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The effect of campus environment on students' health behaviour in four Central European countries

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Abstract

The results of the European School Survey Project on Alcohol and Other Drugs (Espad Group, 2016) indicate that substance use among Hungarian students enrolled in the public education ranks on the top in Europe as the incidence of smoking and binge drinking is increasing. At the same time, international research states that the youth in the Central-European countries surrounding Hungary (Slovakia, Romania, Serbia, Ukraine) show better results in more aspects (Hibell et al, 2012). The results of Kopp (2012) justify these findings among Hungarian adults as well. However, we do not have explicit comparable data among university students. In the present study, we try to cover up the blank spaces of the previous studies. Firstly, we focus on the -students enrolled in higher education. Secondly, we measure the special character of minority students, as in the neighbour countries of Hungary there are Hungarian minority students, as well. In our investigation, we point out that students learning in the same higher educational campuses create a health behaviour interpretive community and their effects often overwrite the individual protective and risk factors.

Keywords: Health-Risk Behaviour; Higher Education; Added Value.

Introduction[2]

Examining the effect of higher education (HE) institution plays a central role in addressing the proposed topic[3]. The influence of the environment where students study is relevant and it can affect every aspect of life: academic achievement, friendships, health awareness and behaviour etc. Thus, the effect of the HE institution is obvious at all dimensions e. g. on social life or academic and non-academic achievement etc. While dealing with the phenomena of post-adolescence, investigating the role of higher education provides consistent insight. Tertiary education is of importance not only because of the curricular and extracurricular activities but also because of the extended network or of community's values which have positive effects. However, they face multiple stressors, including an academic overloading continuous pressure

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to achieve and competition with peers, which can be detected as the effect of the institute (Tavolacci et al, 2013). Being a university or college student means living in a milieu with complex effects on physical and mental health (Storrie, Ahern &Tuckett, 2010).

Campus impact researches have shown that the effect of the higher education institution depends on the level of student integration (Tinto, 1993; Astin, 1993, 1999; Pusztai, 2015). The integration of the students has educational and social dimensions which include intergenerational and intragenerational relationships in connection with the higher educational institute (Tinto, 1993). Previous researches claim that student-faculty relationship is supportive, especially in regard to attrition and academic achievement (Pascarella & Terenzini, 2005; Pusztai, 2015). Peers' and faculty' values, approaches and behaviours strongly influence higher education students' intellectual curiosity, social ability, maturity and values. Formal and informal outcomes maybe mentioned as well: formal aspects are academic achievement, e.g. grades, competences etc., informal affects are e.g. values, non-academic achievement, and health behaviour. According to the most extended conception, the higher educational system has four dimensions: the physical environment, the composition of campus society, the static and dynamic states of the institution's structure and the culture of the institute (Strange, 2003). In the social environment of the institutional units, institutional culture has its own evolutionary characteristics which contain a peculiar conception about studying and leisure activities, special behavioural patterns and value preferences.

In our paper, we argue that campus culture includes a specific conception, attitudes and behavioural patterns in regard to health behaviour. The data were collected in four countries (Hungary, Ukraine, Romania and Serbia) among students from multi-ethnic and cross-border higher educational institutes. The area of the study was the HE institutes of Central-Europe in which the rate of non-traditional students (low socio-economic status, rural, indigenous minority) is high, as these institutions educate students from mostly peripheral areas where different ethnics live. The change in the economic structure following the political transformation in 1989 created a more disadvantageous situation. The inherited development caused a low rate of employment. Consequently, the unemployment rate among the parents of the students is high, even if socio-economic context is changing. Coping with the critically huge problems leads to serious consequences e. g. chronic diseases in the early lifetime, early mortality rate, which is not ineffective on students. The sample was based on HE institutions providing education on minority, mother tongue partly or on the whole. However, the investigation was extended to the institutions educating on the national language as well. Firstly, we discuss the role and appearance of health behaviour during the tertiary education, and further on, based on the theories and previous results, we examine the effect of the HE institution on the different characteristics of the students through our survey made in 2015.

Health behaviour as the result of higher education years

The effectiveness of the students' development during the higher educational years is illustrated by several factors. According to Astin's approach of effectiveness (Astin, 1993), effectiveness can be investigated in three dimensions: based on the view of the nature of the development, its way of appearance and as a temporal characteristic. Investigating the nature of the development, cognitive (knowledge, decision making, application, argument) and affective (attitudes, values, self-image, aspiration, disposition) aspects may be detected. Both may be observed in internal (psychological) and external (sociological) manifestations. Nowadays, it is clear that health behaviour may be taken into regard as a part of effectiveness.

According to the American College Health Association National College Health Assessment (ACHA-NCHA), health-damaging behaviours are common. Still, there is a support group held at the local college which represents a protective and holding environment as an influential factor (ACHA-NCHA, 2016).

The higher educational institute is important in regard to the educational level of the youth and its impact on health. Previous studies stated that there is a strong and positive relationship between educational attainment and the health outcomes namely: mortality rates, self-evaluation

of own health status or other psychological factors. Thus, educational attainment has a direct and indirect influence (through the economic and family circumstances, risk factors of the work, access to medical care and health knowledge, personality traits) (Vnuk, Wearn & Rees, 2017). Moreover, the institute and its students create an interpretive community (Pusztai, 2015) and it is significant in regard to academic achievement and health protection (Moore et al., 2016).

It is well-known that three major mechanisms influence health. Work and economic conditions, such as: employment status, income and economic security, access to health insurance and workload have serious consequences on health status on health status. Social-psychological resources namely sense of control over own life and social support network have a huge impact as well. The third huge influential factor is healthy lifestyle including: smoking, exercising, drinking and health check-ups (Pascarella & Terenzini, 2005).

Previously, we measured the influence of inter- and intrapersonal, institutional, social and cultural factors on pursuing sport (Kovács, Kovács & Nagy, 2016). In the investigation, advantages and disadvantages of sport were categorised on the basis of social status and institutional integration of the individual. According to the results, pursuing sport with university friends or friends outside the university has a decreasing effect on the sport activities which were expected to occur more often. A possible explanation for this is that if a student gets into a community in- or outside the university, it integrates the norms and values of the community. Thus, if the community's norm prefers fewer sport activities, the student will pursue sport less likely.

In the present study, we focused on a very important field of health behaviour, namely on health-risk behaviour, and we examined the way risk factors are connected to the culture of the higher educational institute. Because of the quick expansion, student communities were formed in several higher educational institutes in Eastern-Central-Europe where the parents' generation has low status, and the students' behavioural patterns at the beginning of the studies is more likely to show similarities to health behavioural patterns in relation to the lower status. Peculiar contextual interpretations are born from the students' views and values in the tertiary education institutes; thus, the investigation of the students' health behaviour is significant.

The rise of the health-risk behaviour

One part of the research investigates whether youths' health behaviour builds a behavioural typology on the basis of behavioural patterns, daily practices and attitudes, and if they reveal the psychological and sociological explanations of belonging to them.

Health behaviour contains not only health protective and preventive but it also consists of dangerous elements. Risk-behaviour includes alcohol consumption and binge drinking, smoking, illegal substance use, physical fight, unhealthy diet, risky sexual behaviour and lack of physical activity. Furthermore, the different kind of health-damaging behaviours are not isolated but they affect the whole lifestyle. This is a main argument why it is necessary to highlight the difficult interaction between social and individual factors in regard to health behaviour (Hayden, 2014; Lester, Cross & Shaw, 2012). In the present study, we focus on the health-damaging habits namely smoking, alcohol and drug consumption. These types of behaviours are risky as it can be stated that those who try out and consume illicit substances in early life period tend to use it later or can have substance use disorder (SUD). Otherwise, the same can be said in case of smoking, as who is a smoker as an adolescent will more likely be a smoker or even a drug consumer in adulthood (Székely, Susánszky & Ádám, 2013). These behaviours are also in connection with other risky behaviours as these people are more engaged in aggressive behaviour, promiscuity, driving after alcohol consumption, rule-breaking and have problems with self-control and impulsivity. Furthermore, a significant factor is the perceived and experienced stress. This has huge effect not only on such psychological factors like: perceived health status, emotional well-being, self-esteem and even depression but it also influences different kind of health-damaging behaviours. Likewise, the prevalence of smoking, alcohol consumption and substance use is significantly higher among people with high stress level according to the results of the Hungarostudy 2013, which is also relevant in regard to job environment (Székely, Susánszky & Ádám, 2013).

The highest prevalence of health-damaging behaviours is reached in adolescence. However, it is still high during the university years. Previous cross-sectional and longitudinal studies claimed that the prevalence of substance use and alcohol consumption increases during adolescence, peaks in late adolescence and early adulthood, namely during the years of higher education. (Valera-Mato et al., 2012). The health habits of university students have a special concern, they live in a life period during which important lifestyle modifications take place and if these changes become fixed routines, they have a huge effect on future health behaviour (Varela-Mato et al., 2012; Chui & Chan, 2017).

Several investigations have drawn the attention to the risk behaviour of higher education students. The smoking rate is huge among American university students as more than one-third of the students is a regular smoker during the higher educational years (Terry, Garey & Carey, 2014). According to the ESPAD studies, more than half of the students at the age of entering tertiary education (54%) have tried out smoking at least once, more than one-fourth of them (28%) smokes monthly and 17% of them is a daily smoker. In Europe, smoking is the most frequent in Latvia, The Czech Republic, Croatia and Slovakia, while Hungary is ranked in the eighth place (next to France). The prevalence of smoking shows an increasing tendency among higher education students in most of the European countries and has risen in Hungary as well (ESPAD Group, 2016). According to the Hungarian Youth 2012 report, 19% of students between 15 and 19 years, 29% of the students between 20 and 29 years and 32% of students between 25 and 29 years categorised themselves as daily smokers; so, a huge increase can be seen in the examined age.

Regarding alcohol consumption, two-fifths of the higher education students consumed alcohol in the past 30 days according to the American results (Eaton et al., 2012). Seemingly, the European students are at a greater risk as 44% of college students take part in binge drinking in every second week. While 87% of European students over 16 years have ever consumed alcohol, this ratio is 94% in Hungary and 61% of the students consumed alcohol in the past month. In Europe, beer consumption is the most frequent while concentrated beverages are the most frequent in Hungary which raises the risk even more. Although a decreasing tendency can be observed among the European students, this tendency cannot be seen in Hungary. Hungarian students stand in the third place regarding intoxication, as 20% of them was intoxicated in the last month while the European average is 13% (ESPAD Group, 2016).

In case of illegal substance use, a significant prevalence can be interpreted among higher education students, according to the American results. On the basis of previous epidemiological results, 26% of men and 19.2% of women among full-time students can be regarded as regular user (Skidmore, Kaufman & Crowell, 2016). 18% of the European students have ever tried out some kind of illegal drug which rate is 20% in Hungary. While a small decreasing tendency could be detected in these cases, this could not be seen in Hungary; moreover, it increased among the Hungarian youth. The most widespread drugs are: marijuana, tranquillizers with or without alcohol, cannabis, ecstasy and cocaine. In addition, the rate of students taking medicine with alcohol is two times bigger in comparison with the European youth (Espad Group, 2016). The problem is that some of these people try out only once or twice these drugs but for most of them this is not enough and continue this behaviour in adulthood as well (Székely, Susánszky & Ádám, 2013). Altogether, it can be stated that the rate of smoking, tranquillizer intake, medicine intake with alcohol and wine drinking is higher among the Hungarian youth than in other countries. This correlates with the changes in the health attitudes as the danger awareness in relation to alcohol and illicit substance consumption has decreased and the rate of people disapproving this kind of risky behaviours has become lower as well.

According to researches, many factors have impact on health awareness. One part of these is interpersonal like balanced emotional life and appropriate physical activity or regular self-checks. Other factors arrive from the environment, like: information, family norms and values. Not only individual psychological and demographical factors (Pikó, Varga & Wills, 2015) but also the social status influences the prevalence of the development of health-risk behaviour (Leonardi-Bee, Jere & Britton, 2011). On the basis of previous investigations, it can be stated that gender (Courtenay, 1998), religiosity (Hayden, 2014) and the impact of values and attitudes (Hayden, 2014) are remarkable as well. A huge part of the literature examines the individual

factors but it does not draw the attention on the contextual effect of the peer community, which can also have a huge influence on the individual's health and risk behaviour. Other investigations take into account firstly the role of health education among the impulses of the education system or would like to grab its effects; meanwhile, the tertiary educational students' influence on each other can be critical as well. In the specific cultural context of higher educational campuses, peculiar attitudes and convictions can become dominant regarding health and health-risk factors which can overwrite the influence of individual factors.

Methods

The population was collected among full-time, state-funded and fee-paying student from Hungarian, Romanian, Ukrainian and Serbian institutes. They are not only Hungarian origin students, but dominantly Hungarian minority students outside of Hungary. Firstly, we tried to ask students at the beginning and at the end of the education at all educational level. The determination of the sampling frame was based on the data retrieval. A sample proportionate to the student population was created. Thus, the Hungarian subsample is bigger compared to the cross-border subsample. The sample is representative for the smaller institutions and for the faculties (in case of bigger institutions). The extent of the planned sample was 2000 members. During the retrieval, 1792 students were able to attain. The researched institutions were University of Debrecen (n=1062), Debrecen Reformed Theological University (n=23), College of Nyíregyháza (n=136) (Hungary, n=1223), State University of Munkács (n=54), Ferenc Rákóczi II. Transcarpathian Hungarian Institute (n=75), University of Uzhhorod (n=75) (Ukraine, n=212), Sapientia Hungarian University of Transylvania (n=124), University of Oradea (n=15), Babeş-Bolyai University (n=138), Partium Christian University (n=4) (Romania, n=284), University of Novi Sad (Serbia, n=63).

The number of participants was created proportionately to the students' number of the institutes and faculties during the planning of the sample thus on the 2nd class of BA and 2nd class of executive education 20%, on the 1st class of MA and the 4th class of executive education 50% of the sample was planned. Strata constructing of the teacher students and other departments was done. The random selection of these groups guaranteed the effectiveness of the randomisation. The data was collected in 2015 in the framework of research IESA.[4]

Measurements

Health awareness

To measure the health awareness of the students, the indicators for prevalence of the different kind of health-damaging behaviours (smoking, binge drinking and substance use - *How frequently did it happen in the previous year?)*[5] were transformed to a scale from 0 to 100 where 0 meant that the students never did these behaviours and 100 meant that the student did them daily. After this step, student groups were categorised with cluster analysis and the socio-demographical characteristics of the students from the different kind of groups were regarded. The most important background variables were: gender, nationality (majority or minority), type of settlement (city, town, village /municipality), education level of the parents (low, medium, high).

Institutional effects

The institutional integration of the students was measured with three dimensions. To measure the intra-generational student embeddedness, the participants were asked who they regularly do different kind of activities with (alone, with friends from the university, or with friends out of the university or both). Not to do or to do it alone meant the smallest degree of institutional

[4] Institutional effects on Students' Academic Achievement (IESA) coordinated by CHERD-Hungary (Center for Higher Education Research and Development) at the University of Debrecen.

[5] Options: almost every day (100 points); once-twice a week (on weekends); a few times in a week; once-twice a month; less often; never (0 point).

integration while doing it with university friends or both with friends from and out of the university meant the highest degree of institutional integration. The answer options were recoded to a scale from 0 to 100 where 0 meant the lowest level and 100 represented the highest level of student integration. The biggest rate of the students has conversation with university friends or those out of the university (65.3%), chat on the university (74.7%), go out (51.2%) and go on trips (43.6%). Most of the students preferred to realize the following activities with their university peers and friends: having conversations (21.3%), go to parties (18.9) and go to sport events (14.6%). They go to religious events alone in a high ratio (17%).

The number of faculty lectures with whom students can talk about different topics and to whom students can turn for help or advice if it is necessary was regarded as the index of the inter-generational student embeddedness. Most of the students reported that they can talk about curriculum (53.3%), about topics out of the curriculum (47%) and about their future plans (44.7) with faculty members. The smallest ratio of them reported that they have faculty lectures in their environment with who they can talk about privacy problems (17.4%), literature and arts (28%) or who takes care about their own career (28.4). Aggregating the different questions, we made an index and the scale from 0 to 100 was created.

To measure the campus integration, a third dimension was used, namely the belonging to volunteer communities: we asked whether the student is a member of some kind of group, club or organisation inside and outside the institution. 0 meant that the respondent is not a member and does not want to be a member; 25 meant that the respondent is not a member but wants to become a member; 50 meant that the person is a member of a group out of the institute; 75 meant that he/she is a member of a group both inside and outside of the institute and 100 meant that he/she is only a group member of the institute, as this option was regarded as the strongest index of the institutional integration. The values were aggregated with respect to all group membership which gave us a 0-100 scale. Most of the students are members of a denominational organisation (25.3%), a volunteer group (13.3%), a cultural or artistic group (11.1%) or a sport club (10.5%). In the biggest ratio, they are not members and do not want to become a member of a political organisation (83.3%), a fan club (71.1%) or the local student government (65.4%). In the biggest ratio, they would like to become a member of a charitable, charity organisation (53.7%), a research group (49.6%) or a volunteer or cultural organisation (40%).

To measure the campus impact, a contextual health behaviour variable was created as we hypothesised that the role of social context of the higher educational institution is significant in regard to the pattern of health behaviour. Data of the students from the same campus were aggregated and a variable called health behavioural environment characterised for the context was developed on the basis of the means of the students' results according to the health-damaging behaviours.

Data analysis

The analyses were made with SPSS 17; cluster analysis, chi-square probe, Spearman correlation, ANOVA and logistic regression were performed.

As we wanted to know how certain factors increase the chance of avoiding risk, the variables were dichotomised and an attribute considered more effective in bivariate analysis was involved in the analysis. Regarding gender, the reference value was being a man coded with 0 (1 meant being a woman). Regarding the educational level of the parents, 1 meant having at least one parent with graduation. Concerning those who live in a village, reference group was the group of people who live in a smaller or bigger city (1 meant those who live in a village) while regarding those who live in a big city, reference group was the group of people who live in a town or in a village (1 meant those who live in a city). Furthermore, for minority status, reference group was belonging to the majority nationality (1 meant minority). In case of health behavioural context, students doing health-damaging behaviours less frequent were correlated to faculties where the prevalence of health-risk behaviour was lower (1 meant risk-avoiding above the mean). Regarding the two variables in relation to the students' institutional network, 0 meant the students having less intergenerational and intragenerational contacts below the mean (1 meant students having intergenerational and intragenerational contacts stronger than the mean). Participants having networks oriented out of the

institute were regarded those students who had intragenerational relations oriented out of the campus above the mean (marked with 1), which was correlated to those who had this kind of relationships below the mean. We measured belonging to volunteer communities with separating those students who are members of at least one volunteer community from those who are not members of these kinds of communities (1 meant membership of volunteer communities above the mean).

Results

The health-risk behaviour of the students was measured with the frequency of three habits: becoming drunk, smoking, using substance in the last year. One-third of the students said that they were never drunk in the previous year (30.4%), every four of them said that they were sometimes drunk (23.6%). Every tenth student said that he/she consumed a huge amount of alcohol, regularly in weekend parties (10.3%). 14.9% of the students smoke daily and 57.9% of them have never smoked. The rate of occasional smokers is 10% (rarer than every month) and the rate of social smokers is 3.6% (mainly at weekend, parties and in companies). 93% of the students said that they did not use drugs s in the previous year, 3.5% of them said they used drugs less than once per month. 17 students use it weekly (1%) and four students use it daily (0.2%).

On the basis of the three health-damaging behaviours, four student groups were differentiated. In the first group belong the social drinkers who got in the other two dimensions very low points but for drinking got 52.65 points, which regularly means monthly getting drunk (n=428). The second is the group of chain-smokers where binge drinking is less often but the smoking is the most frequent and drug consumption is two times bigger; however, it is still rare in this group (n=416). In the third group called health-conscious students, the members practically never smoke and use substance and here are included the abstinent. It is gratifying that the vast majority of the answers got into this category (n=776). The smallest group consists of the deviant students (only 53 members) for whom frequent smoking, alcohol and drug consumption are most likely to occur (Table 1). The low number can be caused because substance use and frequent binge drinking are not societally accepted activities. Thus, the number of the real answerers is lower even in case of anonym questionnaires at these questions.

Table 1: *Student groups according to the health-damaging behaviours (N=1673)*

How frequently did it happen in the previous year?	Social drinkers (n=428)	Chain-smokers (n=416)	Health-conscious group (n=776)	Deviants (n=53)
Inebriation	52.65	47.76	7.85	70.70
Smoking	8.78	86.75	2.96	81.40
Substance use	1.11	2.16	0.30	62.79

Notification: cluster centrals from 0 to 100
Source: IESA, 2015

The researches of pupils and students' risky behaviour have already identified several demographical and psychological characteristics, societal factors and factors in connection to educational institution which decreases or increases the exposure of the youths to the health-damaging habits. We examine the demographical and psychological factors below, then the societal background and at last, the attributes of the educational institute. Our hypothesis is that these background variables have an effect on belonging to the health-consciousness.

Concerning demographical factors, the effect of gender was firstly examined, as most of the studies and the newly results of the European School Survey Project on Alcohol and Other Drugs (Hibell et al., 2012) showed that the different kind of heath-damaging habits are more likely to occur among boys. In 1999, the behaviour of girls and boys differed less in case of smoking but it presented less similarities in case of alcohol consumption and it differed significantly in substance use. However, in 2011, the gender differences did not disappear but they reduced among secondary school pupils, mostly in drug consumption. The secondary school girls seemed to emancipate in

this case as well (Hibell et al., 2012). Our comparative study of higher institutional students showed that women do not differ from men in smoking. However, the advantage of men is significant and the differences are the biggest regarding alcohol consumption. 32.3% of men are risk-avoiders, 34% of them are social drinkers, 27.1% are chain-smokers and 6.5% are deviant. Meanwhile, it could be seen that 51.7% of women are risk-avoiders, 22.1% of them are social drinkers, 24.3% of them are chain-smokers, while 1.8% of them are deviant. On this basis, it is not surprising on this basis that the differences regarding the belonging to the different kind of clusters are significant, as men are significantly overrepresented among binge drinkers and women among health-conscious people. (χ^2= 67.001, p = 0.000).

The national-ethnical background does not have an effect on its own, but because of its cultural and political additional factors. In the present study, we investigated what kind of difference is caused if a student belongs to the state-creating nation or to the minority. Based on the fact that risky habits root in traditions, it can be supposed firstly that the minority shows the same behaviour like the motherland. Nevertheless, considering the question from a political point of view, which holds that minority state is complicated in terms of national identity, minority students should show worse results. Minority students (e. g. gipsy people) usually show a riskier behaviour compared to the majority population (Paulus et al., 2017; van Tubergen & Poortman, 2010). Conversely, the more effective risk-avoiding behaviour can be seen among minority students as they are overrepresented in the health behavioural group while the majority students are overrepresented in the social drinkers one (χ^2= 74.342, p=0.000). It can be laid down that 42.4% of majority students are risk-avoiders, 29.2% of them are social drinkers, 25.1% of them are chain-smokers and 3.3% of them are deviant. Meanwhile, 57.6% of minority students are risk-avoiders, 16.3% of them are social drinkers, 24.2% of them are chain-smokers and 2.8% of them are deviant.

Among societal factors, parents' educational level has the biggest effect on the social status of the family in Central-Europe, as the differences of the employment's odds, income and the quality of life are dramatic, depending on education. The prevalence of health-damaging behaviour is higher than average among the children of parents with the highest and lowest educational level. Parents' educational level does not affect significantly smoking among the examined students, but it has effect on alcohol and drug consumption. Thus, the children of parents with high education get drunk and use substance more frequently. To sum up, children of parents (especially fathers) with high education level have higher chance to engage in risky behaviour as social drinkers, while children of parents with low or middle education level are more likely to choose a healthy lifestyle (χ^2father= 17.297, p = 0.008; χ^2mother=17.379, p= 0.008).

Table 2: *The distribution of the students of parents with different education level in the health behavioural clusters (N=1673)*

	Father's education level **			**Mother's education level ****		
	Low	**Middle**	**High**	**Low**	**Middle**	**High**
Social drinkers	26.6%	23.7%	**31.6%**	18.3%	25.3%	28.2%
Chain-smokers	27.7%	24.4%	24.3%	17.2%	24.4%	25.9%
Deviants	**6.4%**	2.4%	3.2%	5.4%	2.0%	3.7%
Risk-avoiders	39.4%	**49.5%**	40.9%	**59.1%**	48.3%	42.1%
N=	94	1095	345	93	955	482

Notification: underlined values mean that significantly more students got into that cell of the group than it could be expected according to the random disposal. The significant level was signed with stars. The significance level of Chi-square probe is marked by *** =0.000, **< 0.03, *≤0.05
Source: IESA 2015.

While investigating the financial background of the families, it may be noticed that deviant students are mostly wealthy regarding both objective and relative financial status. On the other side, healthy students come from moderate background. It is interesting that students belonging to the group of chain-smokers are in a better situation regarding material goods compared to healthy people, as they feel poorer in regard to their environment. The relatively lower evaluation of the financial status can be caused by the costly addiction (Fobjective(3, 1669)=3.754; Frelative(3, 1576)=3.069).

Table 3: *The mean of the points of objective and relative financial status in the health behavioural clusters (N=1673)*

	Objective financial status (1-10)		Relative financial status 1-9	
	Mean	SD	Mean	SD
Social drinkers	6.01	2.05	5.20	1.24
Chainsmokers	6.02	1.90	5.02	1.23
Deviants	6.38	2.73	5.53	1.62
Risk-avoiders	5.74	1,94	5.11	1.18
Total	5.90	1.10	5.12	1.22
N=	1673		1580	
ANOVA Sig.	0.011		0.027	

Source: IESA 2015.

Examining the effect of the settlement environment, it seems that rural environment supports the development of risk-avoiding lifestyle, as students from metropolises are underrepresented among healthy people (51.2%) ($\chi 2$= 13.562, p=0.035).

Table 4: *The distribution of the students coming from different type of settlements in the health behavioural clusters (N=1673)*

	Village	Town/city	Metropolis	Total
Social drinkers	21.9%	27.6%	27.0%	25.3%
Chain-smokers	23.5%	25.6%	26.5%	25.0%
Deviants	3.4%	2.3%	4.3%	3.2%
Risk-avoiders	**51.2%**	44.5%	42.3%	46.5%
N=	617	602	423	1642

Notification: underlined values mean that significantly more students got into that cell of the group than it could be expected according to the random disposal. The level of the significance is p= 0.035*
Source: IESA 2015.

Institutional factors

In our analysis, we wanted to grab the higher educational health behavioural context which determines the life of the students. Previously, we argued that this invisible effect may be determined by the characteristics of interpretive communities. It was claimed that it can predominate with overwriting the effect of individual attributes. In our present study, the rate of risk-avoiders of the faculty was aggregated on the basis of individual data of the students studying in the same faculties which means that the faculty rates of the risk-avoiders were assigned to every case as an independent variable. It was stated that a significant difference (p=0.000) can be seen among the different faculties in this regard. As a result, the education field does not have conspicuous effect e. g. faculties of medical and health sciences do not belong to the saliently positive context. The rate of risk-avoiders is a bit higher in teacher and kindergarten education and the rate is relatively higher in engineering, economic and justice fields. Nevertheless, this supposition is not representative for the fields of education.

Variance analysis was used to investigate the differences between students according to health-damaging behaviour in the dimensions of institutional embeddedness. A significant difference could be detected along the memberships. Deviants are members of most of the groups and they can be regarded as the most embedded in this dimension (34.8 points, SD=37.9). They are followed by health-conscious students (18.7 points, SD=22.1), then by chain-smokers (15.9 points, SD=20.6) and the last are the social drinkers (15.6 points, SD=21.1) (p<=0.000) (Table 8).

A significant correlation was found between the frequency of inebriation and intergenerational campus integration and the memberships. ($r_{Spearman}$=-0.059*, p=0.026, N=1404 in case of intergenerational embeddedness, $r_{Spearman}$=-0.092**, p=0.001, N=1358, in case of group memberships).

Table 5: *Differences in the dimensions of integrational embeddedness in the health behavioural clusters.*

	Intergenerational embeddedness		Intragenerational embeddedness		Civil group membership		Health behaviour context	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Social drinkers	33.7	30.5	59.2	16	15.6	21.2	32.9	15.3
Chainsmokers	37.1	32	58.8	15.7	15.9	20.6	35.2	15.8
Deviants	40.1	30.9	53.6	16.7	34.8	37.9	31.1	16.3
Risk-avoiders	37.5	32.2	58.1	16.5	18.7	22.1	44.3	20.7
N	1437		1357		1349		1673	
ANOVA Sig.	0.248		0.194		0.000		0.000	

Notification: The variables of the different dimensions were aggregated and the values were recoded to a scale from 0 to 100 where 0 meant the lowest level of students' integration and 100 meant the highest level of it. The mean of the intergenerational student embeddedness was 17.7 point (SD=22.3), the mean of intragenerational student embeddedness was 58.4 point (SD=16.2) the mean of membership was 36.6 point (SD=32) while the mean of the health behavioural context was (SD=18.7).
Source: IESA-2015

Comparison of the different effects

In the last stage of our research, the effects on the individual risk-avoiding behaviour were measured with logistic regression. We wanted to explore how (1) gender, (2) social status indexes, (institutional factors) and individual's own relationship network may influence the development of the individual's risk-avoiding behaviour. Thus, we analysed the development of the individual risk-avoiding behaviour as a depending variable (1 belonging to the risk-avoiding student group, 0 belonging to any other groups) and the effects of (1) gender and (2) social status indexes (the parents' educational level, the type of the settlement in childhood, the minority or majority citizenship), (3) institutional factors (the health behaviour context of the society of the campus, the intergenerational and intragenerational campus integration of the student) and (4) individual's own relationship network (external network, participation in volunteer communities) while controlling their effect on each other.

During the multi-step analysis, the effect of gender, parents' educational level and type of settlement was measured. The financial status was left out of the model while it showed a strong correlation with the educational level of the parents. Being a woman increased significantly the chances of belonging to the group of risk-avoiders in the multi-step model. That is to say that the disappearing of gender differences in the case of deviant behaviour observed at high school students is not typical among the examined students (gender differences are still visible). According to the data, a student as a woman has two times bigger chance to avoid the health-damaging behaviours which can be caused by norm following behaviour developed by her familial and institutional education. It is remarkable that parents' educational level and the type of settlement – involved as the indicators of the social status of the family – did not show a significant effect on student's health behaviour; thus, presumably, other suppressors may stand in the background of the connection shown by the bivariate model. The involvement of the minority citizenship status could be detected as an influential factor as minority students have double chance to avoid health-risk behaviours, in comparison with majority students. Involving the variables of the higher education institute and relationship network, the power of this effect not only decreases but it loses its significance as well. This shows that the minority students' better health behaviour is caused by the strong institutional integration and relation embeddedness of the indigenous minority Hungarian students in the regional tertiary educational institutes. In the third step, the health behaviour context could be detected as the strongest influential factor (after the gender of the student) and its value was strong and significant. Essentially, it can be said that, in a risk avoider campus society, a student has two times bigger chance to avoid health-damaging habits, independently of the individual's social status. This trait of the context is so strong that the intergenerational support of the faculty members

– which showed a significant impact in our previous investigations – did not show any remarkable effect so that the influence of the faculty members is lower than the health behaviour approaches of the campus society. According to our analysis, the strong embeddedness into the student relationship network does not strengthen the protecting role of the social relations. Moreover, the strong and multiplex embeddedness into the peer community increases the chance of the risk-behaviour significantly. So, it can be stated that the close intragenerational relationship network of the students endangers the evolvement of the healthy lifestyle. The external intragenerational relationship network, which is stronger than the average, seems to be indifferent; however, the volunteering participation can have a positive impact on student's behaviour, which suggests a protective effect of these volunteer communities.

Table 6: *The odds of the individual risk-avoiding behaviour (logistic regression analysis, expB)*

	1	2	3	4	5	6
Woman	2.298***	2.220***	2.231***	2.229***	2.320***	2.303***
Parent with diploma	0.844	0.885	0.902	0.902	0.907	0.899
Rural	1.284	1.067	1.069	1.069	1.063	1.033
Metropolis	0.913	0.942	0.942	0.942	0.943	0.932
Minority		2.011***	1.083	1.085	1.147	1.072
Health behavioural context			2.140***	2.144***	1.998***	2.045***
Intergenerational department embeddedness				0.984	1.044	0.993
Intragenerational department embeddedness					0.680***	0.655***
External relationship network						1.031
Voluntary community participation						1.395***
Constant	0.206***	0.179***	0.157***	0.000***	0.182***	0.157**

Notification: reference values (0): man; at least one parent has not a degree; city; city and village; majority; avoiding risk below the mean at the faculty; intergenerational and intragenerational embeddedness, weaker intragenerational network out of the institute below the mean; volunteer work. *** =0.000, **< 0.03, *≤0.05. Source: IESA-2015

Discussion and conclusions

In our study, we measured an important dimension of the health behaviour, namely, the evolvement of the health-risk habits in tertiary educational context. The different dimensions of the embeddedness into the higher educational institutions have not been investigated on health-risk behaviours yet. As our research group has detected a remarkable effect of the student interpretive communities in case of academic engagement and integration (Pusztai, 2015; Kovács, Kovács & Nagy, 2016), we hypothesised that these show a significant effect on students' health behaviour as well.

Our examination was made in a multi-ethnic and multicultural geographical region. This means that the investigation was made in a geographical region which forms a socio-economic and cultural unit, but it belongs to more countries. On this basis, the participants were collected from the institutes from the North-Great Plain in Hungary, Transcarpathia in Ukraine, Transylvania and Partium in Romania and Vojvodina in Serbia (N=1792). We wanted to explore what kind of student groups can be separated alongside the smoking, alcohol consumption and substance use habits. Furthermore, we inquired what kind of differences can be detected among the different groups according to the demographical, socio-cultural and higher educational factors. During this research, four groups were differentiated, namely: risk-avoiders (who are in the biggest ratio), social drinkers, chain-smokers and deviants (who are in the smallest ratio). The results show that men, majority of them being students and having fathers with high educational level may be seen in the highest rate among the social drinkers, while women, students from villages, children of mothers with low educational level and children of fathers with middle educational level may be seen in the risk-

avoider group in the biggest ratio. In the deviant group, men and children of fathers with low educational level were overrepresented and it can be said that they are in the best objective and subjective financial status. Objective and subjective financial evaluation seemed to be steady. The advantage of the students from villages may be interpreted in connection with the fact/ based on the fact that those who grew up in a village or in an environment of a small settlement could have experienced a stronger control which is characteristic for the smaller communities. More social drinkers and chain-smokers may be seen among students coming living in cities where the control of the environment cannot be prevailed.

Neither intergenerational, nor intragenerational embeddedness showed a significant difference among the groups, although students in the deviant group have the highest level of institutional embeddedness, measuring the question about the membership in a professional, cultural, leisure-time etc. organisation. A negative correlation was experienced between the intragenerational institutional embeddedness and relationship network embeddedness measured on the basis of the memberships, together with inebriation. Therefore, the more students can turn for professional and other kinds of support to faculty members or are members of different kind of (but firstly college) organisations that belong to the institute they are enrolled to, the less the likelihood of inebriation is. However, the connection is valid inversely as well. Thus, students who are intoxicated more frequently have worse relationship with their lecturers and they do not ask them for help with trust. Furthermore, they connect to fewer universities or other organisations.

Overall, the control of the factors which strengthen the development of risk-avoiding behaviour showed that a woman has double chance to avoid different health-damaging behaviours, in comparison with men. It is important that the institutional climate has bigger influence than the individual status factors. In a campus environment which is dominated by risk-avoiding approaches, the student has double chance to avoid health-damaging habits. While previous investigations claimed only the effect of strong embeddedness into student relationship network, our analysis pointed out that the strong and multiplex embeddedness into peers increases significantly the odds of risky behaviour. The membership of volunteer groups or organisations seemed to have a protective effect against risky behaviour, which highlighted the responsibility of environment created by the tertiary educational institute.

Our results contribute to the improvement of the health politics of the investigated higher educational institutes by drawing attention to the role of student-faculty relationships and voluntary associations and groups functioning in higher educational institutes, which have remarkable influence on the health behaviour of students. Regarding the institutional effects, it is important to highlight the critical effect of the student community. When students are enrolled to a faculty (and have peers with these norms) where they can meet the importance of health protection and avoiding health-damaging behaviours daily, they are more likely to become health-conscious. For this reason, it is proposed for the institutes to provide regular preventive but entertaining programs and counselling sessions where firstly student communities and friend groups may participate. These sessions may also provide them knowledge about the main pillars of health-conscious lifestyle. In addition, students can recognize the brand new academic results and approaches by attending these sessions. With courses organised in this topic, the collaborative project work rewarded with credits could be effective for students and they could be better motivated for the participation into different kinds of health-developing programs.

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