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Vlad Zeno MILLEA

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EVOLUTION, IN ROMANIA, OF ALCOHOL CONSUMPTION AND CHANGES IN ASSOCIATED HARM, FROM A COMPARATIVE EUROPEAN PERSPECTIVE

***Vlad Zeno MILLEA*[1]**

Abstract

In this paper we wanted to reveal the pattern of alcohol consumption in Romania, with respect to its evolution within the European context of past decades, and to highlight the incidence of diseases due to alcohol misuse from same period (trying, also, to connect the two aspects). We analyzed data provided by World Health Organization and European Commission which allowed us to evaluate the position of Romania, within Europe, concerning the evolution of alcohol consumption and its consequences. As an important result, we found that in Romania coexist the highest share of people who declared themselves as abstainer and the highest proportion of patients with liver disease caused by alcohol abuse. But Romania has, also, the most big rate of patients with liver disease due to other causes than alcohol misuse and we must consider that structural aspects of the medical system are involved in this problem (i.e. difficulties in identify C hepatitis, the precariousness of its prophylaxis, etc.). As conclusion, we suggest, as starting point for other research, that Romanians consume much more alcohol than shows official records due to household production (difficult to control) and that alcohol consumption is very unequal distributed. In this regard, we assume the existence of a (under-estimated) group of persons addicted (or practicing "binge drinking") which consume high quantities of alcohol (containing harmful substances, due to artisan production or to the lack of quality tests for beverages sold in stores). Also, we consider that in our country are lacking resources (or aren't well managed) for medical care and public policies targeting the prevention of illnesses related to alcohol misuse.

Keywords: alcohol pattern of consumption, alcohol misuse, binge drinking, alcohol liver disease, death rate due to alcohol abuse

1 University "1 Decembrie 1918" from Alba Iulia, Faculty of Law and Social Science, Department of Social Science, Alba Iulia, Street: Unirii nr. 15-17, postal code: 510009, Alba Iulia, ROMANIA. E-mail: vladmillea@yahoo.com

Introduction

We think that is important to start our presentation by revealing, briefly, the importance granted to alcohol abuse and alcohol related problems by EU policy makers.

On the European Commission web page, dedicated to alcohol issues[2] it is revealing that "Alcohol related harm is a major public health concern in the EU accountable for over 7% of all ill health and early deaths". According to the same source, EU members are responsible for their national alcohol policy but they are supported by a common strategy, implemented in 2006 (its results in supporting the decrease alcohol related harm were assessed in 2009 and 2013).

Changes in alcohol consumption patterns and drinking harm consequences, in EU, are evaluated by the European Information System on Alcohol and Health (EUSAH)[3]. EUSAH works due to the collaboration of the European Commission and the World Health Organization[4] (WHO) within EU Public Health Programs. The country profiles for each UE member are regularly delivered (within the EC-WHO cooperation) in order to create, simultaneously, a local and a general view regarding alcohol and health.

An important role is owned, also, by The Committee on National Alcohol Policy and Action (CNAPA)[5] consisting from national delegates which meets bi-annual in Luxemburg to share good practice regarding drinking issues. The purpose is to make possible consensus and convergence of alcohol policies within EU members. The committee (CNAPA) created an "Action Plan on Youth Drinking and on Heavy Episodic Drinking (Binge Drinking) (2014-2016)[6]"

The Action Plan had six areas for action which are the following:

- "Reduce heavy episodic drinking (binge drinking)
- Reduce accessibility and availability of alcoholic beverages for youth
- Reduce exposure of youth to alcohol marketing and advertising
- Reduce harm from alcohol during pregnancy
- Ensure a healthy and safe environment for youth
- Support monitoring and increase research"

[2] European Commission, DG Health and Food Safety, Public health, Alcohol, Overview, https://ec.europa.eu/health/alcohol/policy_en, accessed in 2 November 2017

[3] European Commission, https://ec.europa.eu/health/alcohol/policy_en, accessed in 2 November 2017

[4] World Health Organization, Home http://www.who.int/en/, accessed in 2 November 2017

[5] European Commission, DG Health and Food Safety, Public health, Alcohol, Overview, https://ec.europa.eu/health/alcohol/policy_en, accessed in 2 November 2017

[6] European Commission, Action Plan on Youth Drinking and on Heavy Episodic Drinking (Binge Drinking) (2014-2016), https://ec.europa.eu/health/sites/health/files/alcohol/docs/2014_2016_actionplan_youthdrinking_en.pdf, accessed in 3 November 2017

We mention, finally, the Joint Action on Reducing Alcohol Related Harm (RARHA)[7] which was created by the European Union (in January 2014), in order to support Member States to follow common priorities from EU Alcohol Strategy and to increase EU members capacity of reducing harm related to alcohol.

UE members were supported to use the same methodology to evaluate changes in alcohol related harm and to improve the communication between countries regarding those aspects. In the end, it was created a number of good practice approaches for information transmission (with respect to effectiveness, transferability, relevance, costs and usefulness). As final goal, the Joint Action wanted to sustain health and wellbeing of European Union people and to decrease spending with health systems as well as in entire economy.

Due to the complexity of policies, programs and activities targeting public health promoted by European Commission, it's very difficult, in a few words, to offer a relevant image of efforts that are made in this direction. We can conclude that, even if it isn't defined as a major target for Europe 2020 Strategy[8] (in which economic development is essential), health improvement and, particularly, reducing the risks associated with excessive alcohol consumption represent important goals of European Commission, such that large human and economic resources were allocated for their achievement.

EU Alcohol consumption from sociological perspective

We will try, briefly, to reveal the way that alcohol abuse related problems are reflected by sociological research (targeting Europe or UE), with accent on studies which offer multi-cultural and / or longitudinal perspective.

We start our approach using the results of the article "Alcohol Misuse and its Consequences – An Overview and a European Perspective" written by Ian T. Gilmore in 2010. The author emphasize, from the beginning, that "Alcohol is an important part of European culture and Europe currently has the world's heaviest alcohol consumption" (Gilmore I., T., 2010, p 47). Gilmore identify, furthermore, some rapprochements between alcohol consumption patterns from Europe, especially in global per capita consumption, in the nature of beverage and in the frequency of teenagers "binge drinking". For United Kingdom and Ireland, who had, in the past, relatively low levels of alcohol consumption, this „harmonization" between EU countries generated a higher quantity of alcohol per capita, less good health status and the increase of cirrhosis deaths rate above European

[7] European Commission, Joint Action on Reducing Alcohol Related Harm (RARHA), http://ec.europa.eu/chafea/news/news310.html, accessed in 3 November 2017

[8] European commission, Europe 2020 strategy, https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en accessed 3 Nov. 2017

average. According to the same source, people from south Europe consume alcohol mainly or only during meals, and northern Europeans drink alcohol usually without food. The author reveal, also, that in Mediterranean countries people are drinking more frequently but small quantities while in the north Europe alcohol consumption is rarely but quantities consumed are much bigger ("binge drinking"). It also highlights the fact that social class, gender and age influence the pattern of alcohol consumption. By example, in every culture females drink less than males, consume smaller quantities on every occasion and have a bigger proportion of abstainers. Gilmore consider that the gender gap regarding alcohol consumption tends to decrease, especially for younger, due to the emancipation of woman and to the competition for workplaces (at least as a part of the explanation). Concerning teenagers, the same author reveal that the great majority of this age category consumed alcohol until the age of 15. In central Europe and in Baltic countries, approximately 75% of 15 years olds declared that they have been drunk at least once (the proportion, in south Europe, was about 50%). Regarding negative health consequences of alcohol consumption, Gilmore (2010) revealed that Europe is the most affected. Approximately 6% of all deaths and of 10.7% from "disability-adjusted life years loss" are attributed to alcohol misuse. The worst is that drink affects young much more that others age categories: in the majority of EU countries approximately 10% of woman mortality and 25% of men mortality is related to alcohol for people having 15-29 years.

From other perspective, Gilmore (2010) show that alcohol harmfulness can be divided in three categories: inebriation, addiction and toxicity against body organs. In Western Europe predominate the chronic consequences of addiction and the harmful effect of toxicity but accidents and the violence related to alcohol are more frequent in eastern European countries. The author pointed, in addition, that the pattern of alcohol consumption is very important for the damages caused by it. He argued by describing a study realized in Scandinavia, on a sample of people that had the same alcohol consumption per week. Subjects that practiced "binge drinking" had three times bigger mortality rate and 6.5 times more frequent acute myocardial infarction.

Gilmore (2010) revealed, also, that both for men and woman, alcohol related deaths are more frequent in the most deprived groups comparing with those having highest socioeconomic status (even if at medium level, measured by self-reported alcohol consumption, differences between groups are small). A possible explanation proposed by the author is that patterns of consumption can be very different even the medium level is similar. Further on, the author examines politics regarding alcohol consumption, highlighting difficulties related to their application: it is hard to reduce the access at a legal substance which isn't an ordinary one because its frequent consumption leads to addiction. Gilmore (2010), show that the evolutions of alcohol consumption, last two decades, differ very much depending on Europe cultural zones. By example, countries with the highest drinking level (France, Italy and Spain) experienced an important decrease while in others, as UK, have raised constantly their consumption. The explanation, considers the author, is related to the measures applied in the first category of countries: interdiction of alcohol publicity, the sports promotion and, in addition,

the decrease of alcohol blood concentration accepted for car driving. The National Alcohol Harm Reduction Strategy for England (2004) was criticized for not really considers the association between price, availability and consumption (and, so, concrete measures of this kind are missing). In contradiction with the above mentioned strategy, in UK the access to alcohol became much easier (every day of week and at any time).

After considering a general perspective on Europe alcohol consumption from two past decades, we wish, now, to point out more particular aspects about consumption patterns and about their consequences.

Rehm J., et al. (2007) analyzed how much from the important difference on premature mortality, existing between eastern and Western Europe, can be explained by their patterns of alcohol consumption. The comparison was made, between, on the one hand, France, Sweden and U.K. and, on the other hand, Czech Republic, Hungary, Lithuania and Poland (with Russia as an external comparator). Authors found that for all the eight countries, alcohol harm was the cause for 14.6% of premature adult deaths (17.3% for man and 8.0% for woman). For new UE members and for Russia, premature death rate (due to alcohol misuse) was obviously higher than for the three western European countries. Russia had a rate of 29 per 10.000 premature deaths attributable to alcohol, by comparison to Sweden, whose rate was of only 2.7 deaths / 10.000. For women, the highest differences concerning alcohol attributable deaths were found between, on the one hand, Hungary (with 5.0 at 10.000) and Russia (4.7 at 10.000) and, on the other hand, Sweden, with only 0.5 premature deaths due to alcohol abuse.

It is useful to establish differences between countries regarding harmful alcohol effects, but potential explanations, obtained using cross-cultural studies, are more important for understanding the diversity of drinking patterns and of their consequences.

Kuending et al. (2008) bases their study on the idea that cultural norms related to what is acceptable regarding alcohol consumption and drunken behavior are relevant, also, for the toleration of the negative consequences of drinking. The researchers wanted to establish differences between cultures concerning the reporting on adverse consequences of alcohol (by holding the drinking patterns constant – medium level of consumption and moderate “binge drinking” frequency). Researchers tried, also, to identify explanatory factors to establish which of the consequences, mainly acute or chronic, are more frequently affected by attribution process. The study was made on eight countries who provided complete information on drinking patterns and consequences: three Nordic countries (Finland, Sweden and Iceland); the Isle of Man (a non-continental country); three Central Europe countries (Netherlands, Czech Republic and Hungary); and Switzerland.

The authors identified differences between countries regarding the way that are perceived alcohol-related adverse consequences and, particularly, between Nordic and other European countries. Authors find a higher variability, among countries, for “acute” reported consequences (injuries due to alcohol use or

incapacity to remember what happened in state of drunkenness). Finally, the authors concluded that the alcohol misuse consequences reported by the subjects are strongly related to cultural norms, fact that can be better understood if its consumption is considered as a "time out" behavior. Even if people don't have a "normal" conduct when they drink too much, their behavior is controlled by a set of norms that are different from a society to another, and which have a superior explanatory power for persons actions comparing with aspects related to their biological condition. Respondents from „dry" countries, with relatively rare drinking episodes but very intense (typical for Nordic countries) were more likely to attribute alcohol consequences on the real substance use, comparing to people from 'wet' countries (in which people consume moderate amounts of alcohol but this habit is frequent, integrated into everyday life). This difference in the process of attribution is more powerful regarding the episodes of „binge drinking".

In our brief presentation of some cross-cultural differences with respect to alcohol issues, we consider useful the approach a very specific matter, the relation between alcohol drinking and liver cirrhosis mortality (in Romania, liver diseases, caused by alcohol or by other factors, has the greatest incidence comparing to all EU countries).

An interesting study, made by Bentzen and Smith (2011), analyzed the effects of alcohol intake concerning the impact on cirrhosis mortality using data from sixteen European countries. Authors reveal that a lot of previous scientific works, realized in Europe, USA or Canada, identified a positive relation between alcohol consumption and liver cirrhosis mortality rates. Regarding the effects of politics aiming the decrease of alcohol consumption, some studies conclude that Authorities intervention leads to lower rates of liver cirrhosis deaths (in opposition, other researchers found that almost all negative alcohol consequences are decreasing, with the exception of liver cirrhosis). Information used by Bentzen and Smith (2011) in their analyze come from Austria, Belgium, Denmark, Finland, France, Greece, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Switzerland, Spain, Sweden and the UK (and the collected data cover the period between 1970 and 2006).

Based on panel data covering twenty-five years, at aggregate level of previously mentioned countries, authors concluded that, from individual perspective, liver cirrhosis is a consequence of sustained heavy drinking during several years. Other important result of Bentzen and Smith work consist in the fact that not only the excessive consumption of wine or spirits are directly related to death caused by liver cirrhosis but, also, the beer abuse.

In the last part of our review of the theories, scientific evidence and methodological approaches needed for our own analyze, we consider a study made in Hungary, concerning the risk of chronic liver disease because this country has similar problems with Romania from this view (it has one of the highest mortality rates for chronic liver disease and cirrhosis within Europe). Authors revealed that, in scientific literature, there are more factors considered as causes for chronic liver disease: quantity of alcohol consumed, its quality (in reverse, its

toxicity) but, also, tobacco use and, as an accelerator factor for liver disease, the viral hepatitis.

Considering that low socioeconomic status is another risk factor revealed by some field studies, Hungarian researchers had proposed to find out if the alcohol consumption, cigarette smoking, physical activity and hepatitis infection could explain the increased risk of chronic liver disease for the poor population from their country. Petrovski et al. (2010) revealed that Hungarian men, having 45 - 64 years, are confronting with higher risk for chronic liver disease / cirrhosis if they have problems with alcohol, they are heavy smokers (or former-smokers), they live alone, are separated or divorced or if they perceive their own financial status as bad or very bad. Authors reveal an important fact: marital status and education level had a powerful influence on the risk of chronic liver disease / cirrhosis even if behavioral factors analyzed in the study were controlled. Due to these circumstances, researchers suppose the existence of conducts or environmental characteristics directly related to socio-economic status which represent important risk factors for chronic liver disease (cirrhosis).

Because in the next part of our study we will discuss a lot about quantities of alcohol per capita or about Romania's consumption within European Union, we consider important to find more about the methods used for collecting information in international databases (by example, the EUROSTAT site or World Health Organization). In the research made by Popova, S., et al. (2007) regarding European countries alcohol consumption differences, the data were analyzed separately, for recorded and unrecorded quantities. From their results we select only the assertion that „ average consumption in central and eastern Europe is high with a relatively large proportion of unrecorded consumption ranging from one liter in Czech Republic and Estonia to 10.5 l in Ukraine" (ibid, p. 465). It is obvious that differences between recorded and unrecorded alcohol consumption are very important in some European countries and this fact can generate errors on comparative analysis.

In the Global status report on alcohol and health (World Health Organization 2011, p. 282)[9] it is revealed that:

The data is only as reliable as the original source data. This is illustrated by the fact that consumer surveys assessing people's self-reported alcohol consumption usually show overall consumption gures which are much lower, quite often from around 40–60% of supply-based estimates (i.e. data on the production and trade of alcohol). This would indicate that people are underestimating their own consumption and/or that these surveys do not reach the people with the highest consumption.

Our conclusion is that we must take into account possible systematic errors regarding the evaluation of alcohol drinking across different countries, because its informal consumption (production, distribution and consumption) is hard to

[9] World Health Organization, Global Status Report on Alcohol and Health 2011, http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf?ua=1, accessed in 4 November 2017

estimate and, also, because social values and attitudes regarding drink differ very much, so that responses to opinion polls will be more or less accurate, depending on respondents cultural specificity.

Analysis purpose

In our study we were interested to provide a description, as accurate as possible, about the alcohol consumption pattern of Romania and its harmful consequences by comparing with European countries, now and in the past period.

First, we tried to see, in European context, which is the level of alcohol consumption in Romania, in present and in last decades. We think that first descriptive step of our analysis is important both for the understanding of European issue of alcohol consumption evolution and for establish if our country follow the general trend (or one of the trends, taking into account the important differences between countries regarding the evolution, in time, of alcohol intake).

The second goal of our demarche was to highlight the effects of alcohol consumption in some European countries (including death rates of alcoholism co-morbidity) in last period of time and to find out Romania's position from these perspectives. Of course, we were interested to find if in our Country there are important threats related to alcohol harmful use and to see if negative consequences are correlated with the pattern of alcohol consumption or it's more probable to exist other explanations (by example, low quality of healthcare, high toxicity of beverages, frequent "binge drinking" episodes, etc.).

Methodological aspects

We used the secondary analysis of data provided by EUROSTAT[10] and World Health Organization[11], more precisely, Global Health Observatory Data Repository[12] with the purpose, already declared, of creating a data background useful for comparisons between the evolution of Romanian's pattern of alcohol consumption (considering, also, its harmful consequences) and those characterizing the others European countries

[10] EUROSTAT, http://ec.europa.eu/eurostat/web/main, accessed in 4 November 2017

[11] World Health Organization, http://www.who.int/en/, accessed in 4 November 2017

[12] Global Health Observatory Data Repository, http://apps.who.int/gho/data/node.main-euro.GISAH?lang=en&showonly=GISAH, accessed in 4 November 2017

Results

Levels and patterns of alcohol consumption

In the first place, we present the evolution of medium alcohol consumption, for people having at least 15 years, for several European countries, between 1961 and 2014 *(Figure 1)*. We analyzed data provided by World health Organization through its „Global Information System on Alcohol and Health" (choosing the item „levels of Consumption", Figure nr. 1)[13] We can see, on one hand, that there are important differences between medium levels of alcohol drinking from a country to another and, on the other hand, that alcohol consumption patterns have changed very much from 1961 to 2014, especially in the countries where the initial levels were very high. We must highlight, for better understanding presented information, that all countries has been hierarchized (regarding total alcohol consumption) depending on the medium level of pure substance per capita consumed in the entire period between 1961 and 2014. From this perspective, Romania occupies the 12 position, in ascending order, among the 29 countries which were considered (position that indicate moderate alcohol consumption, at European level, for the five decades examined). We think that a more important aspect than the medium alcohol consumption, for last 5 decades, is represented by the trends that we can identify for the evolution of this phenomenon.

We can see that countries like France, Luxembourg, Portugal, Spain or Italy had, in the past, highest level of alcohol consumption but the quantities decreased almost constantly until 2014.

Other countries (from the north of Europe – Norway, Iceland or Finland) are characterized by a low global level of alcohol consumption but their trends are ascendant (without reaching the average level in 2014). Similar ascendant evolution, but reaching the average level from 2014, we can find in Poland, Russia, Romania, United Kingdom and Bulgaria.

At global level (29 countries), we can state that patterns of alcohol consumption along 5 decades, tend towards similarity, even if it still exists important differences between some countries.

In Romania, in last 5 decades, alcohol consumption increased from a low level toward a medium one, fact due, mostly, to the changes between 1961 and 1985 (after 1985, drinking quantities fluctuates slightly around the average).

If we refine our analysis by taking into account medium level for alcohol consumption in each of past years (2003-2014)[14], we observe that our country is characterized by a slightly ascendant trend, especially between 2003 and 2008.

[13] WHO, Global Information System on Alcohol and Health (GISAH), levels of Consumption, http://apps.who.int/gho/data/node.main.A1026?lang=en accessed in 4 November 2017

[14] WHO, Global Information System on Alcohol and Health (GISAH), levels of Consumption, http://apps.who.int/gho/data/node.main.A1026?lang=en accessed in 4 November 2017

Regarding the 5 decades taken into account, our country occupied the 9th position between the 29 countries in ascending order of medium alcohol consumption but, regarding the period between 2003 and 2014, its place became the 11th (and if we refer only at the year 2014, Romania has medium alcohol consumption, and occupy 12th place). In addition, we must note, that the highest level of alcohol drinking, in our country, was registered in 2008 (best economic period for Romania and for EU, in generally) and then the ascendant trend changed in a slight decline.

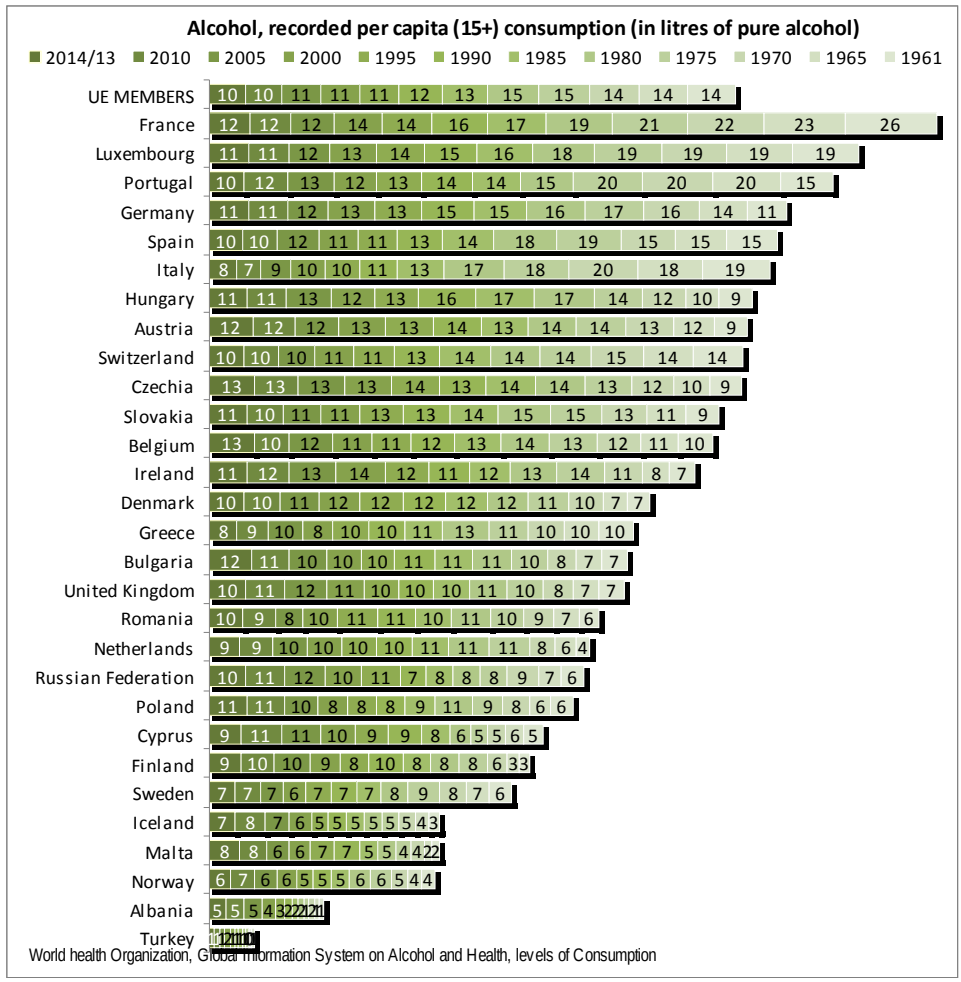


Figure nr. 1 Medium pure alcohol consumption per capita (1961-2014), population 15 years or more

The pattern of decline or stabilization of the consumption is characteristic not only for our country but for almost all which we had analyzed. We can assume that economic problems had faced European countries and their citizens, led to the decrease of all type of consumption, including that of the alcohol beverages.

If we take into account, this time, the unregistered consumption of alcohol, the European situation and, in particular, that from our country is changing a lot (at least between 2005 and 2015, period for which information are available – see Figure nr. 2)[15]. With respect to unrecorded quantity of alcohol per capita, in 2015, Romania ranks fourth, after the Republic of Moldova, Ukraine and the Russian Federation. We highlight that, for the mentioned period, the unregistered quantities had significant declines, especially in the Republic of Moldova, which decreased its consumption from the spectacular 10 l per capita in 2005 to 6.5 l in 2015.

The summation of recorded and unregistered quantities of alcohol generates significant changes in the European hierarchy, including the rank of our country. In 2015, Romania, with an estimated consumption of between 10 and 15.5 liters, ranks 6th in the European hierarchy of alcohol per capita consumption after the Republic of Moldova (between 15.5 and 19.4 liters), Belarus, Lithuania, Russia and Czech Republic[16].

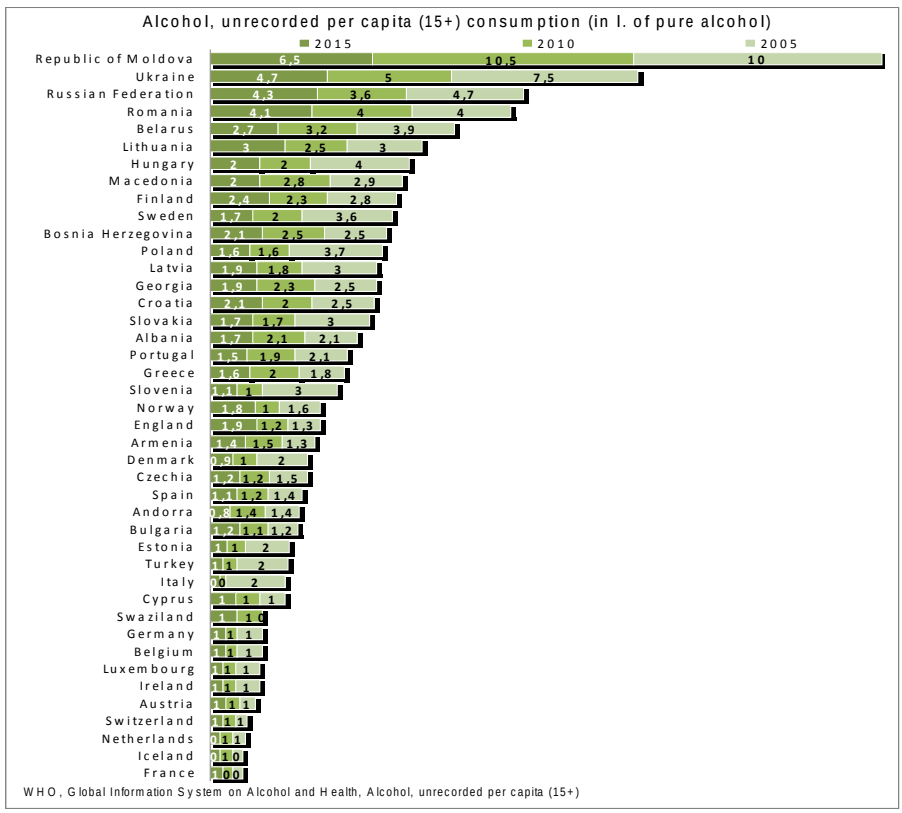


Figure nr. 2 Alcohol, unrecorded per capita (15+) consumption (in l. of pure alcohol)

[15] WHO, Global Health Observatory Data Repository, GISAH, Unrecorded consumption by country, http://apps.who.int/gho/data/view.main.52320, accessed in 10 November 2017

[16] WHO, GISAH, Alcohol, total per capita (15+) consumption (in liters of pure alcohol), projections to 2025, http://apps.who.int/gho/data/view.main.57015, accessed in 10 November 2017

The second aspect regarding the patterns of alcohol consumption that we want to reveal refers to the proportion of people who declare themselves abstinent**.** We present the results of a study made in 2010 by World Health Organization (see Figure nr. 3)[17] which evaluate the proportion of people who did not drink alcohol in the last 12 months (obviously, data were obtained by self-report). There are a few countries with high level of abstinence: Turkey, Albania, Poland, Portugal and Malta. Romania occupy 7th place by descending proportion of people who did not drink past 12 month, joining a group of similar countries by this view: Greece, Bulgaria, Italy, Austria, Finland, Russia, Iceland Slovakia and Spain. Lowest proportions of abstainers, (in this order), were identified in France Luxemburg, Cyprus, Netherlands, Norway and Denmark.

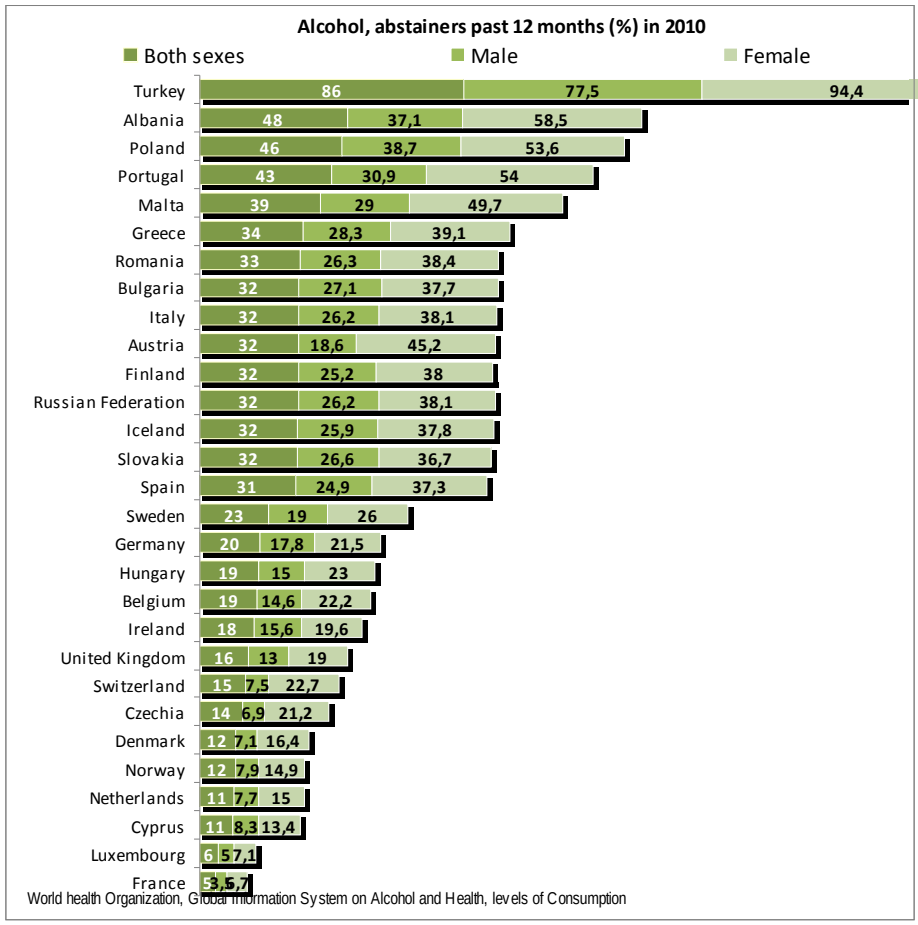


Figure nr. 3 Alcohol abstainers past 12 month, by sex, in 2010

[17] WHO, Global Health Observatory Data Repository, GISAH, Alcohol abstainers past 12 month (%), http://apps.who.int/gho/data/node.main.A1042?lang=en accessed in 12 November 2017

The third aspect regarding differences between alcohol consumption patterns of European countries which can be analyzed using the Global Information System on Alcohol and Health (World Health Organization) consist in the proportion of people who had an "alcohol, heavy episodic drinking" past 30 days (see *Figure nr. 4*)[18]. Information is transversal, as the previous ones, and also refers to the year 2010. We dispose on data from the same 29 countries, fact that sustains comparison between countries.

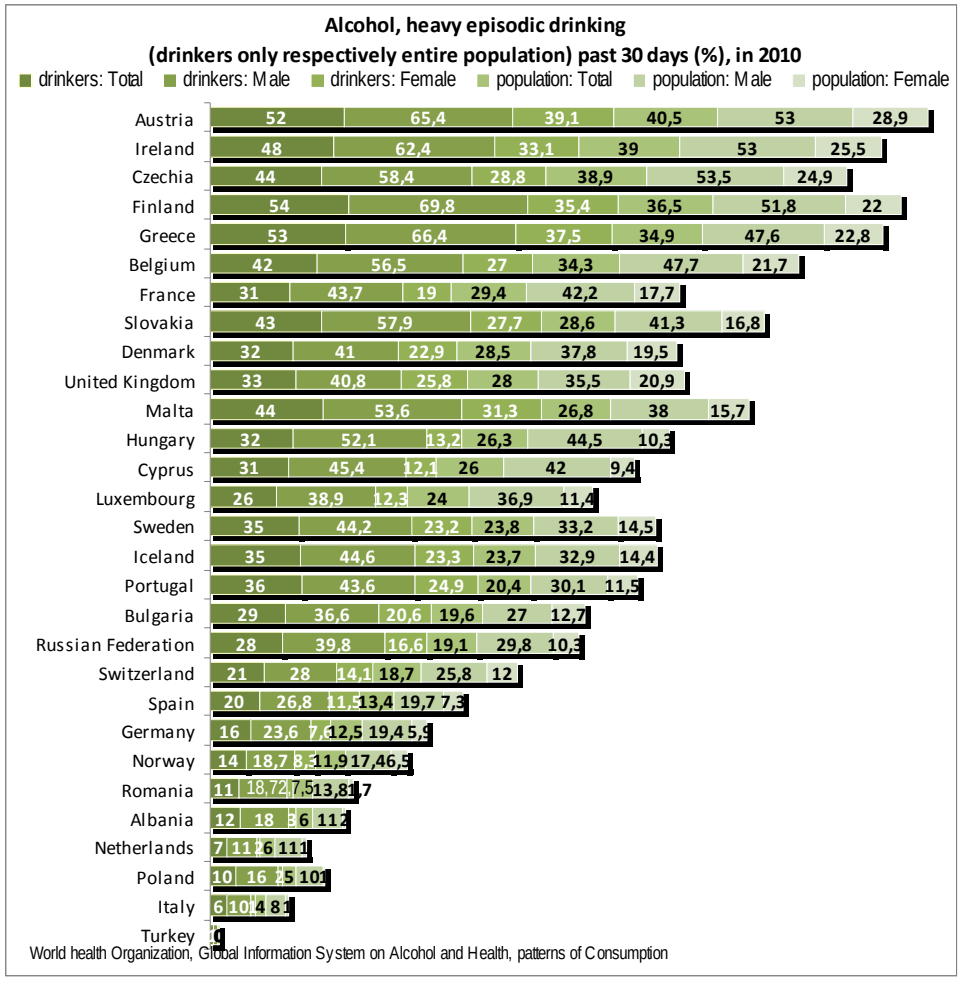


Figure nr. 4 Alcohol, heavy episodic drinking (drinkers only respectively entire population) past 30 days (%), in 2010

[18] WHO, Global Health Observatory Data Repository, GISAH, Heavy episodic drinking, past 30 days by country, http://apps.who.int/gho/data/node.main.A1047?lang=en, accessed in 12 November 2017

The proportion of people having "heavy episodic drinking" on past 30 days was calculated in two ways: by reporting to the entire population, respectively to persons which consumed alcohol during that period. We note that, in accordance with the definition[19], "heavy episodic drinking" means to consume at least 60 grams or more of pure alcohol, at one occasion.

With respect to the proportion of people having "heavy episodic drinking" within the entire population, following countries have highest levels (in descending order): Austria, Ireland, Czech, Finland, Greece and Belgium. Romania, occupying the 6th place, counting from the lowest proportion of "heavy episodic drinking", is part of the following group: Italy, Poland, Netherlands and Albania (Turkey is also included, but here excessive consumption is almost absent).

We note that in every European culture males have a higher proportion of "heavy episodic drinking" than females, especially in countries with moderate share of excessive consumption.

Unfortunately, we did not have access to other relevant data about the European countries on their patterns of alcohol consumption (neither about the present, nor regarding their evolution, over time). So, we present, further, the second part of our study dedicated to some aspects related to excessive alcohol consumption pointing, again, Romania position in European context (both from longitudinal and transverse perspective).

Alcohol abuse comorbidity

There are a lot of consequences of alcohol abuse presented by EUROSTAT regarding especially the last decade and, so, we will illustrate only the aspects that are particularly interesting from our country perspective.

Mental and behavioral disorders due to use of alcohol are presented in the EUROSTAT database as proportion of patient which were released, in a year, with the previously indicated diagnosis, for the period 2002-2015 (European Commission, EUROSTAT, Statistics, Browse / Search database[20]). Comparing the 28 countries according to the incidence of the discharge diagnosis from 2014, Romania occupies the 8th position in the ascending order of the incidence for Mental and behavioral disorders due to use of. Romania's trend regarding the incidence of Mental and behavioral disorders due to use of alcohol, is fluctuant: values descend until 2005 and, after that, they are slowly rising with a maximum in 2009, followed by a further decline until 2013 (after that, the rates seem to stabilize). We must add that highest rate of psychological disorders due to alcohol is cha-

[19] WHO, Global Health Observatory visualizations, Indicator Metadata Registry, Alcohol, heavy episodic drinking (population) past 30 days, http://apps.who.int/gho/data/node.wrapper.imr?x-id=459, accessed 12 November 2017

[20] Hospital discharges by diagnosis (ISHMT) and NUTS 2 regions, in-patients, per 100,000 inhabitants Total., Mental and behavioural disorders due to use of alcohol, http://ec.europa.eu/eurostat/web/products-datasets/-/hlth_co_disch2, accessed in 12 November 2017

racteristic, with priority, to countries with highest standard of living where, probably, the quality of medical care is very good (and physical aspects of alcohol misuse comorbidity are treated with much more success that in other countries). From the first 12 countries with highest rates of patients with diagnose of Mental and behavioral disorders due to use of alcohol, Germany (first place), Finland, Luxembourg, Sweden, Austria, Norway, Switzerland and Denmark have a high standard of living. The countries that share the same alcohol problem but have much lower GDP are Latvia, Lithuania, Poland, and Slovakia.

We note that countries with lowest proportion of patients diagnosed with Mental and behavioural disorders due to use of alcohol are, in ascending order of the incidence, the following: Cyprus, Italy, Portugal, Spain, Ireland, Bulgaria and United Kingdom (as we mentioned, Romania occupy, in this hierarchy, 8th position).

Regarding the incidence of alcoholic liver disease (see *Table 1*)[21], measured by the number of patient discharged with this diagnosis, Romania occupy, in present, the first place at large distance from the others countries.

It is significant, we believe, the strong rise, between 2002 and 2009 of alcoholic liver disease rate in Romania, followed by a decrease until 2015 but toward a value three times bigger than in 2002.

Countries with the highest incidence of alcoholic liver disease are, in descending order after Romania: Hungary, Finland, Croatia, Germany, Slovenia, Slovakia and Portugal, Poland, Denmark, Luxembourg and Czech Republic.

We can see that only Germany, Finland, Denmark, Poland, and Slovakia are part of the groups of countries ranked on first 12 position both for “Mental and behavioral disorders due to use of alcohol” and for “alcoholic liver disease”.

In Turkey, Cyprus, Bulgaria, Iceland, Malta, Norway, Sweden and Ireland were found lowest incidences of Mental and behavioral disorders due to use of alcohol (countries ranked depending on increasing order of the rates).

Of course, we must ask how it can be explained this huge difference between Romania and other European countries regarding the rate of alcoholic liver disease, considering that previous statistics show Romanians as moderate alcohol consumers and have rare episodes of excessive consumption. Before making explanatory speculation, we must take into account two aspects: the alcohol consumption that is not recorded, and who can be even more harmful due to its potential toxicity and, second, the proportion of „Alcohol dependence” which represent the rapport between the number of adults (18-65 years) with the previously mentioned diagnosis during a calendar year, and the resident population (15+ years) over the same period.

[21] European Commission, Eurostat, Statistics, Browse / Search database, Hospital discharges by diagnosis, in-patients, per 100 000 inhabitants [hlth_co_disch2], in-patients (total number), Alcoholic liver disease, accessed in 14 November 2017

Table 1. Alcoholic liver disease, Hospital discharges by diagnosis (ISHMT) and NUTS 2 regions, in-patients, per 100,000 inhabitants

GEO/AGE	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Turkey	:	:	:	:	:	1.2	1.1	1.5	1.5	1.3	:	:	1.1	**1.1**
Cyprus	1.4	1.1	1.6	1.6	1.4	1.0	2.4	3.3	3.0	2.1	2.8	2.3	3.0	**3.0**
Bulgaria	:	:	:	27.0	1.5	1.7	0.4	0.6	0.6	5.2	5.8	6.6	7.6	**7.6**
Iceland	5.2	4.5	3.1	4.7	4.9	5.5	:	12.6	:	:	:	:	7.6	**7.6**
Malta	:	:	5.7	7.4	8.6	2.2	5.3	6.0	11.3	12.3	7.4	7.1	7.7	**7.7**
Norway	14.9	16.6	18.0	16.1	19.2	20.3	20.2	17.8	17.8	15.9	15.1	16.1	15.8	**15.8**
Sweden	17.8	18.8	20.5	20.2	20.4	20.0	20.3	17.4	18.6	:	:	17.8	18.7	**18.7**
Ireland	19.2	17.6	19.8	25.3	25.6	26.4	23.9	22.6	22.1	21.9	22.1	20.4	19.2	**19.2**
Latvia	:	:	14.4	17.5	20.9	27.7	20.9	16.6	15.5	20.3	20.6	22.0	20.1	**20.1**
Italy	35.9	33.7	33.4	32.3	32.1	30.5	28.2	26.6	25.8	24.5	23.5	21.7	20.6	**20.6**
Spain	10.7	12.3	27.4	26.2	27.0	25.2	26.1	24.7	24.0	23.5	22.3	22.0	21.6	**21.6**
Lithuania	24.0	19.6	17.6	18.2	22.1	31.0	31.0	23.1	24.0	23.9	25.5	26.7	21.8	**21.8**
Switzerland	19.2	17.8	18.1	18.7	18.4	16.8	17.5	19.4	20.6	21.0	21.3	21.6	22.1	**22.1**
Austria	34.2	33.1	30.1	27.2	25.8	26.9	25.5	26.2	28.7	24.8	25.3	28.3	27.4	**27.4**
France	48.9	45.7	42.0	42.6	42.0	40.3	39.1	34.8	32.9	31.9	30.6	29.4	27.8	**27.8**
UK	23.8	25.4	26.9	28.0	28.7	28.9	28.9	29.5	30.2	30.6	29.2	29.3	29.9	**29.9**
Belgium	38.6	38.8	38.3	39.0	38.2	36.2	35.0	34.0	:	33.6	34.0	34.6	32.7	**32.7**
Estonia	:	48.3	49.1	51.8	50.6	62.0	59.0	44.2	40.6	37.4	34.7	36.0	32.9	**32.9**
Czech R.	39.2	39.5	40.3	39.7	37.6	40.6	40.9	39.8	40.6	39.0	40.9	36.1	37.0	**37.0**
Luxembourg	70.4	64.2	52.2	58.5	58.2	42.5	38.9	44.2	42.6	42.8	45.0	38.5	37.4	**37.4**
Denmark	31.1	32.4	31.9	31.6	35.9	37.1	36.2	37.0	40.0	42.2	37.8	36.7	38.1	**38.1**
Poland	:	18.3	20.4	18.7	21.4	24.8	29.6	36.0	34.2	35.9	35.8	36.1	38.1	**38.1**
Portugal	60.8	60.5	56.9	55.5	54.3	52.5	48.9	44.9	44.7	45.8	44.4	40.8	38.2	**38.2**
Slovakia	33.1	33.6	30.2	30.0	31.8	35.6	38.3	33.6	32.2	29.4	30.4	:	38.8	**38.8**
Slovenia	:	:	62.6	49.9	47.7	51.4	57.9	54.3	51.6	49.2	47.2	43.6	39.5	**39.5**
Germany	33.9	37.3	39.6	42.9	43.0	43.2	44.8	46.0	45.7	46.2	45.6	46.1	47.0	**47.0**
Croatia	47.4	47.9	38.5	40.4	43.9	45.6	46.6	59.0	56.8	52.5	44.8	44.6	47.0	**47.0**
Finland	41.5	41.9	48.7	58.0	54.1	53.4	53.4	53.5	54.0	52.6	50.7	48.7	49.9	**49.9**
Hungary	:	:	125.4	121.6	114.2	95.1	89.5	84.8	75.9	64.6	56.0	48.2	51.8	**51.8**
Romania	31.9	68.1	107.6	118.4	157.1	165.5	150.2	165.8	151.9	109.7	100.3	92.9	86.9	**86.9**

Unfortunately, we don't have longitudinal data and the transverse ones refer to year 2010. However, Romania had one of lowest Alcohol dependence rate occupying place 4, after Italy, Spain and Turkey (in ascending order of alcoholism rate)[22]. The highest proportion of alcohol addicted person, in descending order of the rates, are living in the following countries: Hungary, Slovenia, Norway, England, Slovakia, Estonia, Lithuania, Austria and Sweden.

The fact that Romanians drink much more than they say does not help us to find the real consumption patterns (probably dangerous) that could justify the very high incidence of alcoholic liver disease. Of course, we can ask whether a high number of undiagnosed alcoholics in our country could explains the whole difference between Romania and other European countries, or there may be a more general aspect that influences the incidence of all types of liver disease.
If we are searching in Eurostat database, we can see that in our country the rate of liver disease caused by something else than alcohol has enormous values

[22] WHO, GISAH, Alcohol dependence (15+), 12 month prevalence (%), http://apps.who.int/gho/data/view.main.53030, accessed in 14 November 2017

comparing to other European countries (See *Table 2*)[23]. It is possible that the problems to access professional health care, which are characteristic to a large part of Romanians and the general difficulty to diagnosis for C hepatitis, explain, partially, that in our country we have the highest incidence of liver diseases. We can add, also, the low quality of cheap alcoholic beverages which often aren't verified regarding the level of toxic substances (and, probable, the toxicity of some artisanal distillated alcoholic beverages).

Other countries with high incidence of liver disease (not caused by drinking) are Bulgaria (having half of Romanian rate), followed by Lithuania, Poland and Slovakia (5 times lower rate that in our country). We found lowest rate of liver disease (not caused by alcohol) in following countries, ranked by ascending rates: Iceland, Ireland, United Kingdom, Cyprus, Turkey, Switzerland, Sweden and Norway.

Table 2. Other diseases of liver, Hospital discharges by diagnosis (ISHMT) and NUTS 2 regions, in-patients, per 100,000 inhabitants

GEO/AGE	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Iceland	18.1	14.9	21.9	19.5	18.4	20.9	:	21.4	:	:	:	:	**14.4**	8.5
Ireland	25.6	23.8	23.4	20.7	21.7	20.3	19.9	19.4	16.5	17.7	18.5	18.3	**19.2**	20.1
England	16.7	16.9	17.2	19.0	19.1	19.0	19.6	20.5	21.6	22.8	21.9	22.2	**23.1**	24.3
Cyprus	18.3	17.0	10.9	12.7	12.4	14.0	13.7	13.5	21.0	12.5	12.0	21.2	**24.0**	18.8
Turkey	:	:	:	:	:	28.4	27.5	32.7	34.3	32.7	:	:	**25.5**	26.1
Switzerland	22.4	21.5	22.3	22.2	23.1	23.9	25.7	24.5	25.2	26.3	25.5	26.2	**25.7**	27.4
Sweden	25.3	26.9	27.2	26.5	25.5	27.7	26.1	25.7	27.1	:	:	27.3	**27.5**	26.5
Norway	25.0	27.9	28.7	27.0	27.6	28.1	30.1	31.0	28.5	26.2	27.7	28.1	**30.1**	32.1
Slovenia	:	:	41.8	39.3	41.0	41.7	39.7	33.4	35.0	30.4	30.7	27.8	**31.1**	32.9
Belgium	32.8	34.5	33.8	31.1	30.3	30.7	33.0	30.8	:	32.3	33.3	32.4	**31.6**	:
Portugal	32.0	31.9	31.4	32.1	30.3	31.3	30.8	29.0	30.3	30.4	30.6	32.3	**31.6**	33.9
Luxembourg	72.4	71.1	74.2	63.0	54.6	50.4	48.7	54.0	46.0	39.4	39.0	37.7	**33.6**	29.8
France	36.6	35.0	33.9	32.7	33.5	32.1	33.1	32.5	33.7	32.8	33.0	33.2	**33.8**	34.7
Finland	34.4	34.7	38.9	36.4	40.1	37.6	38.6	39.8	40.3	37.7	36.4	34.6	**34.6**	31.6
Malta	:	:	7.7	8.7	8.4	3.2	8.3	17.9	32.8	26.9	33.1	34.5	**34.9**	28.0
Croatia	58.4	60.1	61.9	54.4	49.1	43.8	39.4	36.5	31.7	36.5	33.7	37.6	**37.6**	40.4
Denmark	32.5	32.0	31.9	36.2	37.9	39.2	38.4	43.0	44.5	44.7	43.3	43.5	**43.3**	:
Spain	31.3	30.6	59.3	56.8	55.4	53.3	52.9	51.8	49.7	47.6	44.0	43.1	**43.5**	40.2
Czech Rep.	66.9	69.4	66.0	66.7	60.0	59.4	56.4	51.0	48.8	47.8	44.9	43.6	**44.0**	40.5
Latvia	:	:	62.4	64.6	58.4	61.7	55.6	47.9	46.2	65.9	56.2	56.3	**57.5**	60.9
Germany	63.8	65.7	61.4	56.2	54.7	53.9	54.9	53.9	56.3	56.9	58.4	59.2	**61.1**	61.1
Hungary	:	:	91.0	93.7	93.7	77.2	77.2	74.8	71.3	68.3	66.7	66.1	**65.3**	64.3
Italy	134.8	128.1	124.3	118.8	116.6	109.3	102.9	93.9	89.9	82.5	79.3	71.9	**67.2**	62.6
Austria	110.3	123.1	119.8	108.3	101.5	97.5	94.3	89.1	84.1	86.6	84.3	80.0	**79.0**	75.3
Slovakia	131.2	110.6	88.6	90.4	92.0	87.0	93.7	91.0	93.3	85.7	96.8	:	**81.9**	82.6
Poland	:	67.2	76.5	65.5	71.6	67.0	61.7	70.0	71.3	72.0	73.2	73.3	**82.6**	83.7
Lithuania	61.3	67.7	75.6	87.7	100.1	103.5	101.5	90.1	89.9	89.7	79.6	78.8	**83.6**	77.7
Bulgaria	:	:	:	97.6	128.6	131.1	151.3	173.9	182.7	172.9	188.6	215.8	**234.7**	228.8
Romania	505.8	362.0	337.3	289.0	310.1	304.1	346.1	408.5	415.8	399.5	419.6	444.1	**418.4**	424.1

[23] European Commission, Eurostat, Statistics, Browse / Search database, Other diseases of liver, Hospital discharges by diagnosis (ISHMT) and NUTS 2 regions, in-patients, per 100,000 inhabitants http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_co_disch2&lang=en, accessed in 14 November 2017

In what concern the injuries and poisonings due to alcohol consumption (hospital discharges by diagnosis at 100.000)[24], Romania has a medium position which didn't change significantly during monitored period (but information must be treated skeptically because it refers to years 2000-2006). Austria had, clearly, the highest rate of injuries and poisonings due to alcohol drinking, followed, at lower levels but similar to each other, by Latvia, Lithuania, Finland, Germany, Denmark, Norway and France (in ascending order of the rates). Injuries and poisonings due to alcohol had lowest frequency in Portugal, Serbia, Malta, Netherlands and Spain (in ascending order of the incidence).

It is important to highlight that the large differences which exist between countries could be related not only to real disparities in the frequency of "heavy episodic drinking" but, also, to the methodology used, in hospitals, to register "alcohol-related injuries and poisoning" (people can hide the cause of their wounds if alcohol abuse is highly undesirable in their own culture).

Death rate due to alcohol abuse

We will refer, further, to the death rate determined by alcohol consumption. If we are taking into account the proportion of road traffic fatalities involving alcohol consumption by reporting to all deadly car accidents (for 2000-2008)[25], Romania occupy a middle position with a share of 8.7% in 2008 but had an important constant increase from 2000 to 2008 (9 times).

Lowest proportion of fatal car accidents involving alcohol consumption (by reporting to all accidents) we find in Netherlands, Bulgaria, Italy, Slovakia, Portugal and Belgium. The highest proportions are characteristic to Estonia, Slovenia, France, Finland, Denmark and Cyprus (3-5 times bigger that in Romania).

We must note that there are large differences between countries: Estonia, situated on the first place, has an enormous percent of 42% and Netherlands, on the lowest position, is characterized by only 3.7%. We can only suppose that these very important differences between countries depend on the legislation regarding alcohol consumption while driving the car, on social policies and, also, on mass-media campaigns aiming the promotion of responsible driving behavior.

We will continue our demarche by analyzing, strictly speaking, death rate due to comorbidities of alcohol abuse with reference, in the first place, to mental and behavioral disorders[26]. Our country occupies a medium-low place with respect to

[24] WHO, GISAH, Hospital discharges, alcohol-related injuries and poisoning, per 100,000 https://www.econdb.com/dataset/SA_0000001465/hospital-discharges-alcohol-related-injuries-and-poisoning-per-100000/, accessed in 14 November 2017

[25] WHO, Global Health Observatory data repository, Fatal alcohol-related road traffic crashes, %, by country, http://apps.who.int/gho/data/view.main.53830, accessed in 14 November 2017

[26] European Commission, Eurostat, Statistics, Browse / Search database, Mental and behavioural disorders due to use of alcohol, Standardized death rate, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_cd_asdr2&lang=en, accessed in 14 November 2017

death rate due to mental and behavioral disorders caused by alcohol abuse. It is important to highlight that Romania's death rate had a strong decrease between 2000 and 2014. At opposite, Denmark, Latvia, Germany, Austria, Luxembourg, Estonia, Finland and France had the highest death rate attributable to mental and behavioral disorders due to alcohol misuse. Other countries that had low death rate due to mental and behavioral disorders caused by alcohol misuse are, in ascending order of the registred values, Greece, Ireland, Bulgaria, Iceland and Spain (folowed by our country)

The position occupy by Romania, between the other countries, is completely different when we are talking about death rate caused by liver disease (see Figure 5)[26].

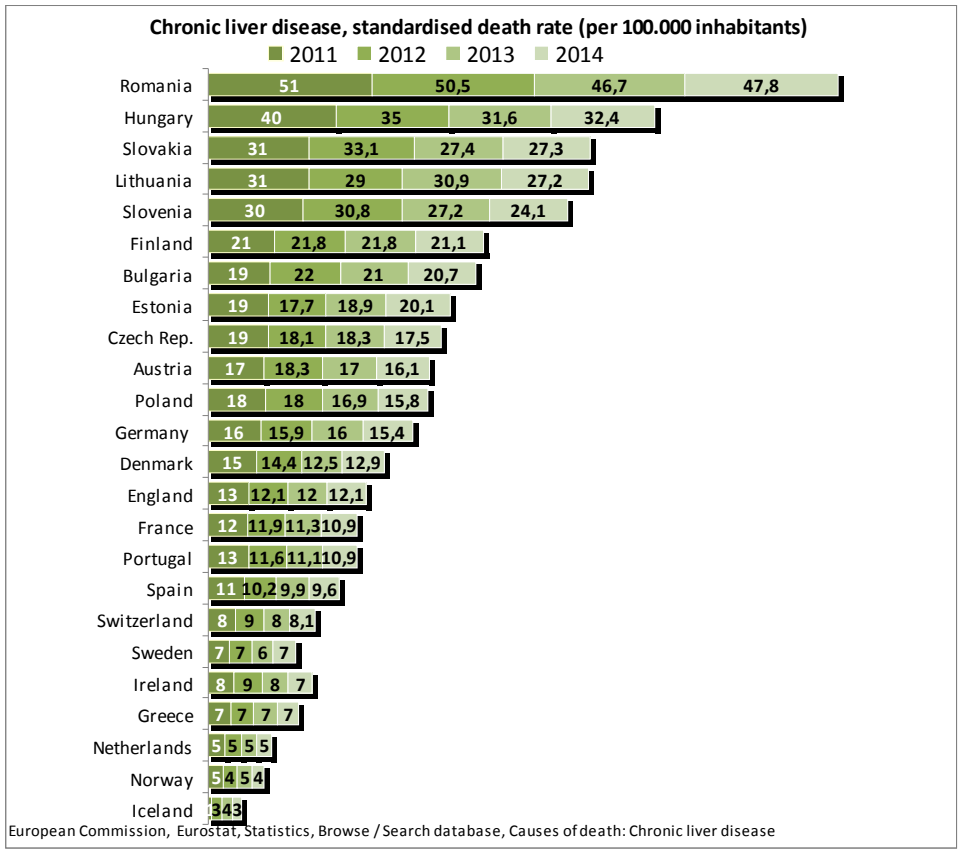


Figure 5. Causes of death: Chronic liver disease Standardized death rate (per 100.000 inhabitants)

[27] European Commission, Eurostat, Statistics, Browse / Search database, Causes of death: Chronic liver disease Standardized death rate, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_cd_asdr2&lang=en, accessed in 14 November 2017

In concordance with the very high incidence of liver disease (associate or not with alcohol misuse), our country have the highest rate of death due to this kind of illness (and Hungary is the following, at little distance). We must add that between 2000 and 2014 the mentioned death rate remains almost constant for Romania but for Hungary it slowly decreases.

Countries with high death rate due to alcohol misuse, beside Romania and Hungary, are, in decreasing order of the values recorded in 2014, Slovakia Lithuania Slovenia Finland Bulgaria and Estonia. Regarding opposite situation, the lowest death rates were registered, by increasing order of the vales, in Iceland, Norway, Netherlands, Greece, Ireland and Sweden.

Discussions

Generally, for EU members' states, registered alcohol consumption had a decreasing trend between 1961 and 2014, but changes in the amount of alcohol per capita differed greatly, depending on the level at the beginning of the period (typically, countries with a high initial consumption had a downward trend and the others, an upward trend). In the period 2003-2014, we can identify, globally, a tendency to stabilize consumption, with fluctuations often having a peak in 2008, (the moment of economic "boom"). In this context, the alcohol consumption in our country had a moderate level, enrolling in the upward trend until 1985, followed by fluctuations around the value of 10 l per capita (close to the EU average in 1995-2014)

If we are taking into account unrecorded alcohol consumption, countries like Republic of Moldova, Ukraine and the Russian Federation are characterized by the highest quantities, followed by Romania, which was evaluated, in 2015, as occupying the 6th place, from all European countries. We note that this classification depends on total alcohol consumption per capita (the sum of recorded and unrecorded quantities).

The Romanians declared, at the same time, a relatively high level of abstinence and a low proportion of people having excessive consumption of alcohol in the last 30 days. These data may be consistent with a high overall consumption (in 2010) only if they are strongly biased or if the daily consumption of the Romanians (during the meals, for example) is generally high.

Talking further about the effects of alcohol abuse, the most striking aspect is the extreme high incidence of liver disease due to alcohol while the registered proportion of alcoholics is very low in Romania (true, however, that the information refers to 2010). Our country was characterized, also, by moderate rates for "Mental and behavioral disorders due to the use of alcohol" and for "Hospital discharges, alcohol-related injuries and poisoning", which would suggest, again, moderate consumption and low frequency of "heavy episodic drinking".

Referring, now, to the fatal effects of inappropriate alcohol consumption, we point out that Romania had a moderate (but upward) proportion of "Road traffic

fatalities involving alcohol" (between 2000 and 2008). It also has a low mortality rate (decreasing between 2000 and 2014), attributable to "Mental and behavioral disorders due to use of alcohol".

Consistent with the highest incidence of liver disease caused by alcohol or other causes, in Romania the mortality rate due to "chronic liver disease" ranks first among European countries and remains relatively constant between 2000 and 2014.

Conclusions

The relation between alcohol consumption evolution and changes, over time, on death rate due to alcohol abuse, is hard to establish especially because of the incertitude related to statistical data collection. If we take into account both recorded and unrecorded quantities of alcohol per capita consumption, the image, at European level (at least between 2000 and 2015), change a lot. If we consider the entire quantity of alcohol consumed in Romania, we can make connections with the high incidence of alcoholic liver disease and the high death rate due to chronic liver disease. But, there is a problem: we cannot expect that a change in consumption to be passed on immediately toward the level of death rate. Unfortunately, we don't have data regarding the real alcohol consumption of European countries before 2005. We can only assume that if in 2005-2015 Romanian alcohol consumption was one of the highest and, between 1990 and 2005, the recorded quantity of alcohol per capita was quasi-constant, then our country was characterized by high level of drinking in the entire period 1990-2015.

We must take into account, also, the fact that, in Romania, other harmful short or long-term effects of alcohol consumption had a low or moderate level and different patterns of evolution. We believe that global judgments regarding the effect of alcohol consumption evolution on the changes of its harmful effects (incidence of related illness and their death rate) should rely on valid data, which refers to all relevant aspects of the issue put into discussion. In our country, we think that the poverty, lack of (medical) education, the difficult access to medical services, the toxicity of cheap alcohol from stores or produced in household without any quality tests are aspects as important as the quantity of alcohol consumed in the attempt of explain huge incidence of liver disease and their attributed mortality.

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