	43.8%	17.1%
1-2 occasions	26.2%	51.4%	22.5%
3-5 occasions	19.2%	53.3%	27.5%
6-9 occasions	16.3%	51.0%	32.7%
10-19 occasions	6.2%	64.6%	29.2%
20-39 occasions	11.8%	35.3%	52.9%
40 or more occasions	16.7%	50.0%	33.3%
TOTAL	28.7%	48.8%	22.5%

Examining alcohol consumption in terms of genders, significant deviations can be observed: 30.8% of the boys were 14-15 years old, 46.4% were 16-17 years old, and 22.8% were over the age of 18. 25.6% of the girls were 14-15 years old, 52.3% were 16-17 years old, and 22.1% were over the age of 18. Examining by chi-squared test, significant difference can be seen in case of genders (p=0.01): a higher proportion of boys consume alcohol-containing drinks (Table 7). The alcohol consumption of 14-15 years old boys, 16-17 years old boys and girls over the age of 18 deserves attention.

Table 7. *Alcohol consumed in the last 30 days by occasions and age*

Consumed alcohol in the last 30 days	14-15 years %		16-17 years %		Over the age of 18 %	
	boys	girls	boys	girls	boys	girls
No alcohol consumed	41.4	*3.3*	40.2	*32.1*	18.4	*64.2*
1-2 occasions	30.2	*0.0*	48.9	*21.0*	20.9	*79.0*
3-5 occasions	20.4	*0.0*	50.0	*17.6*	29.6	*82.4*
6-9 occasions	14.0	*2.4*	57.9	*17.1*	28.1	*80.5*
10-19 occasions	3.2	*2.9*	67.7	*5.9*	29.0	*91.2*
20-39 occasions	7.1	*33.3*	35.7	*0.0*	57.1	*66.7*
40 or more occasions	12.5	*0.0*	50.0	*25.0*	37.5	*75.0*

Alcohol consumption frequency was also asked by beverage types. There is a significant difference between genders (p=0.002) in the preference of beverage types, except for concentrated beverages (p=0.7) (Chart 3).

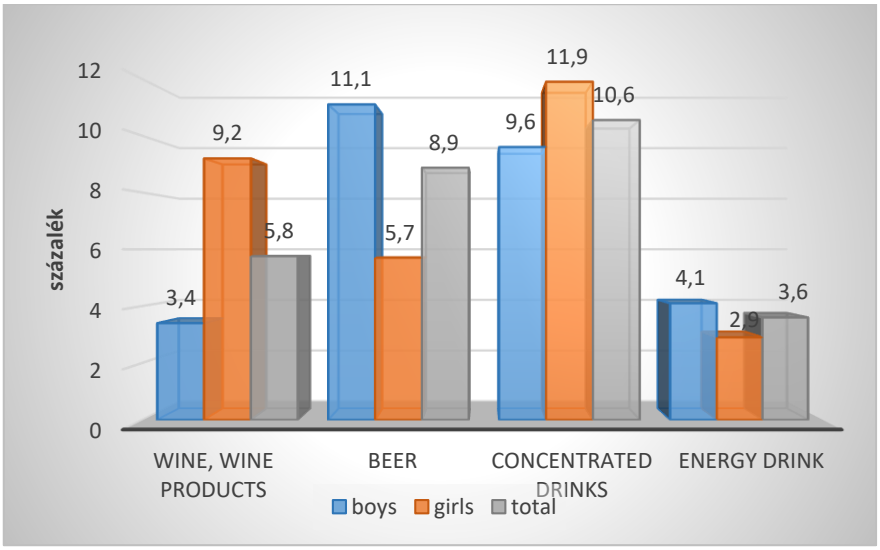

Chart 3. *Prevalence of alcohol- and energy drink consumption by beverage types and genders (%)*

It can be observed that a significantly greater proportion of girls consume wine, wine products, and distilled spirits, while boys prefer beer. The intensity of weekend alcohol consumption shows significant correlation (p=0.012) with the family's material condition: young people living in better financial condition consume alcohol in the weekends in a greater proportion. A significant correlation can also be detected between residence and weekend alcohol consumption (p=0.001): greater consumption can be experienced in people living in villages and towns.

29.7% of the students reported about getting drunk in their lives so far, this was most likely to be occasional, but 10% had this condition monthly and 5% weekly. No significant differences could be seen in terms of genders (p=0.2).

Based on the results of the Alcohol Use Disorders Identification Test (AUDIT), students belong to the low risk or abstinent consumer category, however, 22.8% of the students are in the endangered and 2.5% are in the harmful category, and addiction can be suggested in additional 2.4%. A significant correlation was detected between age and the AUDIT values (p=0.0001), the values of the older students over the age of 18 were the highest, and the values decreased gradually by the age.

Energy drink consumption is more intense on weekdays, because daily (13.7%) or multiple weekly consumption is typical here (14.5%). A significant difference can also be seen in terms of genders (p=0.002): overall, boys consume more energy drinks than girls.

According to the majority of young people, the different beverage types can be bought easily (more than 40% says it is very easy).

The alcohol motives test examines the individual's behaviour, attitude and motivation related to alcohol consumption. The four subscales of the 20-item test contain 5-5 items one by one (social, enhancement, coping and conformity motive). The maximum value of a subscale is 25 points. During the evaluation of the alcohol motives test, social motive (10.8) was the strongest, then enhancement motive (8.4) and coping motive (7.6) came. We got the following values by genders (Table 8).

Table 8. *Alcohol motives by genders (mean score)*

Gender	Alcohol motive total mean score	Alcohol motive social Mean score	Alcohol motive enhancement Mean score	Alcohol motive coping Mean score	Alcohol motive conformity Mean score
Boys	32.6245	10.6789	8.2776	7.1646	6.5034
Girls	34.3535	10.9863	8.6816	8.2910	6.3945

Also seen by ages, social motive is the strongest mostly in the age group over 16, then it is followed by enhancement motive (Table 9).

Table 9. *Alcohol motives by age (mean score)*

Age	Alcohol motive total mean score	Alcohol motive social mean score	Alcohol motive enhancement mean score	Alcohol motive coping mean score	Alcohol motive conformity mean score
14-15 years	33.1165	9.3900	8.5119	7.0876	8.1269
16-17 years	34.4593	11.2272	8.7805	7.8875	6.5640
Over the age of 18	35.0476	11.5945	8.8019	7.9723	6.6788

There is a significant correlation (p=0.004) between residence and social motive alcohol consumption: the smaller the size of the residence settlement, the higher the motivation of the young person. There is also a significant correlation in case of conformity alcohol consumption and residence (p=0.026), here, the values are higher in people living in cities. Financial conditions also show significant correlation in case of social (p=0.006), enhancement (p=0.013) and coping (p=0.001) alcohol consumption. Overall, the motivation of young people living in conditions worse than the average is stronger. Fast drunkenness occurs mostly in case of social and enhancement motives.

1.3.4. Students' mental state features

The students' mental state was measured by DASS-21 scale, which measured the level of depression, anxiety, and stress. Most of the students have good mental state (Table 10).

Table 10. *Students' mental state features based on the values of DASS-21 scale*

Zones	Depression (%)	Anxiety (%)	Stress (%)
Normal	75.5	79.8	90.7
Mild	10.3	5.2	5.9
Moderate	12.1	10.2	3.3
Severe	2	3.3	-
Very severe	-	1.5	-

The majority of students have good average mental state, but it is not negligible that 24.4% of them show a level of depression, 20.2% has some degree of anxiety, and 9.2% fights with stress symptoms. In case of genders, a weak but significant (p=0.001) correlation can be seen in case of anxiety (r=0.24) and stress (r=0.27), and the mental state of girls is worse than boys. The family's living conditions show significant correlation with the students' mental state (p<0.000), so, those living in financial conditions worse than the average have worse mental state. The mother's education level shows significant

correlation with the students' mental state (p=0.02): mostly with the anxiety (p=0.015) and stress (p=0.022) subscales. The children of mothers with lower education level show more anxiety and stronger stress symptoms.

There is a weak (r=0.257) significant (p=0.000) correlation between mental state and nicotine dependence, so, students with higher FTND index are in worse mental state. All subscales of bad mental state show significant correlation (p=0.000) with problematic alcohol use (AUDIT), so, the alcohol consumption of students in worse mental state is higher.

Examining the motivation for alcohol consumption, a moderately strong significant (p=0.0001) correlation can be detected in case of coping motive in terms of all subscales of mental state (r=0.34) (depression: r=0.3); anxiety: r=0.33; stress: r=0.31).

2. Discussion and conclusions

In the cross-sectional survey, which was conducted online, we aimed to assess the health risk behaviours, including the extent and frequency of use of legal psychoactive substances, of secondary school students aged 14 and older studying in Miskolc. The survey covered young people enrolled in a regular full-time upper secondary school, with data collected in 2023. The sample consisted of 1251 students, with an even gender distribution. In addition to questions on socio-demographic data, the questionnaire also included questions on nicotine and alcohol consumption, frequency, motivation for alcohol consumption and mental health characteristics, the latter measured using standardized, validated questionnaires.

In terms of smoking habits, we found that just over half of the students in the sample had smoked. Almost a tenth of those who had tried smoking had done so for the first time between the ages of 9 and 12, just over a tenth by the age of 14 and a fifth by the ages of 15 and 16. According to their own statements, 16.6% of the young people surveyed smoke regularly and daily, with the 16 to 17 age group being the most intensive smokers. Among regular smokers, nicotine dependence is moderate. A quarter of the sample are regular users of e-cigarettes, with almost half of them also consuming traditional tobacco products. Girls smoke more than boys on a daily basis. The higher smoking rates among girls are consistent with data from a previous study on oral hygiene in the region (Faragó et al., 2023). In addition, there was a significant correlation between adolescent smoking in the sample and parental education: children of less educated parents start smoking at a younger age.

The data on the prevalence of alcohol consumption shows that the vast majority of adolescents in the sample had consumed alcohol in their lives during secondary school. Three quarters of the sample had consumed alcohol in the 12 months prior to the survey and more than half in the last 1 month. In the month prior to the survey, more than a fifth of students had drunk alcohol at least once or twice a month, and almost a tenth had drunk alcohol six or more times a month. In both cases, there is no significant difference between the sexes. In the sample, more than a third of 14-15-year-olds, less than half of 16-17-year-olds and almost a fifth of over-18s stated that they did not drink alcohol at all. Alcohol consumption is most intensive among 16-17-year-olds, but occasional alcohol consumption among 14-15-year-olds is not negligible. The majority of young people say it is easy to get different types of drink, and more than two-thirds say it is very easy.

There is a significant difference in alcohol consumption by gender, with boys consuming a higher proportion of alcoholic drinks. In terms of age groups, alcohol consumption is most intense in the 16-17 age group and most moderate in the 18+ age group for both genders.

When examining the intensity of weekend drinking, we found that young people living in better financial circumstances and those living in smaller settlements (villages and small towns) are more likely

to drink alcohol at the weekend. Excessive alcohol consumption in real life was reported by almost a third of students, mostly occasionally, but also monthly by a tenth and weekly by 5%. No significant gender-specific differences were found in this regard. While girls prefer wine and wine products as well as spirits, boys prefer beer.

In terms of alcohol consumption, almost a quarter of students in the sample are at risk, a further 2.5% fall into the harmful category and 2.4% are probably addicted. There was a significant correlation between age and AUDIT scores, with older students over the age of 18 having the highest scores, but the scores gradually decreased with increasing age.

Among the demographic variables, father's education, place of residence and financial circumstances were significantly associated with students' alcohol consumption. Students with a lower level of education, living in a smaller settlement (small town, village) and in poorer financial circumstances had higher alcohol consumption.

The social motivation, i.e. the search for a positive experience in a social context, proved to be the strongest when analyzing the motivation for alcohol consumption. This was followed by the enhancement motivation, i.e. the aim of alcohol consumption is to achieve a better sense of well-being and to have a pleasant experience. In terms of age, social motivation was strongest in the 16+ age group, followed by enhancement motivation. There was a significant correlation between place of residence and motivation: while socially motivated drinking was stronger in people living in smaller cities, conformist drinking was stronger in people living in larger cities. Social motivation, escalation motivation and coping motivation were also stronger among young people living in poorer than average circumstances. Finally, getting drunk quickly was also most strongly associated with social and reinforcing motivation.

Almost a third of the sample consumed energy drinks daily or several times a week. Boys consumed significantly more energy drinks than girls.

In terms of mental health, a quarter of the students in the sample suffered from some degree of depression, a fifth from anxiety and almost a tenth from stress symptoms. The mental health of girls is worse than that of boys. The mental health of those living in below-average financial circumstances is worse. Children of mothers with lower levels of education have higher levels of anxiety and stress symptoms.

Finally, there is a link between mental health and nicotine dependence and alcohol consumption: students with poorer mental health have a higher FTND index and higher alcohol consumption. The coping motivation for alcohol consumption is significantly related to all subscales of mental health (depression, anxiety, stress).

In summary, it can be said that the prevalence of smoking in the sample studied is higher in the 16to 17 age group and among girls. Lower parental education and poorer mental health are risk factors for smoking. Alcohol consumption is also most intensive in the 16-to 17-year-old age group, but substance use is higher among boys. A lower level of education of the father, a smaller community, poorer living conditions and poorer mental health are the main risk factors for alcohol consumption.

The findings raise awareness among health promotion professionals, including mental health promotion, and policy makers of the need for prevention and intervention programs targeting vulnerable groups. In addition to care at the individual level – highlighting the role of health visitors and doctors and the importance of their cooperation (Soósné Kiss et al., 2023), there is an urgent need for community-based health promotion activities and programs in various school and community settings that have a direct and indirect positive impact on adolescents' health behaviours. Based on model programmes already tried and tested with school children (Kapitány-Fövény et al., 2022; Lukács et al.,

2023; Soósné Kiss et al., 2024), it would be useful to implement peer education programmes in our subjects. Finally, long-term monitoring of legal substance use and mental health status of the adolescent population in the region seems warranted.

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