

ANALYSIS OF ALCOHOL CONSUMPTION IN MEDICAL STUDENTS ANALÝZA KONZUMÁCIE ALKOHOLU U ŠTUDENTOV VŠEOBECNÉHO LEKÁRSTVA

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ABSTRACT

Background: Medical students as future physicians have a potential to form opinions and attitudes of general population. Their behaviour obtained during university study may project into their future lifestyle.

Aims: Study analyses selected socio-demographic determinants of alcohol consumption in medical students at the Jessenius Faculty of Medicine in Martin by gender, year of study and cultural and historical background (Slovak vs. foreign students).

Sample and Methods: Data of a cross-sectional questionnaire study were collected during academic year 2018/2019 among Slovak (1st class – 130; 4th class – 83) and foreign (1st class – 90; 4th class – 88) students originating mostly from Scandinavia. We analysed alcohol consumption more than once a month and having 6 and more drinks of beer, wine, and spirit within last month.

Results: Most of the students reported alcohol drinking more than once a month, sharing no significant differences across subgroups. There were no significant differences between classes in Slovak students regarding preferences, while spirits remarkably dominated in males (68.4 % in 4th class). In foreign students – females – in 4th class compared with 1st one there was more frequent consumption of beer (43.1 % vs. 14.3 %), wine (45.1 % vs. 14.3 %) and spirits (33.3 % vs. 12.2 %).

Conclusions: Alcohol consumption is widespread among students and dominating preference of spirits in Slovak students-males presents an unfavourable finding. Higher alcohol consumption among 4th class students-females indicates a possible increase of alcohol drinking during their study associated with relatively high social tolerance towards it in Slovakia compared with Scandinavian countries.

Key words: Medical students. Alcohol consumption. Alcohol preference. Socio-demographic determinants. University life

ABSTRAKT

Východiská: Študenti medicíny majú ako budúci lekári predpoklad podieľať sa na utváraní názorov a postojov populácie. Správanie, ktoré si osvoja vo vysokoškolskom období môže mať vplyv na ich životný štýl v budúcnosti.

Ciele: Práca analyzuje vybrané sociálno-demografické determinanty konzumácie alkoholu u študentov všeobecného lekárstva na Jesseniovej lekárskej fakulte v Martine vzhľadom na pohlavie, rok štúdia a kultúrno-historické pozadie (slovenskí vs. zahraniční študenti).

Štúbor a metódy: Zber dát dotazníkovej prierezovej štúdie sa realizoval v akademickom roku 2018/2019 u slovenských (1. ročník – 130; 4. ročník – 83) a zahraničných (1. ročník – 90; 4. ročník – 88) študentov, pochádzajúcich najmä zo Škandiná-

vie. Analyzovali sme konzumáciu alkoholu častejšie ako raz mesačne a vypitie 6 a viac nápojov piva, vína alebo liehovín za posledný mesiac.

Výsledky: Väčšina študentov uviedla konzumáciu alkoholu častejšie ako raz za mesiac, bez významných rozdielov medzi sledovanými podsúbormi. Z hľadiska preferencií neboli u slovenských študentov významné rozdiely medzi 1. a 4. ročníkom, pričom u mužov výrazne dominovalo pitie liehovín (68,4 % vo 4. ročníku). U zahraničných medzi ženami bolo vo 4. ročníku v porovnaní s prvým častejšie pitie piva (43,1 % vs. 14,3 %), vína (45,1 % vs. 14,3 %) aj liehovín (33,3 % vs. 12,2 %).

Záver: Konzumácia alkoholu je u študentov rozšírená, pričom nepriaznivým zistením je dominancia preferencie liehovín u slovenských študentov – mužov. Vyššia konzumácia vo 4. ročníku u zahraničných študentiek naznačuje na možný nárast pitia alkoholu počas štúdia súvisiaci s jeho relatívne vysokou sociálnou toleranciou na Slovensku v porovnaní so škandinávskymi krajinami.

Ľúčové slová: Študenti všeobecného lekárstva. Konzumácia alkoholu. Preferencia alkoholu. Sociálno-demografické determinanty. Vysokoškolské prostredie

INTRODUCTION

Alcohol use ranks among the most prominent public health issues including also students of medicine. They, as future physicians, present a specific target group potentially contributing to development of views and approaches regarding health and healthy lifestyle in general population. Lay people consider physicians as persons influencing public views and thus can facilitate preventive activities focused on reduction of alcohol use and related negative impact. This makes views of medical students regarding alcohol consumption important taking into consideration their future approach towards this psychoactive substance either during education activities of primary care physicians or treatment of alcohol addiction [1-4].

Alcohol consumption in Europe ranks among the highest ones over the World. Namely, “a middle belt” countries spreading from Ireland to Baltic countries dominate. Although according to official

WHO data the consumption in Slovakia declined from 12.1 litres of pure alcohol per capita in 1998 to 10.2 litres in 2018, it still remains exceeding the European average (7.8 litres). Therefore, Slovakia ranks among countries with relative high alcohol consumption [5, 6].

University study presents a significant period considering behavioural changes. Young adults become independent of their families and should be responsible for their behaviour. In relation to changes associated with college life – different lifestyle, limited family support, and excessive stress – they are exposed to increased risk of addictive substance use. Alcohol is the most frequently used socially accepted addictive substance preferred by students [7-10].

Alcohol consumption is commonly initiated as early as during secondary school study and is further deepened during university study [11]. Alcohol consumption is particularly increased among students living in university ground, i.e. in dormitory together with roommates or in students spending long time in a college [12, 13]. Among external factors influencing excessive alcohol use in students 19 – 30 years old, a significant role is played by social activities closely associated with drinking of beverages such as parties or events organised by students [13, 14]

Considering alcohol use, type of beverage should be taken into account. Beer, spirits and wine rank among the preferred beverages while preferences differ in relation to nationality or family and cultural background of students. There are identified differences related to a year of study when students of higher classes consumed alcohol more frequently than freshmen [11, 15].

Our study analyses selected aspects of alcohol use – frequency of beverages consumption and preferred types of beverages – in medical students at the Jessenius Faculty of Medicine in Martin (JFM CU) considering gender, year of study and their origin (Slovak students vs. foreign ones studying in English). The results can contribute to understanding of the role of cultural and family background as well as social environment of the college as determinants of alcohol use. The findings can present a starting point for design and implementation of effective preventive programs in this target group.

GOALS

The study is focused on analysis of an influence

of social-demographic factors (college social environment, family and cultural background) on alcohol consumption in the 1st and 4th class medical students.

The goals are focused on the analysis of:

- frequency of alcohol drinking more than once a month,
- beverages preferences, i.e. comparing of frequency of drinking of beer, wine and spirits above 6 and more doses a month by gender (males vs. females), year of study (1st class vs. 4th class) and origin (Slovak vs. foreign students).

SAMPLES

The sample consisted from Slovak and foreign medical students of the 1st and 4th class at the Jessenius Faculty of Medicine in Martin, Slovakia.

Table 1 Students of the JFM CU enrolled in academic year 2018/2019 participating in the study

Students	Year of study (class)	Males (n)	Females (n)	Response rate (%)
Slovak	1 st	54	76	71.0
	4 th	19	64	100.0
Foreign	1 st	41	49	63.8
	4 th	37	51	100.0

Table 2 Number of foreign students enrolled in academic year 2018/2019 participating in the study by countries of their origin

Country of origin	1 st class		4 th class	
	Males	Females	Males	Females
Norway	25	26	13	36
Iceland	5	18	5	7
Germany	3	0	2	3
Poland	1	2	3	2
Sweden	3	1	0	1
Italy	0	1	3	2
Portugal	1	0	1	2
Finland	0	0	1	1
Denmark	0	0	2	0

In academic year 2018/2019 there were 183 Slovak and 141 foreign students enrolled in 1st class and 83 Slovak and 88 foreign students in 4th class. In overall, 391 of them participated and completed the questionnaire including 220 students in 1st class and 171 in 4th class. Lower response rate in 1st class students was caused by administrative obstacles preventing distribution of the questionnaire for all of

Table 3 Used variables, their dichotomisation and analysed values

Description of the variable	Formulation of the question	Possible answers and their dichotomisation	Analysed values of the variables
Regular alcohol consumption	<i>How often do you consume alcohol drinks (indicate one option)?</i>	never – I am abstainer once a month or rarely	more frequently than once a month
		2 – 4 times a month 2 – 4 times a week 5 – 6 times a week every day	
Preferences of beverages	<i>During the past 30 days, how many alcoholic drinks did you drink? App. 0.5 l of beer, 0.2 l of wine, or 0.04 l of spirit is considered as the drink. (in each row indicate one option) (there were the following possibilities: beer, wine, spirits and others)</i>	0 1-2 3-5	6 and more drinks within last month
		6-9 10-19 20-39 40 and more	

them. However, these obstacles neither influenced the sampling process nor were in associated with the study (Tab. 1). The most of the foreign students were from Norway 56.1 %) and Iceland (19.5 %) (Tab. 2).

METHODS

The questionnaire study has cross-sectional design. Data collection was realised from November 2018 to March 2019. Questionnaires were anonymous and approved by the Ethical Committee of the JFM CU (EK 1504/2014). They were distributed among 220 1st class (Slovak – 130; foreign – 90) and 171 4th class medical students (Slovak – 83; foreign – 88). Completion of the questionnaires lasted 15 – 25 minutes. We used own original questionnaire focused on risk factors of cardiovascular diseases. In the study we analyse variables related to alcohol use i.e. regular consumption within last 30 days and preferences of beverages (beer, wine, spirits and others) (Tab. 3).

In the foreign students also nationality and ethnical (cultural) background was asked using the two complementary question: „Nationality“ and „Ethnic (cultural) background“.

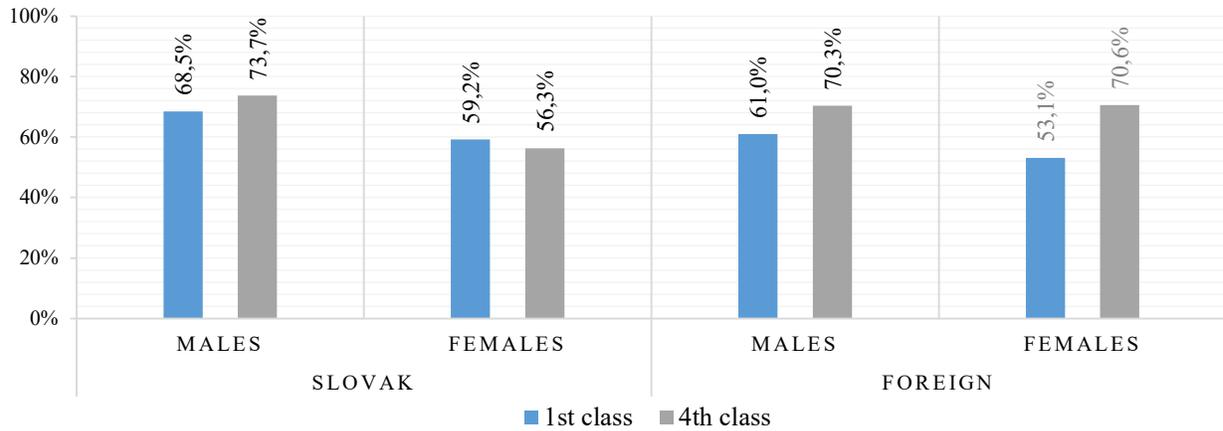
The collected data were arranged using Microsoft Excel 365 into four databases according to year of study and origin of the students. Methods of descriptive and analytic statistics were used. To identify association between studied variables contingency tables in Microsoft Excel 365 were used. We used chi square test to identify statistically significant differences between proportions. A result with the p-value below 0.05 was considered statistically significant. The results are presented both in

absolute numbers and proportional (percent) values in tables and graphs. Confidence intervals 95% are added to the percent values.

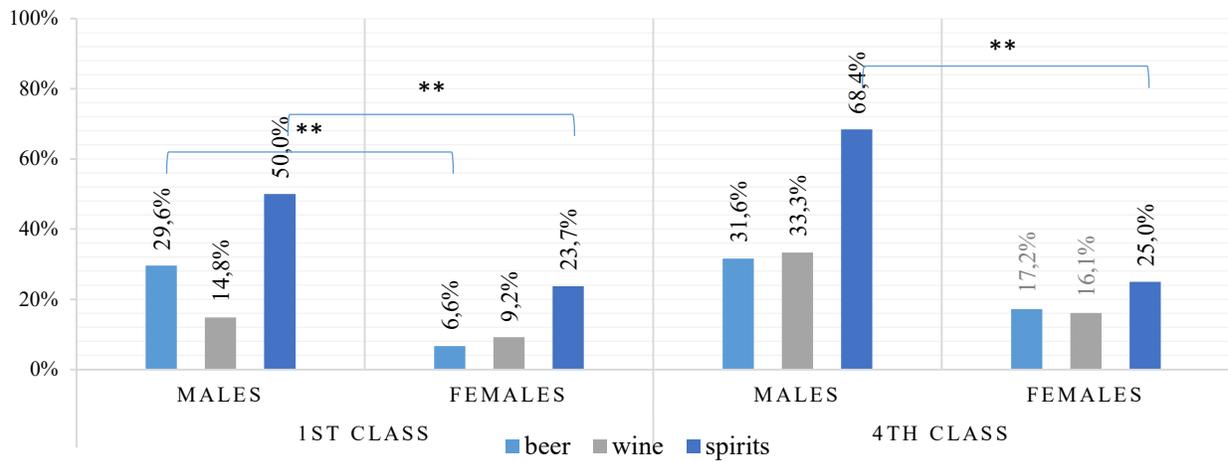
RESULTS

From 391 respondents (240 females and 151 males), most of Slovak and foreign students (62.6 %) reported alcohol consumption more frequent than once a month. Significant differences were identified neither between genders nor between classes (Graph 1). Among 4th class foreign students the consumption slightly dominated, however, the difference did not reach level of statistical significance. Among Slovak students, no significant difference was found between classes considering beverage preference. Both males and females most frequently consumed spirits (Graph 2). Males dominated above females in consumption of spirits (both 1st and 4th class) and beer (only 1st class).

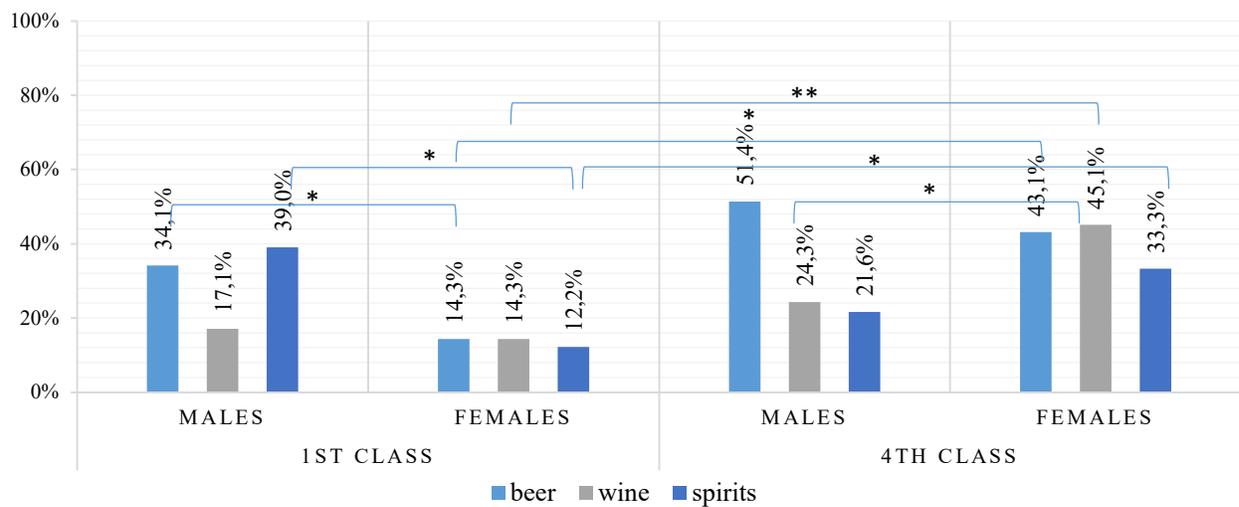
Among foreign medical students, significant predominance in all types of beverages was found in the 4th class (Graph 3). Within the 1st class, the consumption differed between males and females significantly considering beer (males – 34.1 %; females – 14.3 %; $p = 0.027$) and spirits (males – 39.0 %; females – 12.2 %; $p = 0.003$). Among the 1st class medical students, no significant differences in beverages preferences were found considering their origin (Graph 4). In 4th class medical students, there were significant differences in consumption of beer and wine among females on account of increased levels in foreign students (Graph 5). On the other hand, Slovak males preferred spirits and the level was more than three times higher than in foreign students (68.4% vs. 21.6%)



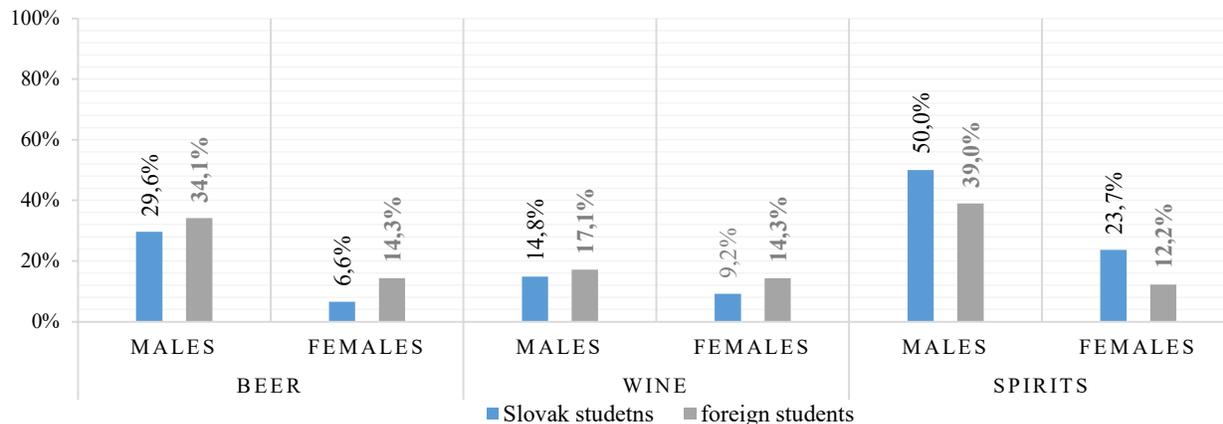
Graph 1 Alcohol consumption in Slovak and foreign medical students by gender and year of study



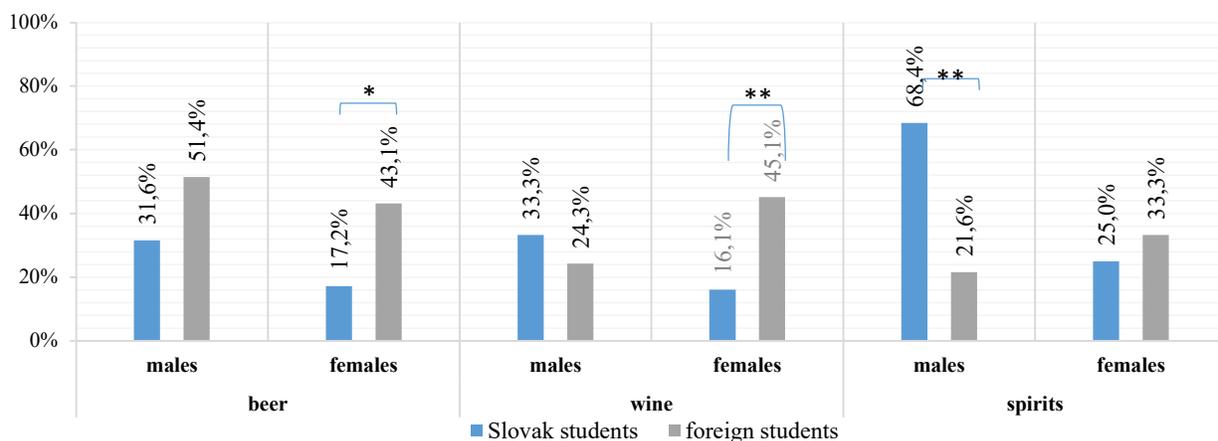
Graph 2 Beverages preferences in Slovak medical students by year of study and gender – consumption of six and more drinks within last month (*p < 0.05; **p < 0.001)



Graph 3 Beverages preferences in foreign medical students by year of study and gender – consumption of six and more drinks within last month (*p < 0.05; **p < 0.001)



Graph 4 Beverages preferences – Slovak vs. foreign 1st class medical students by gender – consumption of six and more drinks within last month



Graph 5 Beverages preferences – Slovak vs. foreign 4th class medical students by gender – consumption of six and more drinks within last month (* p < 0.05; ** p < 0.001)

DISCUSSION

Alcohol consumption during university study presents a topical public health issue. Change of a social environment following the admission becomes a significant turning point of a freshman's behaviour. Particularly, in foreign students a new specific environment formed by schoolmates of various cultures and nationalities plays an important role. Moreover, influence of Slovak students consuming in the 1st class more alcohol than their foreign peers should be taken into account [8, 12, 13]. Our results indicate that majority of students at the JFM CU consume regularly alcohol regardless of gender, year of study and nationality or cultural background. Living at the dormitory and related social activities significantly influences alcohol consumption during university study [13].

Slovak students prefer particularly spirits, which should be considered negatively. Spirits, having

higher potential to develop addiction and being associated with problem drinking patterns and drunkenness [16] present the most commonly consumed beverage in Eastern European countries calculated as per capita consumption of pure alcohol. Central European countries including Slovakia and Czechia were traditionally characterised by preference of beer. However, increased trend of consumption of spirits corresponding with their increased production can be seen in Slovakia during last decades [17, 18]. The recent Global status report on alcohol and health [19] reports that spirits are the most frequently consumed beverage in Slovakia. On the other hand, absence of deeper differences in alcohol drinking in students across years of study indicate stability of their drinking patterns and we can suppose that they maintain their behaviour adopted before admission to the university study.

The situation is different in foreign students, in

whom there is no specific beverage preferred. However, alike Slovak students, women of the 4th class consumed remarkably more frequently all types of beverages in comparison to the 1st class. This finding indicate an increase of alcohol use among them during university study, most probably as an effect of the social environment in Slovakia which is different from those in countries of their origin. Social environment, considered from this context, is formed both by implemented alcohol control measures and prevailing drinking patterns in the society. Most of foreign students originate from countries with more rigorous legislative norms regarding alcohol sale and consumption than in Slovakia. In Scandinavian countries (e.g. Norway and Sweden), common grocery shops cannot sale beverages containing more than 4.7 % of alcohol by volume. Moreover, opening hours of alcohol sale are limited. There are also differences in age limits. In Norway, 18 years old young adults can purchase only beverages up to 22 % of alcohol by volume, while in Slovakia there are no alcohol concentration limits [20]. On the other hand, the results do not indicate disappearing of differences by countries of origin during study and foreign students even in the 4th class maintain their specific picture different from Slovak ones. Therefore, differences in alcohol control policy between Slovakia and Scandinavian countries are most probably responsible for the above mentioned findings.

In the 4th class, i.e. in older students the gender differences are less pronounced corresponding with higher consumption in females, namely foreign students. This finding can be interpreted as a part of development seen in most European countries where a traditional predominance of males has been disappearing during last decades [21]. Therefore, respective changes in social-health impact should be expected in a future, i.e. relative increase of loss of health attributable to alcohol among females.

As a limitation, we can mention a relative small sample caused by the specific target group (students of the JFM CU). On the other hand, as we involved the entire target group, possibility of selection bias has been eliminated and thus increasing representativeness of the results.

The study brings several stimulating findings as starting points for more detailed analyses focused particularly on drinking patterns. Moreover, through long-term surveying of this target group we will be able to employ a cohort study design to more

accurately identify changes occurring among medical students during their university study.

CONCLUSIONS

Alcohol consumption is widespread among medical students. Differences across classes are among Slovak students not remarkable. This indicates only insignificant changes during their study. However, foreign students in later years of their study, namely females, consume alcohol relatively more frequently than freshmen. This probably reflects influence of social environment in Slovakia, particularly higher social tolerance of alcohol drinking compared against Scandinavian countries. The remarkable preference of spirits in Slovak students should be considered as the negative finding. Considering our results, preventive measures should be focused already on adolescent age group, namely forming of negative attitudes towards high-risk drinking patterns including consumption of spirits leading to drunkenness. Moreover, taking into consideration experiences from some Scandinavian countries, expert discussion on possible legislatively based limitation of availability of beverages with higher alcohol content (above 20 % of alcohol by volume) for persons under age of 21 years.

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