

# National survey

on life styles of  
citizens in Serbia  
2014

substance use  
and gambling



INSTITUTE OF PUBLIC HEALTH OF SERBIA  
"Dr Milan Jovanovic Batut"



emcdda

## Implementation of Strategy for Fight against Drugs

Supply and Demand Reduction Components

This Twinning Project is financed by the European Union





# **National Survey** on life styles of citizens in Serbia 2014

substance use and gambling

In 2014, the National Survey on life styles of citizens in Serbia 2014 was carried out by the Institute of Public Health of Serbia with the support of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) - within its European Union financed IPA project 2011 / 280 - 057 "Preparation of IPA Beneficiaries for their participation with the EMCDDA" - and the Twinning project SR 10 IB JH 02 "Implementation of Strategy to Fight Against Drugs (supply and demand reduction components)". The data collection phase was performed by the IPSOS agency.

National Survey on life styles of citizens in Serbia 2014  
Key findings on substance use and gambling

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# National Survey

on life styles of citizens  
in Serbia 2014

**Key findings on substance use and gambling**

**June, 2014**



## List of Abbreviations

<b>BSQF</b>	Beverage Specific Quantity Frequency Method
<b>CAPI</b>	Computer Assisted Personal Interviewing
<b>CAST</b>	Cannabis Abuse Screening Test
<b>CI</b>	Confidence Interval
<b>CPGI</b>	Canadian Problem Gambling Index
<b>EMCDDA</b>	European Monitoring Centre for Drugs and Drug Addiction
<b>EMQ</b>	European Model Questionnaire
<b>EU</b>	European Union
<b>GPS</b>	General Population Survey
<b>IDUs</b>	Injecting Drug Users
<b>NEP</b>	Needle Exchange Program
<b>OST</b>	Opioid Substitution Therapy
<b>PAS</b>	Psycho-Active Substances
<b>PDU</b>	Problem Drug Use
<b>PGSI</b>	Problem Gambling Screening Index
<b>PPS</b>	Probability Proportional Sampling
<b>RAPS</b>	Rapid Alcohol Problems Screen
<b>RSOD</b>	Risky Single-Occasion Drinking
<b>SMART</b>	Standardizing Measurement of Alcohol Related Troubles

# Contents

<b>FOREWORD</b> .....	<b>7</b>
<b>SUMMARY OF RESULTS</b> .....	<b>9</b>
<b>1. INTRODUCTION</b> .....	<b>11</b>
<b>2. DESIGN AND METHODOLOGY</b> .....	<b>12</b>
2.1 Research tool .....	14
2.1.2 Problem alcohol screening test (RAPS4) .....	15
2.1.3 Harms related to alcohol .....	15
2.1.4 Cannabis Abuse Screening Test (CAST).....	16
2.1.5 Problem gambling screening index.....	16
2.1.6 Lie/bet screen.....	17
2.1.7 Kessler 6 scale for psychological distress.....	17
<b>3. PREVALENCE AND PATTERNS OF SUBSTANCE USE IN THE GENERAL POPULATION</b> .....	<b>18</b>
3.1 Prevalence of substance use .....	18
3.2 Patterns of alcohol consumption .....	22
3.3 Intensive and problematic forms of substance use .....	28
<b>4. ESTIMATES OF PROBLEM DRUG USE</b> .....	<b>34</b>
4.1 Estimates based on population prevalence rate.....	35
4.2 Estimates based on multiplier method.....	36
<b>5. PERCEIVED AVAILABILITY OF DRUGS</b> .....	<b>39</b>
<b>6. OPINIONS AND PERCEIVED RISKS</b> .....	<b>40</b>
6.1 Opinions on social problems and alcohol policy measures in Serbia.....	40
6.2 Attitudes towards drug use and drug users .....	42
<b>7. COMPARISON ON SUBSTANCE USE WITH OTHER EUROPEAN COUNTRIES</b> .....	<b>44</b>
<b>8. GAMBLING</b> .....	<b>50</b>
<b>9. MENTAL HEALTH</b> .....	<b>54</b>
<b>BIBLIOGRAPHY</b> .....	<b>55</b>





## Foreword

Monitoring and analysis of health problems of the population in Serbia is one of the key tasks of the Institute of Public health of Serbia. Substance use is among the most important risk factors for health and therefore it is of great significance to have valid data on prevalence and patterns of substance use.

The here presented National Survey on lifestyles of citizens in Serbia is the first one in cooperation with the EU agency EMCDDA which provides comparative and valid data on different aspects related to drugs on the level of EU.

The survey provides representative data on prevalence and patterns of substance use among the population 18-64 at the national level but also at the regional level. A special attention was given to the privacy and anonymity of respondents according to the EU best practice.

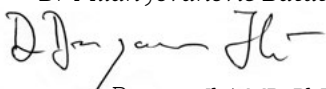
The survey is conducted according to the EMCDDA methodology and additionally includes questions from standard instruments on gambling and mental health as well as on alcohol. Additionally the survey provides insight into the opinions and attitudes of citizens on different problems in the society which is very important for the acceptance of the evidence based public health measures.

The survey was conducted in close cooperation with the EMCDDA which apart from methodological also provided financial support for the field study through the EU funded project "Preparation of the IPA beneficiaries for their participation in the EMCDDA".

The support for the survey was also provided through the Twinning Project "Implementation of Strategy for Fight against Drugs (supply and demand reduction components)" funded by the EU and implemented in Serbia in cooperation with a German-Czech consortium. The Twinning Project provided technical and expert support in all survey phases from drafting the questionnaire and methodology to analysis of the data and publishing the results .

The close cooperation between EU and Serbian experts provided knowledge exchange and application of EU best practice during the realization of survey.

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"Dr Milan Jovanovic Batut"*

  
*Dragan Ilić, MD, PhD*



## Summary of results

- In total 64.5% of the Serbian population aged 18–64 smoked tobacco ever in a lifetime, while 40.2% smoked tobacco in the last 30 days (44.3% of the men and 36.2% of the women). A total of 36.4% of the adult population (40.9% and 32.0% of the men and women respectively) are current daily tobacco smokers – this corresponds to 1 640–1 762 thousand persons aged 18–64. Electronic cigarettes were ever used by 9.6% of adults.
- Alcohol had been consumed by a total of 72.2% of the adult population in the last 12 months (82.1% of the men and 62.4% of the women). Binge drinking (60 gram or more of pure alcohol consumed on a single occasion) at least once a week or more frequently during the last 12 months was reported by 3.7% of the respondents (6.7% of the men and 0.6% of the women). Risky pattern of alcohol consumption was present in 13.3% of the population (22.1% and 4.6% of the men and women respectively), which corresponds to 580–664 thousand risky drinkers among adults, majority of them (77%) men. Harmful or problematic drinking was associated with 6.2% of the population (10.6% of the men and 1.7% of the women), i.e. 257 to 318 thousand people (majority of them men and approximately 1/3 among young adults aged 18–34).
- Closely to the half of alcohol volume consumed in Serbia is drunk as a beer. The average alcohol consumption of males is more than 6.5 times higher than consumption of females. The distribution of alcohol consumption by age is different among males and females – with age, the average consumption decreases in females and increases in males. In consequence, the differences in average alcohol consumption between males and females are higher in older age groups.
- Sedatives or hypnotics had been used by 22.4% of the respondents in the last year (13.9% of the men and 30.9% of the women), and by 14.6% in the last month (8.0% of the men and 21.2% of the women) with the remarkably higher prevalence in older age groups. Daily use of sedatives and hypnotics was reported by 4.4% of adult population (2.2% among men and 6.6% among women with majority in the age above 34 years), which after extrapolation to the whole population represents 182–234 daily users of hypnotics and sedatives among population aged 18–64. Opioid-based medication (i.e. mostly analgesics) had been used by 5.1% of the respondents in the last 12 months (4.1% of the men and 6.1% of the women) and by 2.2% in the last month (1.6% of the men and 2.8% of the women).
- Daily smoking is almost equally distributed across both genders and all age groups. Risky alcohol consumption is much more prevalent among men with a relatively equal distribution within age groups. The situation among daily users of sedatives and hypnotics is completely different – the majority are women with prevailing age above 45.
- The lifetime prevalence of any illicit drug was 8.0% in the whole population aged 18–64 (10.8% among men and 5.2% among women) with a higher prevalence of 12.8% in young adults in the age group 18–34. Any illicit drug use in the last 12 months was less prevalent – 1.7% of the whole population (2.7% among men and 0.7% among women) and 3.5% of the young adults 18–34. Among illicit drug users, the majority are men in the age up to 44 years.
- The most frequently used illegal drug in the population was cannabis, the lifetime use was reported by 7.7% of the respondents (10.4% of the men and 4.9% of the women) aged 18–64. Last 12 months prevalence of cannabis was 1.6% (3.4% in

young adults). Within the last 30 days cannabis was used by only 0.8% of adult respondents (1.5% of the men and 0.2% of the women) and 1.8% of young adults in 18–34 age group in the last 30 days.

- A perceived availability of individual drugs corresponds with their prevalence rates – cannabis which is used the most frequently is also the most available according to the population.
- Use of other illicit drugs was very rare – use of any illicit drug except cannabis was reported by 1.6% of all adults respondents (2.5% of young adults aged 18–34) for the lifetime, 0.4% (0.6% in young adults) for the last 12 months and 0.1% within the last 30 days.
- Problematic cannabis use is rare in the Serbian population only some low level of problem is present in 0.5% of adult population (0.8% among men and 0.1% among women), which corresponds to 14–28 thousand people, approximately half of them aged 18–34.
- Differences in prevalence rates between licit and illicit drugs can be explained by differences in attitudes and perceived risks towards different substances. While regular heavy use of alcohol and tobacco is widely accepted and perceived as less harmful, use of illicit drugs including occasional is widely condemned and regarded as much more harmful.
- The highest central estimate of problem opiate users (regular and/frequent users of opiates, especially injecting users) reached 20 thousand persons (95% CI: 16–28 thousand). The most reliable estimates ranging between 9 and 13 thousand for opiate (injecting) users.
- Prevalence of illicit drug use in Serbia in comparison with the majority EU countries is rather low or very low. In the adult population in general as well as among young adults 18 to 34 years of age, the prevalence of use of all monitored illicit drugs in Serbia is lower than in majority of EU countries in all time horizons – lifetime, last year as well as last months.
- By far the most prevalent gambling activity in Serbia is lottery (lotto, bingo, scratch ticket) – 54.6% of adult population have ever gambled some form of lottery, 31.4% of them in the last year and 17.3% in the last months. Sport betting is the second most prevalent with 17.2% of the population gaming it during lifetime, 13.1% and 10.0% in the last year and in the last months, resp. Other forms of gambling are less prevalent, slot machines with lifetime prevalence of 5.5% is the third most prevalent form of gambling activity.
- While lottery gambling is equally distributed among gender and age groups, other forms of lotteries are more prevalent among men – for example 91.5% of those who bet on sport in the last 12 months are men predominantly up to 44 years of age.
- In total 3.7% of adult Serbian population is in some level of risk of problem gambling, 1.1–2.0% of them are in moderate and higher risk of problem gambling (problem gamblers), of them 0.3–0.7% in the high risk (pathological gambling). After extrapolation to Serbian population aged 18–64, estimates of problem gambling range between 51 and 93 thousand persons, of them 14–33 thousand of pathological gamblers.
- In the highest risk of problem gambling are gamblers of casino games, slot machines and on-line gamblers– approximately 50% of those who gambled those games in the last 12 months are in some level of risk of problem gambling.
- Among intensive substance users or some gamblers, higher level of psychological distress was found – it concerns especially daily users of sedatives, cannabis users or casino and slot machine gamblers.

## 1. Introduction

General Population Survey (GPS) provides information on extent and patterns of psychoactive substance use. The availability of comparative data on these issues is a key requirement for the evaluation of progress in reducing these phenomena and for further policy development. The possibility to compare results from Serbia with results from other countries on the ground of European average allows more in-depth data interpretation and better understanding of the drug situation in the country. It benefits from using comparable methodology and being as close as possible to European standards developed under supervision of EMCDDA.

The results of the GPS in Serbia will be useful not only for the policy on national level. They will also contribute to the European picture of drug problem since they will be reported to the EMCDDA. The representativeness on the regional level will assure usefulness of the results also for regional drug policy. The possibility to analyse regional differentiation of psychoactive substance use will facilitate understanding drug phenomena and it will contribute to the development and the evaluation of regional policy towards psychoactive substances.

The study is considered to be the first step to initiate monitoring of drug use and alcohol consumption and exploring attitudes toward drug and alcohol problem as well as attitudes toward drug and alcohol policy.

The study objectives were as follows:

- To provide policy makers with data for informed and evidence based drug policy on the national level as well as on the regional level.
- To apply the European standard approaches in the context of Serbia and to contribute to a common understanding of psychoactive substance use and addictive behaviour.
- To develop standardized comparative methodology for surveys on substance use and addictions, to initiate their monitoring in general population in Serbia and to provide comparable data from Serbia to EU level.

## 2. Design and methodology

The study was designed as a cross-sectional survey on a representative sample of the adult population of the Republic of Serbia. The questionnaire was developed on the basis of the EMCDDA European Model Questionnaire (EMQ) and included following sections:

- Introductory section (warming up) about level of satisfaction with various aspects of everyday life and ranking of problems in the Serbian society
- Tobacco and electronic cigarettes
- Alcohol consumption and attitude toward alcohol issues
- Use of psychoactive medicines
- Illicit drug use and availability
- New psychoactive substances - use and availability
- Gambling
- Opinions on drug use and related risk
- Mental health assessment
- Data for the benchmark method of estimating the number of problem drug users (setting up multipliers)
- Socio-demographic section

During November and December 2013, the questionnaire was piloted in focus group, cognitive interviews as well as in a pilot survey with 160 respondents. The field data collection within the main survey was realised from January to March 2014.

The target population were inhabitants of the Republic of Serbia aged 18-64 years without inhabitants of Kosovo and Metohija. The people living in prison or other institutions such as hospitals, therapeutic communities, orphanages, nursing home were excluded from the sampling. Homeless and people living in illegal settlements were also not covered. The reason for the age limit of 18 years was the need to get parental consent in written form for interviewing underage individuals in Serbia according to the ethical committee of the Serbian Institute of Public Health which approved the survey and its methodology. A written consent form could harm the needed perceived anonymity and therefore it could lead to biased results.

When the national representative sample was planned, two variables were used for the stratification and estimation of the sample size and its structure so that the sample was stratified in two dimensions:

- strata according to 4 official geo-economical strata used by Serbian Statistical Office: (1) Belgrade, (2) Vojvodina, (3) Šumadija and Western Serbia, (4) Southern and Eastern Serbia,
- urban/rural type of population also used according to the definition of the Serbian Statistical Office.

The minimum sample size of each regional sub-sample was calculated<sup>1</sup> as 770. The age group 18-34 with higher expected level of drug use was oversampled by the factor

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<sup>1</sup> On the basis of following assumptions: Level of Confidence Measure = 1.96, Margin of Error = 0.05, Baseline levels of the indicators = 0.5, Design effect = 2.

2.2, which led to the calculated sample size of 5 120 respondents (which is bigger sample size than the minimum sample size of 4 560 recommended by EMCDDA in its minimal requirements for general population surveys on drugs) see the structure of calculated sample in Table 1.

**Table 1: Calculated sample size and its structure**

Region	Type	18-34	35-64	Total
Belgrade	Urban	549	451	1000
	Rural	122	106	228
Vojvodina	Urban	457	387	844
	Rural	286	267	553
Šumadija and Western Serbia	Urban	379	329	708
	Rural	361	352	713
Southern and Eastern Serbia	Urban	317	280	597
	Rural	236	241	477
<b>Total</b>		<b>2707</b>	<b>2413</b>	<b>5120</b>

The probabilistic sampling strategy using multi-stage cluster sampling design was employed. In a first step, small territorial units were randomly selected with probabilities proportional to the population size. Next the households were randomly selected within each unit – the national household register was used as sample frame. The last stage was the random selection of the respondent within the household using Kish grid.

The national representative sample was then obtained using weighting procedure by gender (2 groups), age groups (5 groups: 18–24 and then 4 groups by 10 years each), education (3 categories), regions (4 regions), rural/urban type of inhabitation (2 categories).

Face-to-face CAPI (computer assisted personal interviewing) was applied performed by experienced interviewers employed by the field data collection agency. They were previously trained and provided with written instructions. A total of 4 visits were foreseen (the first one and 3 additional) in order to reach the respondent at the household. Written information about the study was given to selected participants.

A total of 11 144 households were visited, in 10 749 of them a household member was contacted and 8 079 households were eligible to participate meaning that one of the household members met the inclusion criteria. The final sample size was 5 385 respondents. Depending on the calculation, the final response rate was 66.7% (including just eligible households contacted face-to-face) or 63.5% (adding also households without face-to-face contacts into non-respondents) – Table 2.

**Table 2: Contacted, eligible and responded households in the study**

Total number of addresses identified and inhabited	11 144
No contact made	395
Not eligible	2670
Eligible	8079
Total interviews conducted	5385

There was no gender difference between respondents and non-respondents. By age, respondents older than 40 achieved lower response rate – this increases the validity of the study results as regards illicit drugs since their use is concentrated in the younger age groups – Table 3.

**Table 3: Comparison of respondents and non-respondents by gender and age**

Area	% of Sample (non weighted)	% of Refusals
<b>Gender</b>		
Male	48.8	48.1
Female	51.2	51.2
It is difficult to state	0.0	0.7
<b>Age</b>		
Below 20	4.9	0.6
20-39	54.1	22.6
40-59	31.8	50.2
60 or more	9.2	17.7
It is difficult to state	0.0	8.9

## 2.1 Research tool

Apart from EMQ questions on prevalence and frequency within the standard time horizons (lifetime, the last 12 months and the last 30 days) of illicit drugs, pharmaceuticals and tobacco, special tools for the measurement of alcohol consumption and more intensive and problematic forms of substance use were applied. The questionnaire included SMART project outcomes concerning alcohol issues (SMART project, 2011) including BSQF technique and RAPS tool, Kessler Psychological Distress Scale (6 items) for mental health issues (Kessler et al., 2002, Furukawa et al., 2003), Cannabis abuse screening test – CAST (Legleye et al., 2007, Beck and Legleye, 2008). Apart from substance abuse, the questionnaire includes a gambling section with Problem Gambling Screening Index (Ferris and Wynne, 2001, Bagby et al., 2012, Svetieva and Walker, 2008) and Lie/bet screen (Johnson et al., 1997).

### 2.1.1 Beverage specific quantity frequency method (BSQF)

Alcohol consumption patterns and the total consumption of alcohol were measured using the Beverage specific quantity frequency method (BSQF) (SMART project, 2011). It consists of a set of questions on drinking of particular types of alcohol beverages in a defined recall period (last 12 months) and then about the quantity of drinks usually (on average) drunk during one typical drinking day. The beverage specific quantity-frequency method employs two questions for each of the three types of alcohol beverages: beer, wine and spirits. The questions were as follows:

1. How often did you drink beer/wine/spirit over the past 12 months?
2. How much beer/wine/spirit did you drink on average on a day when you drank beer over the past 12 months?

The responses were given on a standard frequency scale used in questions about the frequency of drinking. BSQF was identified as an optimal option for the estimation



of annual alcohol consumption<sup>2</sup>. For calculation of pure alcohol consumption 5% of ethanol concentration in beer, 12.5% in wine and 40% in spirits was assumed. The total consumption of pure alcohol can be compared with international or national drinking guidelines.<sup>3</sup>

### **2.1.2 Problem alcohol screening test (RAPS4)**

The RAPS4 alcohol screening test is a four-question tool designed for clinical practice that has been shown to be effective in detecting problems with alcohol use including addiction in the past 12 months (Cherpitel, 2000, Cherpitel et al., 2005). The RAPS4 gets its name from the questions it poses to the patient which pertain to remorse (R), amnesia (A), performance (P), and starter drinking behaviour (S). Each question pertains to the patient's behaviours in the past 12 months. Questions are:

1. Have you had a feeling of guilt or remorse after drinking?
2. Has a friend or a family member ever told you about things you said or did while you were drinking that you could not remember?
3. Have you failed to do what was normally expected of you because of drinking?
4. Do you sometimes take a drink when you first get up in the morning?

At least one positive answer suggests harmful drinking affecting the health, well-being and adversely affecting performance in a job and close social network. In the SMART project<sup>4</sup>, the cut-off of two positive answers was found to be the optimal screening for assessment of problematic drinking.

### **2.1.3 Harms related to alcohol**

In the alcohol section, a 7 item battery on the harms caused by alcohol use to respondent's health status and social life including work, finances or nuisance and criminal behaviour was included. Questions asked, how many times during the past 12 months:

1. Have you felt your drinking harmed your home-life or marriage?
2. Have you felt that your drinking harmed your friendships or social life?
3. Have you felt that your drinking harmed your health?
4. Have you felt your drinking harmed your work or studies? (like missing work/school, not doing your work/studies well or losing your job/ dropping out of school)
5. Have you felt that your drinking harmed your finances?
6. Have you got into a fight when you've been drinking or right after drinking?
7. Have you been arrested or stopped by the police because of drunk driving or drunken behaviour?

Possible answers were 'No, never', 'Yes, once', 'Yes, more than once'.

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2 Project SMART (Standardizing Measurement of Alcohol Related Troubles: Pilot drinking survey report. Available at [http://www.alcsmart.ipin.edu.pl/files/smart\\_pilot\\_final\\_report.pdf](http://www.alcsmart.ipin.edu.pl/files/smart_pilot_final_report.pdf) [2014-04-08].

3 see e.g. <http://www.icap.org/Table/InternationalDrinkingGuidelines>. 10 g of pure ethanol equals to 12.7 ml of pure ethanol.

4 Project SMART (Standardizing Measurement of Alcohol Related Troubles: Pilot drinking survey report. Available at [http://www.alcsmart.ipin.edu.pl/files/smart\\_pilot\\_final\\_report.pdf](http://www.alcsmart.ipin.edu.pl/files/smart_pilot_final_report.pdf) [2014-04-08].

### **2.1.4 Cannabis Abuse Screening Test (CAST)**

The Cannabis Abuse Screening Test (CAST) is a short 6 item measure used to assess problem or risky cannabis use (Piontek et al., 2008, Beck and Legleye, 2008). CAST explores consumption per se, risky patterns of use, health and social harm, reproaches from relatives and dependence. CAST is used both in population surveys and in clinical practice. It consists of following questions referring to recall the period of the last 12 months:

1. Have you ever smoked cannabis before midday?
2. Have you ever smoked cannabis when you were alone?
3. Have you ever had memory problems when you smoke cannabis?
4. Have friends or members of your family ever told you that you ought to reduce your cannabis use?
5. Have you ever tried to reduce or stop your cannabis use without succeeding?
6. Have you ever had problems because of your use of cannabis (argument, fight, accident, bad result at school, etc.)?

Answers with binary option “yes/no” were taken from original tool (Beck and Legleye, 2008) due to assumed limited prevalence of problem cannabis use in the Serbian population (which was then confirmed). Two positive answers indicate the risky pattern of cannabis use and the need for the further intervention. Three or more positive answers indicates that the use may be problematic and the person should be referred to a specialised consultation concerning the cannabis use and related problems.

### **2.1.5 Problem gambling screening index**

The Problem Gambling Screening Index (PGSI) is used for screening of problem gambling. It is a 9-item scale developed from the original 31-item scale Canadian Problem Gambling Index (Ferris and Wynne, 2001, Bagby et al., 2012, Svetieva and Walker, 2008). It consists of the following questions referring to the last 12 months:

1. Have you bet more than you could really afford to lose?
2. Still thinking about the last 12 month, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
3. When you gambled, did you go back another day to try to win back the money you lost?
4. Have you borrowed money or sold anything to get money to gamble?
5. Have you felt that you might have a problem with gambling?
6. Has gambling caused you any health problems, including stress or anxiety?
7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
8. Has your gambling caused any financial problems for you or your household?
9. Have you felt guilty about the way you gamble or what happens when you gamble?

Options and scoring for each question are 'never' (0 points), 'sometimes' (1), 'most of the time' (2), 'almost always' (3 points). Total score ranks from 0 to 27. The higher the score is the greater is the risk that a gambling is problematic. Score 0 indicates non-problem gambling, score 1–2 low level of problems with few or no identified negative consequences, 3–7 moderate level of problems related to gambling, 8 or more points indicate problem gambling with high risk of pathological gambling (Maitland and Adams, 2007). PGSI is rather not used in clinical evaluation, but for screening of pathological gambling in general population surveys (Currie et al., 2010, Currie et al., 2013).

### **2.1.6 Lie/bet screen**

Lie/bet is a 2-item screening tool for problem gambling (Johnson et al., 1997). It consists of 2 questions referring to the last 12 months:

1. Have you had to lie to people important to you about how much you gambled?
2. Have you felt the need to bet more and more money?

At least one positive answer indicates problem gambling.

### **2.1.7 Kessler 6 scale for psychological distress**

The short screening scales of psychological distress developed by Kessler and colleagues (Kessler et al., 2002, Furukawa et al., 2003) have a 10-items and a 6-items version. While Kessler-10 is more reliable for screening of severe disorders, Kessler-6 is preferred in screening for any mood or anxiety disorder. The version with 6 questions was used in the 2014 General Population Survey. Questions address "how often during the last 30 days respondent felt:"

1. Nervous
2. Hopeless
3. Restless or fidgety
4. So depressed that nothing could cheer him/her up
5. That everything he/she does requires an effort?
6. Worthless

Answers are on the scale 'all of the time', 'most of the time', 'some of the time', 'a little of the time', or 'none of the time'. Answers are scored from 0 (none of the time) to 4 (all of the time), score can achieve 0–24 points. Respondents scoring from 0 to 7 are in no risk, from 8 to 12 at mild to moderate risk and from 13 to 24 at serious risk of psychological distress.

### 3. Prevalence and patterns of substance use in the general population

#### 3.1 Prevalence of substance use

The lifetime use of tobacco in the form of cigarettes, cigars or pipes was reported by 64.5% of the respondents in the age group 18–64, while 40.2% of the individuals had smoked tobacco in the last 30 days (44.3% of the men and 36.2% of the women). Electronic cigarettes were ever used by 9.6% respondents – see Table 4 and Table 6.

Alcohol had been consumed by a total of 72.2% of the adult respondents in the last 12 months (82.1% of the men and 62.4% of the women) – Table 5.

Tranquillisers or sleeping pills (i.e. sedatives or hypnotics) had been used by 22.4% of the respondents in the last year (13.9% of the men and 30.9% of the women), and by 14.6% in the last month (8.0% of the men and 21.2% of the women) with the remarkably higher prevalence in older age groups. Opioid-based medication (i.e. mostly analgesics) had been used by 5.1% of the respondents in the last 12 months (4.1% of the men and 6.1% of the women) and by 2.2% in the last month (1.6% of the men and 2.8% of the women) – Table 5 and Table 6. Majority of the respondents reported that they obtained the medicines from the pharmacy on prescription – 85.3 % in sedatives and hypnotics and 70.3 in opiates/opioids.

According to the survey, the lifetime prevalence of any illicit drug use was 8.0% in the whole population aged 18–64 (10.8% among men and 5.2% among women) with higher prevalence in young adults – 12.8% in 18–34 age group. Any illicit drug use in the last 12 months was less prevalent – in 1.7% of the whole population (2.7% among men and 0.7% among women) and 3.5% of the young adults.

The most frequently used illegal drug in the population was cannabis, the lifetime use of which was reported by 7.7% of the respondents (10.4% of the men and 4.9% of the women) aged 18–64. Last 12 months prevalence of cannabis was 1.6% (3.4% in young adults).

Use of other illicit drugs was very rare – use of any illicit drug except cannabis was reported by 1.6% of all adults respondents (2.5% of young adults aged 18–34) for the lifetime and 0.4% (0.6% in young adults) for the last 12 months. The most frequently used illicit drug except cannabis was ecstasy with lifetime prevalence of 0.7% (1.2% in young adults) and last 12 months prevalence of 0.1% (0.2% in young adults) and also amphetamines and cocaine with similarly low prevalence levels. Detailed results by drugs are provided in Table 4 and Table 5

**Table 4: Lifetime prevalence rates of substance use in the general population (%)**

Drug	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
Tobacco	71.7	57.3	59.5	64.5
Electronic cigarettes	9.5	9.7	13.2	9.6
Alcohol	94.3	84.5	90.3	89.4
Any illicit drug*	10.8	5.2	12.8	8.0
Any illicit drug except cannabis	2.3	0.9	2.5	1.6
Cannabis	10.4	4.9	12.4	7.7
Ecstasy	1.1	0.3	1.2	0.7
Amphetamines	1.0	0.3	1.1	0.6
Cocaine	1.0	0.2	1.0	0.6
Heroin	0.7	0.2	0.7	0.4
Home-made opiate extraction from poppy (so called poppy tea)	0.5	0.2	0.2	0.4
LSD	0.4	0.3	0.5	0.3
Hallucinogenic mushrooms	0.3	0.1	0.3	0.2
New psychoactive substances (legal and herbal highs)	0.2	0.0	0.2	0.1
Inhalants	0.5	0.3	0.4	0.4

Note: \* Includes cannabis, ecstasy, amphetamines, cocaine, heroin, home-made opiate extraction from poppy (poppy tea), LSD and magic mushrooms.

**Table 5: Last 12 months prevalence of substance use in the general population (%)**

Drug	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
Alcohol	82.1	62.4	79.5	72.2
Any illicit drug*	2.7	0.7	3.5	1.7
Any illicit drug except cannabis	0.6	0.2	0.6	0.4
Cannabis	2.5	0.6	3.4	1.6
Ecstasy	0.1	0.1	0.2	0.1
Amphetamines	0.2	0.1	0.3	0.1
Cocaine	0.2	0.0	0.2	0.1
Heroin	0.1	0.0	0.1	0.1
Home-made opiate extraction from poppy (so called poppy tea)	0.0	0.0	0.0	0.0
LSD	0.0	0.1	0.1	0.0
Hallucinogenic mushrooms	0.0	0.1	0.1	0.0
New psychoactive substances (legal and herbal highs)	0.1	0.0	0.1	0.1
Inhalants	0.0	0.0	0.1	0.0
Medication – sedatives, hypnotics	13.9	30.9	8.0	22.4
Medication – opioids	4.1	6.1	2.9	5.1

Note: \* Includes cannabis, ecstasy, amphetamines, cocaine, heroin, home-made opiate extraction from poppy (poppy tea), LSD and magic mushrooms.

The use of illicit drugs within the last 30 days shows very low levels close to zero, with the exception of cannabis, the use of which was reported by 0.8% of the adult respondents (1.5% of the men and 0.2% of the women) and 1.8% of the young adults in 18–34 age group – Table 6.

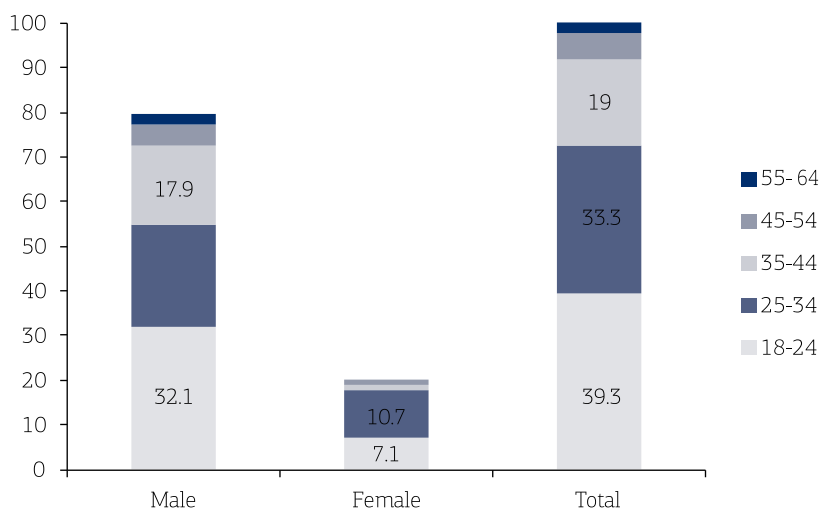
**Table 6: Last 30 days prevalence of substance use in the general population (%)**

Drug	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
Tobacco	44.3	36.2	39.5	40.2
Any illicit drug*	1.5	0.2	1.8	0.9
Any illicit drug except cannabis	0.2	0.0	0.2	0.1
Cannabis	1.5	0.2	1.8	0.8
Ecstasy	0.1	0.0	0.1	0.1
Amphetamines	0.1	0.0	0.2	0.1
Cocaine	0.0	0.0	0.0	0.0
Heroin	0.0	0.0	0.0	0.0
Home-made opiate extraction from poppy (so called poppy tea)	0.0	0.0	0.0	0.0
LSD	0.0	0.0	0.1	0.0
Hallucinogenic mushrooms	0.0	0.0	0.0	0.0
New psychoactive substances (legal and herbal highs)	0.0	0.0	0.0	0.0
Inhalants	0.0	0.0	0.0	0.0
Medication – sedatives, hypnotics	8.0	21.2	3.4	14.6
Medication – opioids	1.6	2.8	0.9	2.2

Note: \* Includes cannabis, ecstasy, amphetamines, cocaine, heroin, home-made opiate extraction from poppy (poppy tea), LSD and magic mushrooms.

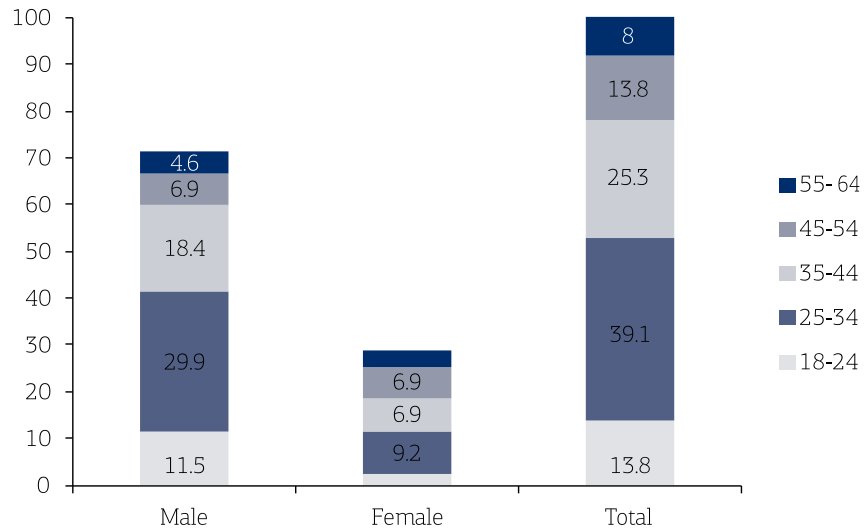
Among recent (last 12 months) cannabis users, the majority are men (80%) and young adults aged 18–34 (73 %) – Figure 1.

**Figure 1: Respondents using cannabis in the last 12 months by gender and age groups (in %, N=84)**



Among people with lifetime experience with any illicit drug except cannabis, the majority is represented also by men (71%), though the youngest group 18–24 is less represented and the majority (64%) is in the age 25–44 years – Figure 2.

**Figure 2: Respondents using other drug than cannabis in their lifetime by gender and age groups (in %, N=87)**



**Table 7: Average age of first use of selected drugs by age groups**

Drugs	18-24	25-34	35-44	45-54	55-64
Solvents	18.4	16.3	22.0	17.6	
Cannabis	17.8	19.2	19.8	17.6	25.7
Ecstasy	20.6	20.3	23.3	26.0	24.0
Amphetamines	19.2	20.9	25.2	35.0	n.a.
Cocaine	18.2	21.7	24.1	28.0	41.7
Heroin	18.4	21.7	26.8	23.3	22.0
LSD	19.0	21.5	24.5	14.2	
Hallucinogenic mushrooms	18.3	21.7	26.4	35.0	
New psychoactive substances (legal and herbal highs)	20.0	22.2	27.0	40.0	

Note: The number of cases in some categories is small.

### 3.2 Patterns of alcohol consumption

Alcohol beverages are the most prevalent psychoactive substance. Among the population in the age range 18-64 more than 70% consumed at least once in the last 12 months an alcoholic beverage. The popularity of beer, wine and spirits is rather balanced. (Table 8).

**Table 8: Proportions of respondents who consumed alcohol in the last 12 months by beverage type**

Alcohol beverage	Proportion of total population (%) (multiple response)
Spirits	50.3
Wine	52.6
Beer	52.3
Any alcohol beverage	72.2

The majority of alcohol consumers drink all three alcohol beverages (table 9) – about 40% of alcohol consumers and about 30% of the whole population while the small proportion of alcohol consumers drink exclusively spirits (5% and 7% respectively). Other patterns of drinking are more or less equally represented.

**Table 9: Patterns of different alcohol beverages consumed over the last 12 months in the age group 18 - 64**

Consumed alcohol beverages	Proportion of total population (%)	Proportion among alcohol consumers (%)
Abstainers	27.8	-
Spirits only	5.0	6.9
Wine only	7.2	9.9
Beer only	6.8	9.4
Spirits and wine	7.8	10.8
Spirits and beer	7.8	10.8
Beer and wine	8.6	11.9
Spirits and beer and wine	29.1	40.3

An important indicator of alcohol consumption is the value of annual alcohol consumption recalculated into 100% alcohol. On the population level it is used as average annual consumption per capita. On the bases of survey results the average annual alcohol consumption was estimated for each alcohol consumer in the age range from 18 to 64.

Table 10 shows the average annual use of alcohol in the population 18 to 64 years old in respect to the three main types of alcohol beverages calculated into 100% alcohol purity.



In general population studies the alcohol consumption is very often underestimated and two main reasons contribute to it. Firstly respondents tend to underestimate their own alcohol consumption, and secondly the heavy drinkers are usually underrepresented in the sample. Although population survey results differently reflect average alcohol consumption than sales statistics, they show the distribution of consumption by social and demographic indicators.

The majority of alcohol consumed in Serbia is consumed as beer. From the 2.4 litres of pure alcohol almost half of the consumed alcohol in Serbia is drunk as a beer. Among those who consumed alcohol in the last 12 month the total amount of pure alcohol sums up to 3,33 litres

**Table 10: Average alcohol consumption per capita of pure alcohol in litres in the last 12 months in the age group 18 - 64**

Alcohol beverages	Average consumption in litres of pure alcohol (whole population 18-64)	Consumption in litres of pure alcohol per capita of alcohol consumers	Share in total consumption (%)
Spirits	0.72	1.00	30.0%
Wine	0.53	0.73	22.1%
Beer	1.15	1.60	47.9%
Total alcohol	2.40	3.33	100.0%

Further analyses allow us to observe how average consumption distributes between frequency of drinking and intake per day. The presented data will be limited to the consumers of individual beverages only.

Data on average frequency of alcohol beverages use as well as percentages of persons that had drunken alcohol beverage every day and at least ones a week are presented in Table 11. The lowest frequency of drinking is noted in the case of wine. Any alcohol beverage is consumed every 6 days in average.

**Table 11: Drinking frequencies among alcohol consumers by types of alcohol beverage**

Alcohol beverages	Average number of drinking days in the last 12 months	Proportion of consumers drinking every day (%)	Proportion of consumers drinking at last once a week (%)
Spirits	45	4.2	22.1
Wine	20	0.5	9.5
Beer	44	2.4	25.7
Any alcohol	58	5.0	30.4

Data on the volume of different alcohol beverages consumed on an average day, when they are consumed, are presented in Table 12.

**Table 12: Percentage of consumers of particular alcohol beverage by quantity of consumed alcohol beverage in one day and average quantity in one day**

Spirits	
Less than 30 ml	43.1%
31-60 ml	28.8%
61 ml and more	28.1%
Average in ml of spirits	69 ml
Average in ml of pure alcohol	27,6 ml
Wine	
Less than 200 ml	52.9%
201-400 ml	26.8%
401 ml and more	20.4%
Average in ml wine	351 ml
Average in ml of pure alcohol	43,9 ml
Beer	
Less than 500 ml	52.9%
501-1000 ml	26.8%
more than 1000 ml	20.4%
Average in ml of beer	784 ml
Average in ml of pure alcohol	39,2 ml

The distribution of alcohol consumption is much skewed. There are a lot of consumers with very low consumption and small proportion of those who drink very much. The distribution of alcohol consumers by level of consumption is shown in the Table 13. The biggest share of respondents consumes up to 1.2 litres of pure alcohol annually. The proportion of respondents decreases with increase of alcohol consumption. The category of highest alcohol consumption (more than 12 litres of pure alcohol) is represented by 5.4% of population.

The majority of alcohol consumption can be attributed to a relative small population subgroup. Around half of the alcohol amount (50.3%) consumed in Serbia has been drunk by 7.5% of the consumers (4.4% population aged 18-64), that means those with individual annual consumption above 12 litres per capita.

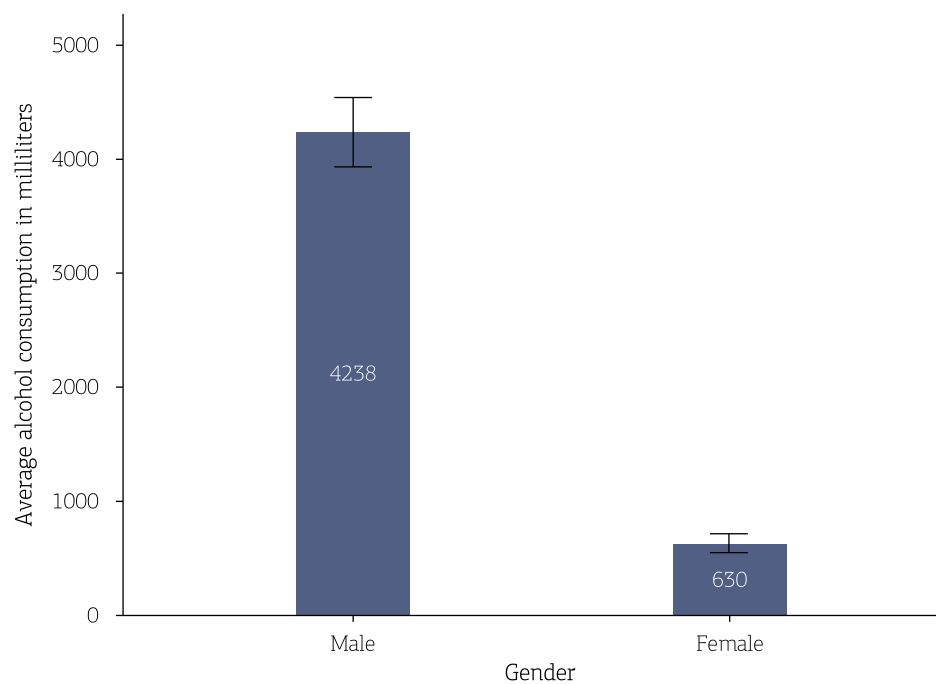
**Table 13: Alcohol consumers according to the level of annual consumption of alcohol beverages in litres of 100% alcohol**

Level of annual consumption	Proportion of total population (%)	Proportion among alcohol consumers (%)
Abstainers	28.3	-
less than 1.2 litres	41.4	57.7
1.21 - 6.0 litres	19.1	26.7
6.01 - 12.0 litres	5.8	8.2
12.01 litres and more	5.4	7.5
Total	100.0	100.0

The average alcohol consumption is highly differentiated by gender (Figure 3). The average alcohol consumption of males is more than 6.5 times higher than consumption of females.

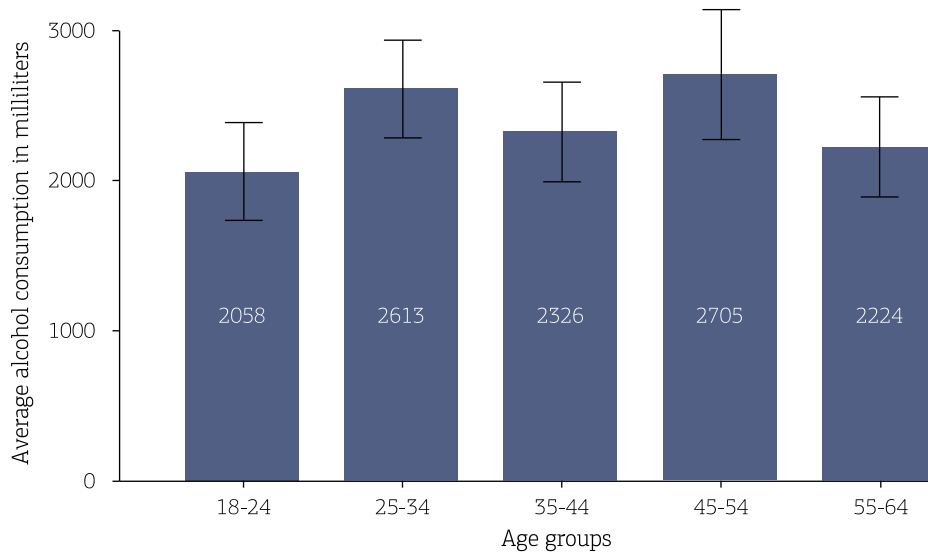
The difference in share of abstainers between males and females contribute to variation of annual alcohol consumption, because abstainers are included into denominator. There is 17.9% abstainers among males and 37.6% among females. When we take annual consumption calculated for consumers only we have 5190 ml of pure alcohol for males and 1655 ml. for females, that means the males' average consumption is about 3 times higher females' one.

**Figure 3: Average annual alcohol consumption (in millilitres of 100% alcohol) by gender**



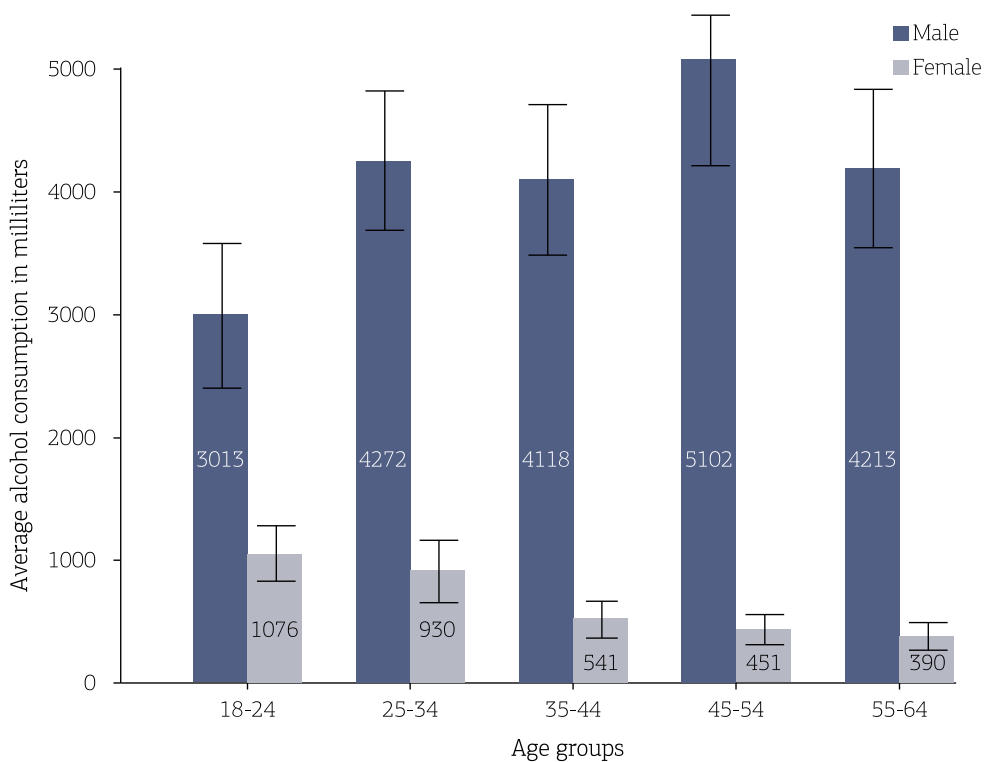
The amount of consumed alcohol across age groups is shown in Figure 4.

**Figure 4:** Average annual alcohol consumption (in millilitres of 100% alcohol) by age



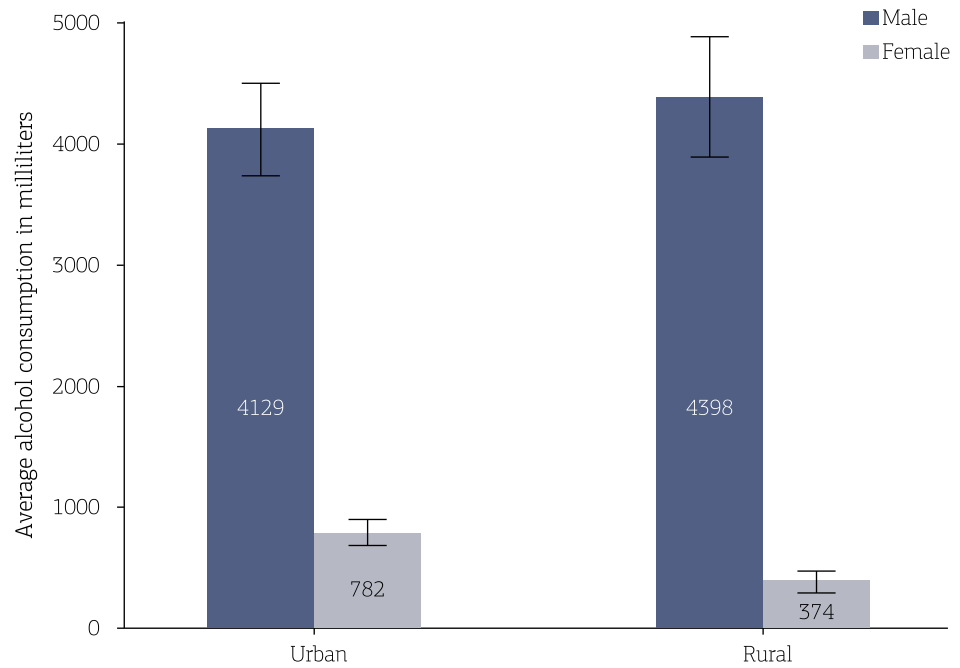
The distribution of alcohol consumption by age is different among males and females (Figure 5). The average consumption among women is decreasing with age. Among men this trend cannot be observed. Therefore, the differences in average alcohol consumption between males and females are much higher in older age categories in comparison to younger age groups.

**Figure 5:** Average annual alcohol consumption (in millilitres of 100% alcohol) by gender and age



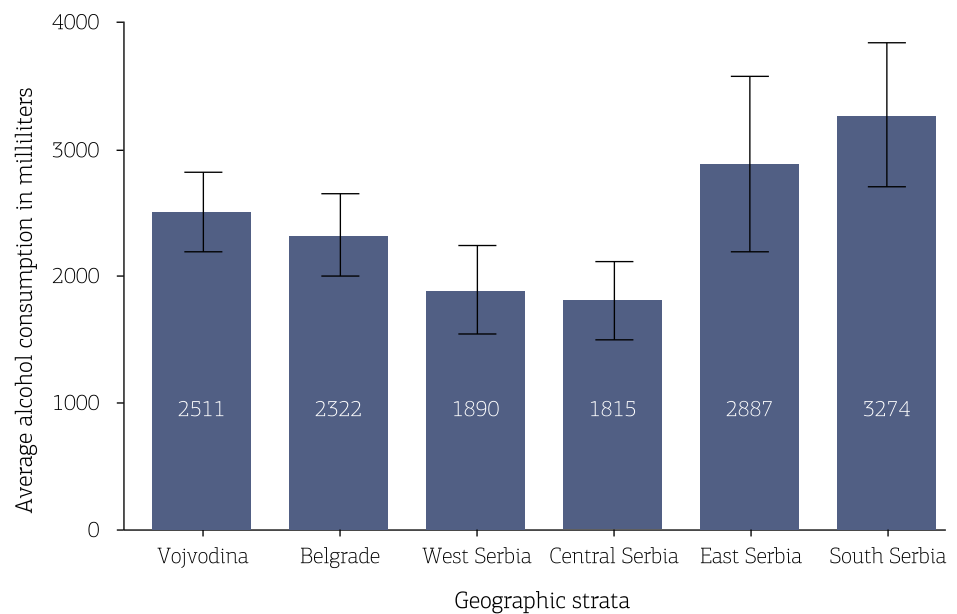
No difference can be observed on the average alcohol consumption in rural and urban areas. However taking the gender into account, males from urban areas drink on average the same amount of alcohol as males from rural area, among females significant differences are noticed. In average, female from urban areas drinks more than twofold more than female from rural area.

**Figure 6: Average annual alcohol consumption (100% alcohol) by type of settlement and gender**



The highest average alcohol consumption is noted in South Serbia, the lowest one in central Serbia (Figure 7).

**Figure 7: Average annual alcohol consumption (100% alcohol) by region**



### 3.3 Intensive and problematic forms of substance use

A total of 36.4% of the adult population (40.9% and 32.0% of the men and women respectively) reported regular daily smoking in the last month. This correspond to 1 640 – 1 762 thousand of Serbian daily smoking adults in age 18–64.

Binge drinking (drinking of 60 grams of pure alcohol and more on a single occasion, which is for example at least 1.5 litres of beer or at least 0.6 litres of wine or at least 0.18 litres of spirits) at least once a week or more frequently during the last 12 months was reported by a total of 3.7% of the respondents (6.7% of the men and 0.6% of the women). According to RAPS, 13.3% of the respondents (22.1% and 4.6% of the men and women respectively) met the criteria for the risky drinkers category (providing at least one positive answer on the RAPS scale), which corresponds to 580–664 thousand Serbian risky drinkers among adults, majority of them (77%) men. Harmful or problematic drinking (2 or more positive answers in RAPS) is associated with 6.2% of the population (10.6% of the men and 1.7% of the women), i.e. 257 to 318 thousand people in absolute figures (majority of them men and approximately 1/3 among young adults aged 18–34).

Daily use of sedatives and hypnotics was reported by 4.4% of adult population (2.2% among men and 6.6% among women) with majority of being occurred in the age above 34 years, which after extrapolation to the whole population represents 182 to 234 thousand daily users of hypnotics and sedatives among population aged 18–64.

Problematic patterns of cannabis use are less frequent in the Serbian population and thus estimates might not be reliable. Nevertheless, problematic cannabis use in the last 12 months as measured by CAST (2 or more positive answers on the CAST scale) was observed among 0.5% of adult population (0.8% among men and 0.1% among women) with the higher prevalence among young adults aged 18–34 (0.8%), which corresponds to 14 –28 thousand people, approximately half of them aged 18–34.

Detailed information on the prevalence of intensive and problematic patterns of substance use in Serbia including confidence intervals of population estimates are provided in Table 14 and Table 15.

**Table 14: Prevalence of intensive and problematic forms of substance use (%)**

Substance use	Gender		Young adults	Total population		
	Males (n=2676)	Females (n=2709)	18-34 years (n=1819)	Central	18-64 years (N=5385) 95% CI: low	95% CI: high
Daily smoking of tobacco in the last 30 days	40.9	32.0	34.4	36.4	35.1	37.7
Risky (high) alcohol consumption*	7.0	1.2	3.6	4.1	3.5	4.6
Frequent binge drinking**	6.7	0.6	4.2	3.7	3.2	4.2
Problematic alcohol consumption (1+ in RAPS) in the last 12 months	22.1	4.6	14.5	13.3	12.4	14.2
Very problematic alcohol consumption (2+ in RAPS) in the last 12 months	10.6	1.7	6.9	6.2	5.5	6.8
Daily use of sedatives, hypnotics in the last 30 days	2.2	6.6	0.9	4.4	3.9	5.0
Problematic cannabis use (CAST 2+) in the last 12 months	0.8	0.1	0.8	0.5	0.3	0.6
Cannabis daily or almost daily (20 and more days in the last month)	0.1	0.0	0.1	0.1	0.0	0.1
Ever injecting illicit drug	0.1	0.0	0.1	0.1	0.0	0.2

Note: \* More than 9 litres of 100% alcohol in females and 16 litres of males in the last 12 months, which correspond to average daily consumption of 20g of alcohol in females and 35g in males. \*\* Drinking of 60 grams and more at least once a week during the last 12 months.

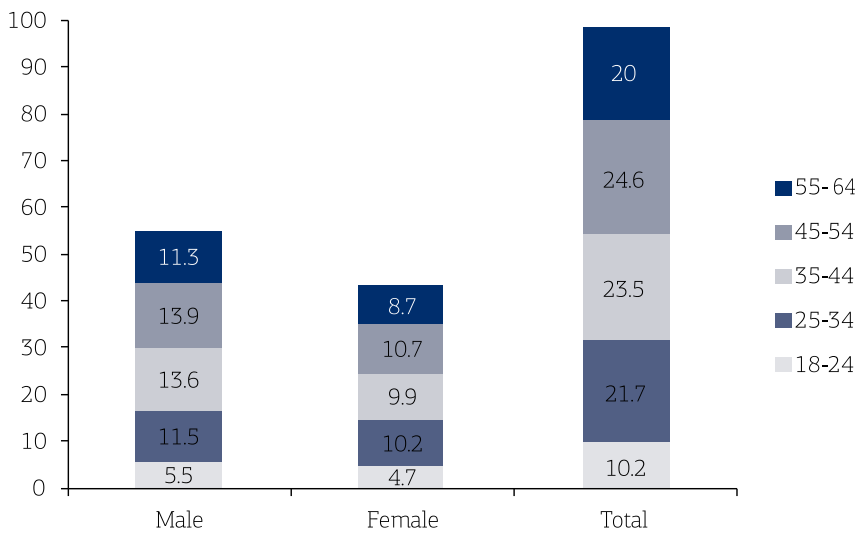
**Table 15: Prevalence estimates of intensive and problematic forms of substance use in absolute numbers after extrapolation to the population size (rounded to hundreds)**

Substance use	Gender		Young adults	Total population		
	Males (n=2676)	Females (n=2709)	18-34 years (n=1819)	Central	18-64 years (N=5385) 95% CI: low	95% CI: high
Daily smoking of tobacco in the last 30 days	949 700	752 400	543 700	1 701 100	1 640 400	1 761 900
Risky (high) alcohol consumption*	162 500	28 200	56 900	191 600	163 600	215 000
Frequent binge drinking**	155 600	14 100	66 400	172 900	149 500	196 300
Problematic alcohol consumption (1+ in RAPS) in the last 12 months	513 200	108 200	229 200	621 600	579 500	663 600
Very problematic alcohol consumption (2+ in RAPS) in the last 12 months	246 100	40 000	109 100	289 800	257 000	317 800
Daily use of sedatives, hypnotics in the last 30 days	51 100	155 200	14 200	205 600	182 300	233 700
Problematic cannabis use (CAST 2+) in the last 12 months	18 600	2 400	12 600	23 400	14 000	28 000
Cannabis daily or almost daily (20 and more days in the last month)	2 300	0	1 600	4 700	0	4 700
Ever injecting illicit drug	2 300	0	1 600	4 700	0	9 300

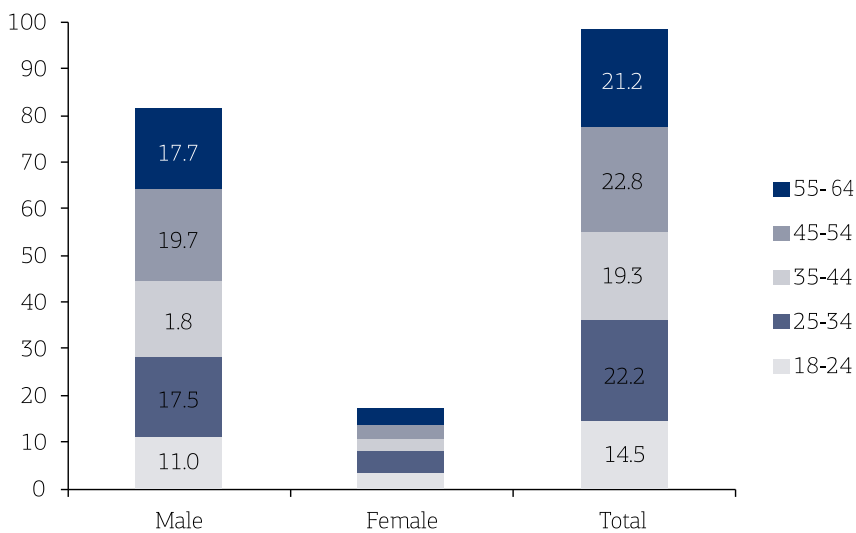
Note: \* More than 9 litres of 100% alcohol in females and 16 litres of males in the last 12 months.\*\* Drinking of 60 grams and more at least once a week during the last 12 months.\*\*\* Due to the low frequency in a population, the estimated number is likely underestimated.

Daily smoking is almost equally distributed across both genders and all age groups – Figure 8. Risky alcohol consumption is much more prevalent among men with relatively equal distribution within age groups – Figure 9. The situation among daily users of sedatives and hypnotics is completely different – majority are women with prevailing age groups above 45 years of age. Problematic cannabis use is predominantly in male up to 45 years of age – Figure 10 and 11.

**Figure 8: Daily smokers of tobacco by gender and age groups (in %, n=1961)**

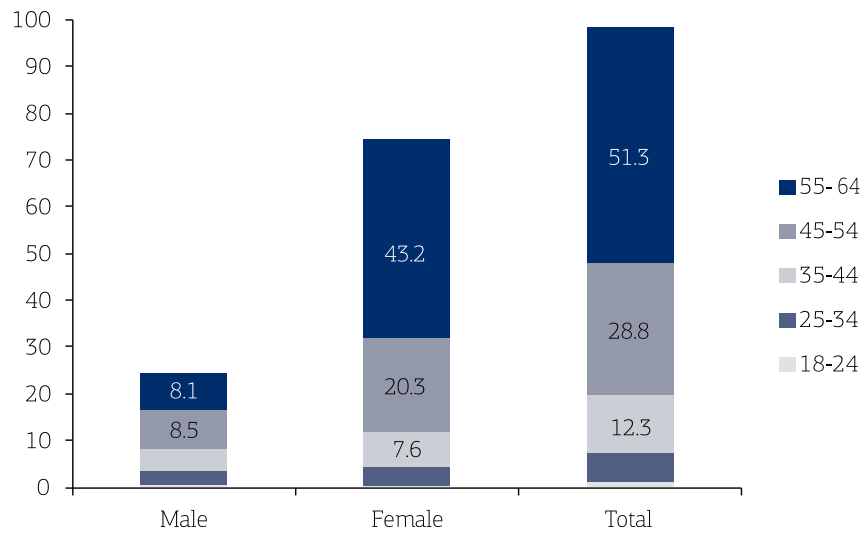


**Figure 9: Population in the risk of alcohol consumption (scoring 1 and more points in RAPS) by gender and age groups (in %, n=716)**

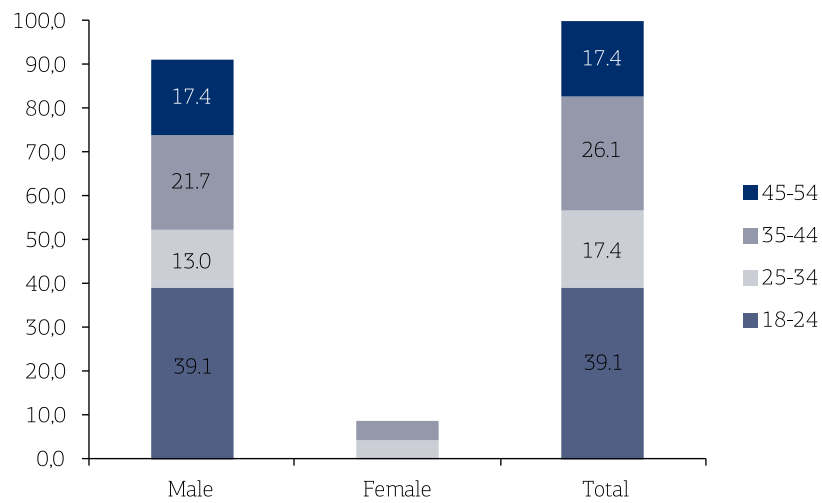




**Figure 10:** Population with daily consumption of sedatives and hypnotics by gender and age groups (in %, n=236)



**Figure 11:** Problematic users of cannabis (scoring 2 and more points in CAST) by gender and age groups (in %, n=23)



Answers to the battery of questions on the harms caused by alcohol use showed, that some form of adverse consequences due to alcohol consumption was experience in the last 12 months by 9.9% respondents in the general population, approximately half of them experienced more than one harm – Table 16.

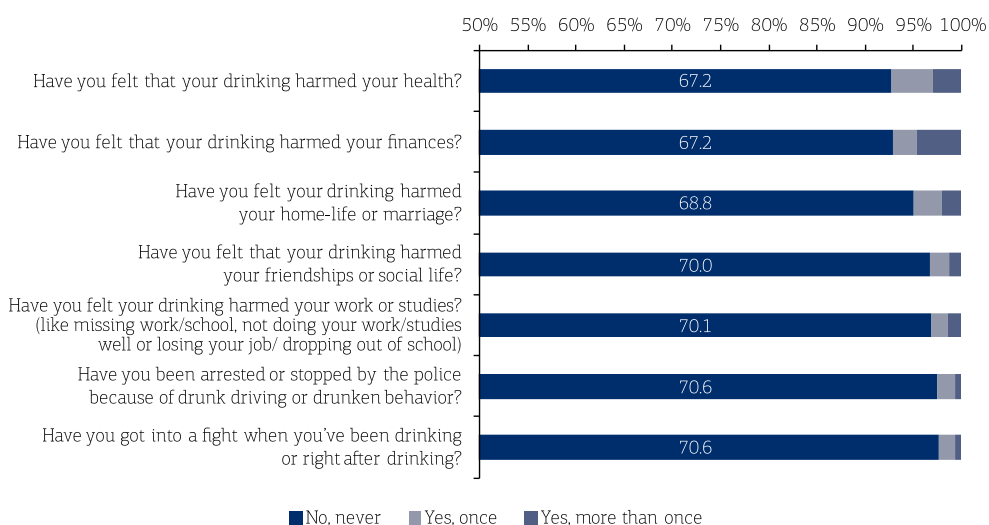
**Table 16: Number of adverse consequences due to alcohol use experienced in the last 12 months**

Number of adverse consequences	N	%
0	4850	90,1
1	230	4,3
2	129	2,4
3	82	1,5
4	45	0,8
5	23	0,4
6	17	0,3
7	10	0,2
Total	5385	100,0

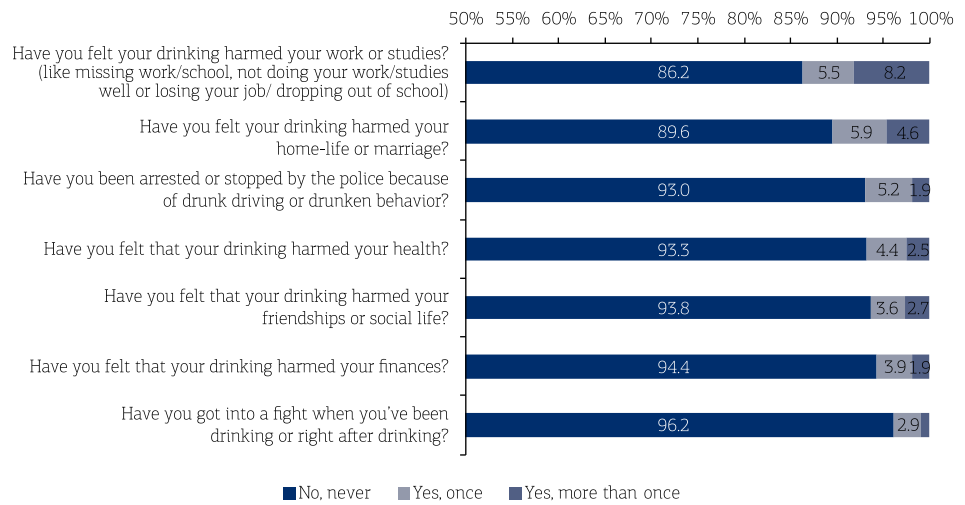
The most frequent perceived harm among alcohol consumers was adverse health consequence – see Figure 12a. However in the group of young males aged 18 –34, the harms are more prevalent – the most frequent was harm to work or studies, private life and police intervention due to drunk behaviour including drunk driving – Figure 12b.

Figure 13 shows harms from someone else’s alcohol drinking. Overall 32.2% report to have been affected by at least one of the listed situations in the last 12 months. The most often mentioned situation (17.2%) was to avoid places where alcohol drinkers are expected. 21.7% of the women reported to have gone a different way to avoid drunken and 12.7% of men.

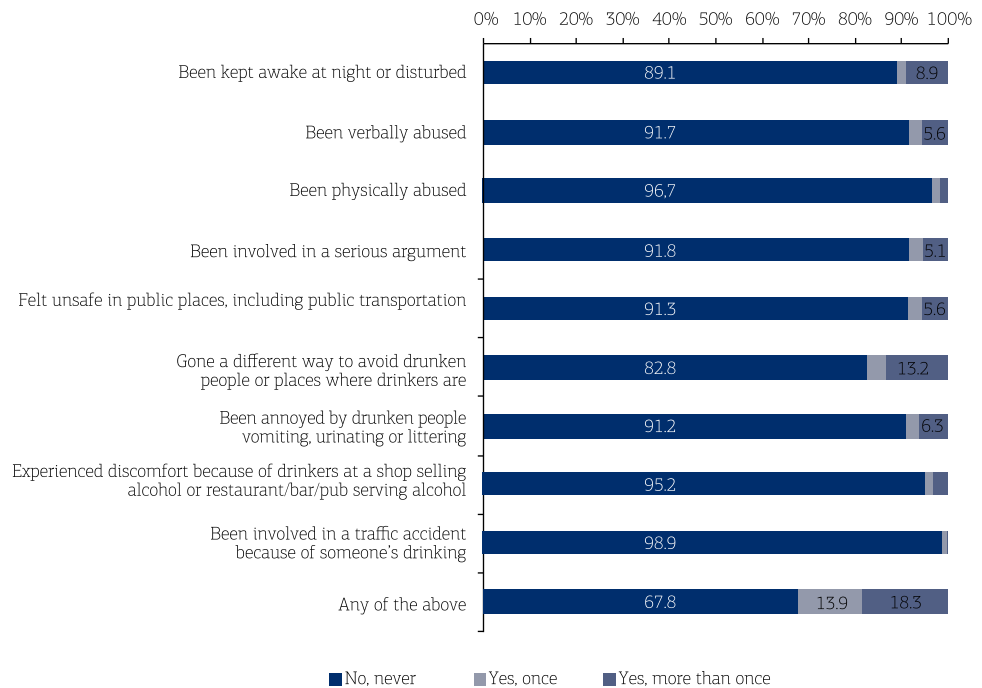
**Figure 12a: Frequency of selected harms caused by alcohol use among adult population 18–64 using alcohol in the last 12 months (n=3897)**



**Figure 12b: Frequency of selected harms caused by alcohol use among young adult men aged 18–34 using alcohol in the last 12 months (n=750)**



**Figure 13: Frequencies of harms caused by someone else's drinking in the last 12 months among adult population 18–64 (N=5 385)**



## 4. Estimates of problem drug use

The section for estimation of the prevalence of problem drug users (heroin users, injecting drug users) and drug addicts consisted of two different methods

The first one was the nomination technique for computation of population prevalence rate using 2 types of questions:

1. "How many members of your extended family (parents, children, grandparents, grandchildren's, brothers, sisters, cousins) are living in Serbia?" and a similar question "How many people do you recognize as your neighbours?"
2. "How many of them are drug addicts?" and modified questions on heroin users and injecting drug users.

For more information about potential reporting bias, question on the number of newborns either in family or in the neighbourhood was asked since the birth rate of the Serbian population is known from official statistics – 0.93% in 2012.

The population rate of drug addicts was then computed as the total number of drug addicts divided by the total number of family members or neighbours.

Another applied method was the nomination method for setting up the multipliers for 4 different administrative data (benchmarks) using the multiplier method (European Monitoring Centre for Drugs and Drug Addiction, 2009). The respondent was asked whether he or she 'knows personally any drug addict living in Serbia (people who use regularly drugs and experience problems)' and if the answer was positive, the respondent filled in the nomination form with more details about the person(s) – gender, age, primary drug, drug injecting and 4 variables used for construction of multipliers (involvement into inpatient treatment, substitution treatment, contact with needle and syringe programmes and death due to overdose within the last 12 months).

## 4.1 Estimates based on population prevalence rate

The reported numbers of family members and neighbours and drug addicts with corresponding proportions (prevalence rates) are given in Table 17 and Table 18. Data indicates 0.2% as the prevalence rate for drug addicts and 0.1% as the prevalence rate for heroin and injecting drug users among family members. Among neighbours a prevalence rate of 0.6% was found for drug addicts and 0.2% for heroin and injecting drug user. We can assume underreporting of drug users among family members; therefore the results should be assessed with caution since also the number of new-borns indicates a much higher birth rate than the official real birth rate in the Serbian population. This reporting bias can be explained by the assumption that respondents counted also children which were born earlier than 12 month ago.

**Table 17: Number of reported family members, new-borns and drug users in pre-defined categories therefrom with corresponding proportions**

Question	N	Sum	Proportion (%)	Proportion in population 15-64* (%)
How many members of your close family who live in Serbia are you close with and keep in touch?	5385	98056	-	-
How many of them were born during the last 12 months?	5358	3305	3.371	-
How many of your close family members are drug addicts (people who use regularly drugs and experience problems because of it)?	5359	165	0.168	0.246
How many of your close family members are heroin addicts (people who use regularly heroin and experience problems because of it)?	5359	50	0.051	0.075
How many in your close family members are injecting drug addicts (people who inject regularly drugs and experience problems because of it)	5359	36	0.037	0.054

Note: Family members were defined as parents, children, grandparents, grandchildren's, brothers, sisters, closer relatives. Proportions were computed just if both answers (numerator and denominator) were provided.\* Based on 68.3% of the population as this reflects the proportion of aged 15-64 in total general population.

**Table 18: Number of reported neighbours, new-borns and drug users in pre-defined categories therefrom with corresponding proportions**

Question	N	Sum	Proportion (%)	Proportion in population 15-64* (%)
How many people do you recognize as your neighbours?	5384	56294	-	-
How many of them were born during the last 12 months?	4897	1616	2.871	-
How many of your neighbours are drug addicts (people who use regularly drugs and experience problems because of it)?	4897	248	0.441	0.645
How many of your neighbours are heroin addicts (people who use regularly heroin and experience problems because of it)?	4897	91	0.162	0.237
How many of your neighbours are injecting drug addicts (people who inject regularly drugs and experience problems because of it)	4897	75	0.133	0.195

Note: Proportions were computed just if both answers (numerator and denominator) were provided.\* Based on 68.3% of the population as this reflects the proportion of aged 15-64 in total general population.

Population estimates (per total population) including 95% confidence intervals (95% CI) were constructed as an average rate of individual proportions weighted by the total number of reported family members (or neighbours). Results are provided in Table 19.

**Table 19: Prevalence rates for different categories of drug users per total population (%)**

Category of users	Central	95% CI: low	95% CI: high
<b>Based on estimates among family members</b>			
Drug addicts	0.168	0.154	0.183
Heroin users	0.051	0.043	0.058
Injecting drug users	0.037	0.032	0.042
<b>Based on estimates among neighbours</b>			
Drug addicts	0.441	0.416	0.465
Heroin users	0.162	0.147	0.176
Injecting drug users	0.133	0.120	0.146

Extrapolation of results above to the general population of Serbia is shown in Table 20. We can assume that results based on rates among family members are rather underestimated due to the negative perception of drug use in a society and reluctance to admit drug problem in the close family. That is why the results based on extrapolation of rates reported among the neighbourhood can be assumed as more reliable. According to them, there are approximately 32 thousand persons (95% CI: 30–33 thousand) with substantial problems with illicit substances, of them 12 thousand (95% CI: 11–13 thousand) of heroin users and 10 thousand (95% CI: 9–11 thousand) of injecting heroin users.

**Table 20: Estimates of number of drug users in predefined categories in Serbia – extrapolation of prevalence rates from 2014 General Population Survey (rounded to hundreds)**

Category of users	Central	95% CI: low	95% CI: high
<b>Based on estimates among family members</b>			
Drug addicts	12100	11000	13100
Heroin users	3700	3100	4200
Injecting drug users	2639	2280	2997
<b>Based on estimates among neighbours</b>			
Drug addicts	31700	29900	33400
Heroin users	11600	10600	12700
Injecting drug users	9600	8700	10500

## 4.2 Estimates based on multiplier method

Input data are provided in Table 21 and Table 22. There are multipliers based on the nomination form from the 2014 General Population Survey, which are basically proportions of known drug users meeting 4 predefined criteria (separately for heroin and injecting drug users) – either being in contact with defined type of services or deceased during the last 12 months. Each of the 4 multipliers has corresponding administrative data (benchmarks) to be multiplied.

**Table 21: Overview of the input data for estimates of heroin users using multiplier method by type of data (predefined benchmarks)**

Proportion of known drug addicts	N (excluding missing)	Central estimate	Multiplier		Benchmarks (administrative data)*	
			95% CI: low	95% CI: high	Description	N
Treated in inpatient drug treatment facility in the last 12 months	656	51.5%	47.7%	55.3%	Inpatients with primary drug opiates in 2012	1306
Treated in substitution treatment (e.g. methadone) for heroin addiction in the last 12 months	414	43.7%	38.9%	48.5%	Clients in OST in 2013	2460
Used syringe and needle exchange facilities in the last 12 months	221	23.1%	17.5%	28.6%	Clients in NEPs in 2013	4285
Died due to drug overdose in the last 12 months	834	11.0%	8.9%	13.2%	Deceased persons due to overdose by opiates and unspecified drugs	49

\* The data had been collected for the National Report on Drugs for the EMCDDA

**Table 22: Overview of the input data for estimates of injecting drug users using multiplier method by type of data (predefined benchmarks)**

Proportion of known drug addicts	N (excluding missing)	Central estimate	Multiplier		Benchmarks (administrative data)*	
			95% CI: low	95% CI: high	Description	N
Treated in inpatient drug treatment facility in the last 12 months	605	49.4%	45.4%	53.4%	Inpatients with primary drug opiates in 2012	1306
Treated in substitution treatment (e.g. methadone) for heroin addiction in the last 12 months	395	39.2%	34.4%	44.1%	Clients in OST in 2013	2460
Used syringe and needle exchange facilities in the last 12 months	215	20.9%	15.5%	26.4%	Clients in NEPs in 2013	4285
Died due to drug overdose in the last 12 months	768	11.7%	9.4%	14.0%	Deceased persons due to overdose by opiates and unspecified drugs	49

\* The data had been collected for the National Report on Drugs for the EMCDDA

Estimates with confidence intervals are provided in Table 23. It is obvious that the mortality rate of drug users was overestimated by respondents. It is also likely that the proportion of hospitalised users was overestimated since all kind of hospitalisation could be taken into account by respondents. The same is likely also for substitution treatment which could be confused with any other outpatient treatment. The highest estimate was obtained by multiplier method using data from syringe exchange programmes – estimated number of injecting drug users reached 20 thousand persons (95% CI: 16–28 thousand).

**Table 23: Overview of the multiplier method by type of data (predefined benchmarks)**

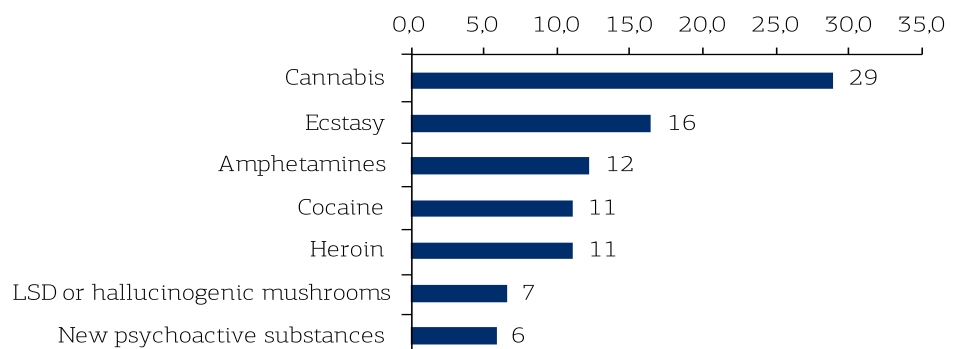
Benchmarks	Central	95% CI: low	95% CI: high
<b>Heroin users</b>			
Inpatients with primary drug opiates in 2012	2535	2360	2738
Clients in OST in 2013	5627	5072	6317
Clients in NEPs in 2013	18568	14966	24455
Fatal overdoses by opiates and unspecified drugs in 2012	444	372	550
<b>Injecting drug users</b>			
Inpatients with primary drug opiates in 2012	2643	2445	2874
Clients in OST in 2013	6269	5584	7146
Clients in NEPs in 2013	20473	16251	27659
Fatal overdoses by opiates and unspecified drugs in 2012	418	350	519



## 5. Perceived availability of drugs

The perceived availability of a specific drug corresponds with their prevalence rates – those drugs which are used more frequently are more available according to the respondents. The proportion of respondents who reported rather easy and easy access to a respective drugs within 24 hours was the highest for cannabis (29%) – see more in Figure 14.

**Figure 14: Perceived availability of drugs (sum of answers "rather easy" and "easy" to the question "How difficult or easy would it be for you personally to get the drug within 24 hours, if you wished to?"), (in % N=5385)**



Note: Offered answers were: impossible, difficult, neither easy nor difficult, rather easy, easy

The proportion of respondents who reported being offered a specific drug in Serbia within the last 12 months is relatively small, the highest proportion was found in cannabis (4%) – Table 24.

**Table 24: Proportion of respondents who were offered the drug in the last 12 months in Serbia (N=5385)**

Drug	Proportion (%)
Cannabis	4.3
Ecstasy	1.0
Amphetamines	0.9
Cocaine	0.6
Heroin	0.3
LSD or hallucinogenic mushrooms	0.3
New psychoactive substances	0.4

The usual way how cannabis consumers obtained cannabis was getting for free or sharing with others (73%); data indicate that cultivation as possible source of cannabis (answer 'other') is rather rare among cannabis users – Table 25.

**Table 25: The way how cannabis consumers obtained cannabis the last time when they used it (among those who used it within the last 12 months)**

Source for obtaining cannabis	N	%
Sold	14	16.9
Given for free or shared	62	73.6
Other	8	9.5
Total	84	100.0

## 6. Opinions and perceived risks

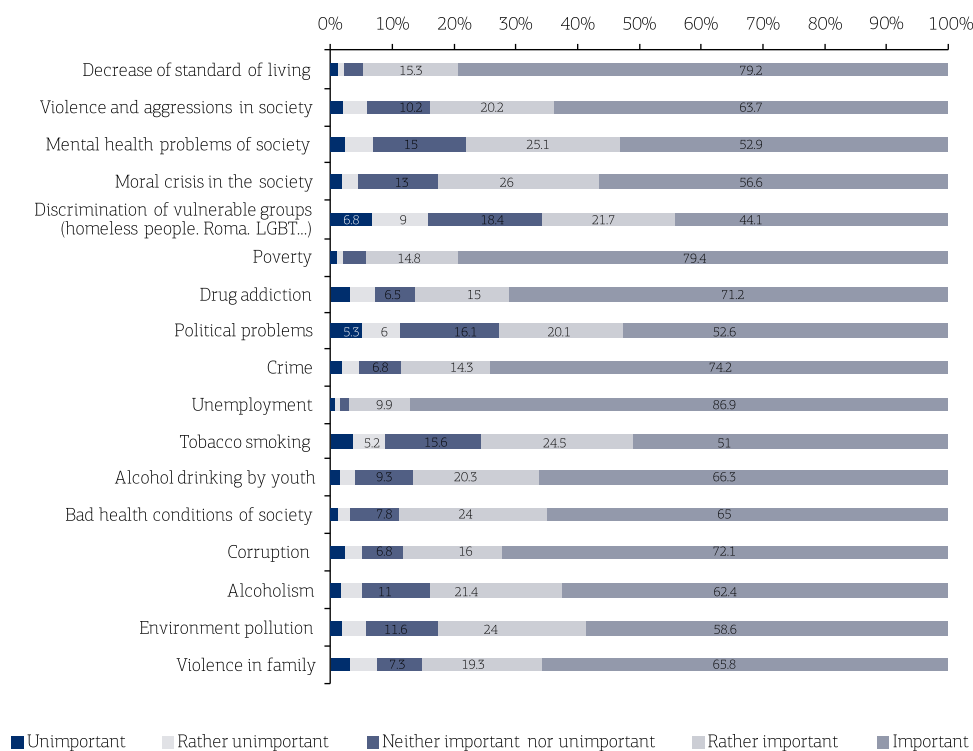
### 6.1 Opinions on social problems and alcohol policy measures in Serbia

The respondents were asked about opinions on drugs and alcohol problems in context with other social issues. They assessed the importance of each of 17 selected problems presented on a 5 point scale from very important to unimportant (Figure 15).

The highest importance was attributed to “unemployment” as 87% of the respondents recognize it as important problem in comparison with other problems in the society. The second priority was given to “poverty” (79%) followed by “decrease standard of living” (79%). “Drug addiction” is on the 6<sup>th</sup> position with 71% of the respondents considering it as important. “Alcohol drinking by youth” was at the 7<sup>th</sup> position (66%), “alcoholism” at the 10<sup>th</sup> position (62%) and “tobacco smoking” at the 16<sup>th</sup> position (51%).

In general psychoactive substance use is not recognised as one of the most important problems. Among substance-related problems drug addiction is seen as more important than alcohol addiction, although it is less prevalent. Tobacco smoking is at the end of ranking.

**Figure 15: Assessment of importance of selected problems in Serbia**



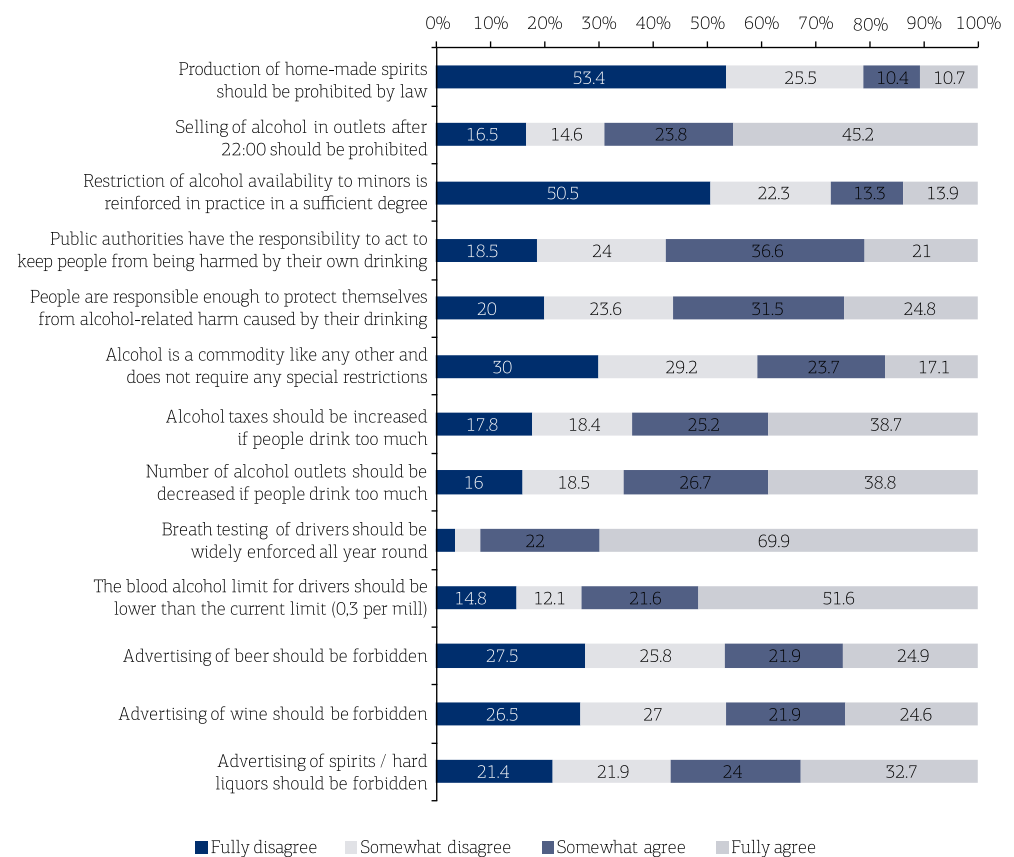
The alcohol policy measures need social acceptance and support to be effective. Opinions on 13 policy options were assessed ranging from restrictions on advertising, access and taxation to more ideological questions on the status of alcohol as a commodity (Figure 16).

Very high support was given to a policy aimed to reduce drinking and driving. Almost 70% of the population fully support the idea of wide enforcement of breath testing of drivers. More than half of the respondent (51%) is in favour of decreasing the blood alcohol limit for drivers from current 0.3 per mill.

High level of support is given to limit the hours of alcohol selling in outlets. The prohibition of alcohol selling after 22:00 is fully supported by 45% respondents and another 24 % rather agree.

In contrary the prohibition of the production of home-made spirits is not widely supported.

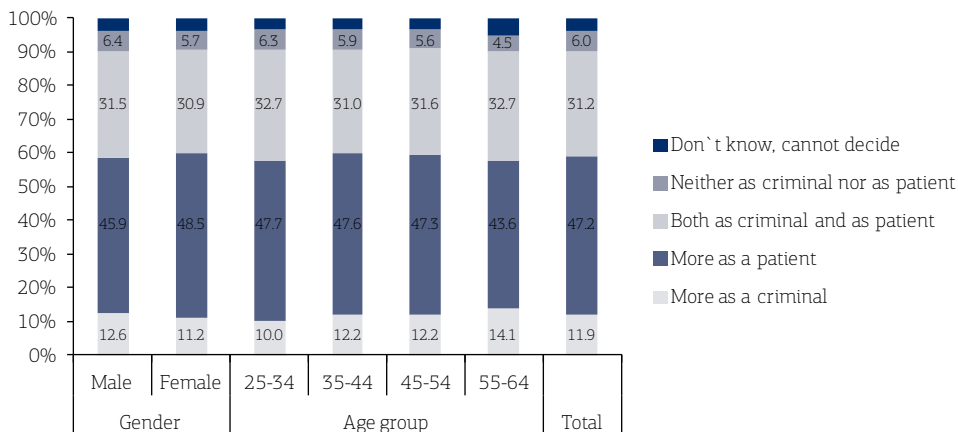
**Figure 16: Opinions about alcohol policy measures**



## 6.2 Attitudes towards drug use and drug users

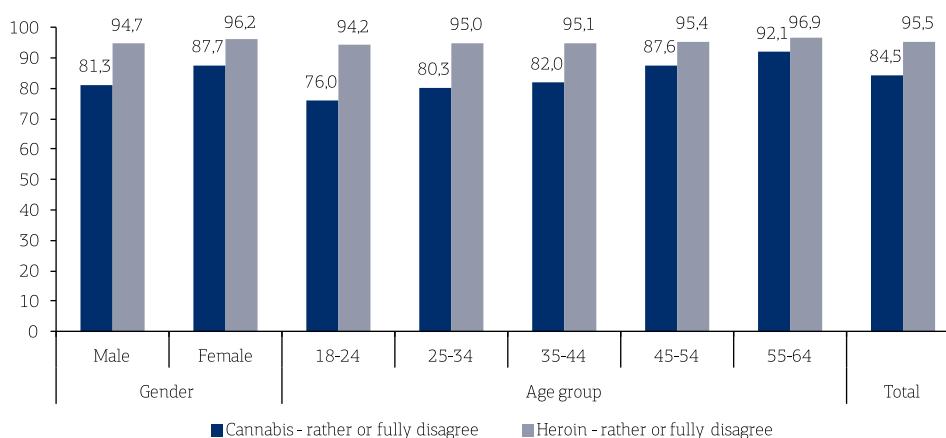
Approximately half (47.2%) of the Serbian population aged 18–64 perceives drug addicts rather as a patient, 31.2% as both patient and a criminal. Just 11.9% consider drug addict as a criminal – proportion of those perceiving drug users as criminals is higher among males and is slightly increasing with age – Figure 17.

**Figure 17: Perception of drug addict as a criminal or as a patient**



The majority of respondents rather or fully disagree with the statement that people should be allowed to use cannabis or heroin – 84.5% and 95.5%. The level of disagreement is higher in females and is increasing with age. While the level of disagreement with heroin use is very high in all categories, in cannabis the disagreement is significantly lower in younger categories – Figure 18.

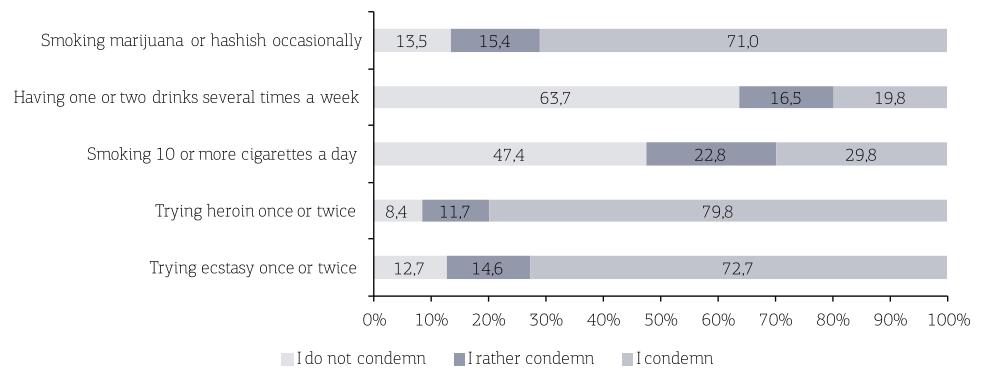
**Figure 18: Proportion of disagreement with the statements that people should be permitted to take cannabis and heroin (%)**



Serbian society has very different level of acceptance with different patterns of substance use. While regular heavy alcohol use is widely accepted and regular daily smoking is accepted by approximately half of the population, occasional patterns of illicit drugs use is widely condemned. The level of unacceptance is higher in

females and in older age groups – Figure 19 and Table 26. The perception of health harms related to selected patterns of different substances use is similar – regular heavy use of alcohol or tobacco is perceived much less harmful than regular use of cannabis or occasional use of ecstasy and cocaine – Figure 20.

**Figure 19: The condemnation with selected patterns of substance use by levels of condemnation**

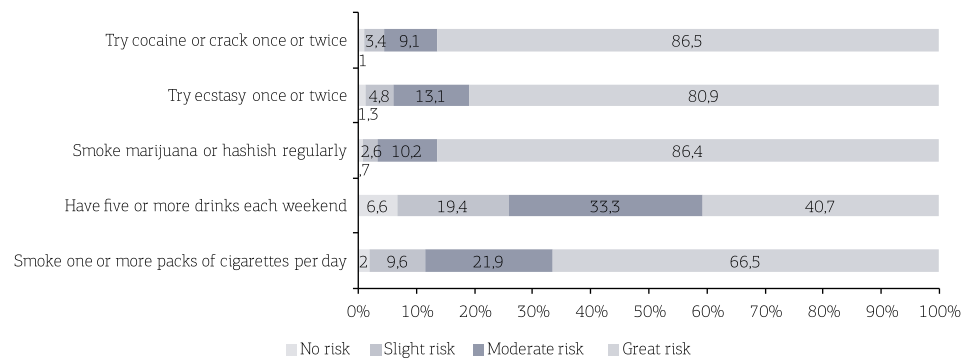


**Table 26: The level of condemnation with selected patterns of substance use by gender and age (mean scores)**

Behaviour	Gender		Age groups					Total
	Male	Female	18-24	25-34	35-44	45-54	55-64	
Trying ecstasy once or twice	2,6	2,6	2,4	2,5	2,6	2,7	2,8	2,6
Trying heroin once or twice	2,7	2,7	2,6	2,6	2,7	2,8	2,8	2,7
Smoking 10 or more cigarettes a day	1,7	1,9	1,8	1,7	1,8	1,8	2,0	1,8
Having one or two drinks several times a week	1,5	1,7	1,5	1,5	1,5	1,6	1,7	1,6
Smoking marijuana or hashish occasionally	2,5	2,6	2,3	2,4	2,6	2,7	2,8	2,6

Note: Used scoring – 1 = I do not condemn, 2 = I rather condemn, 3 = I condemn.

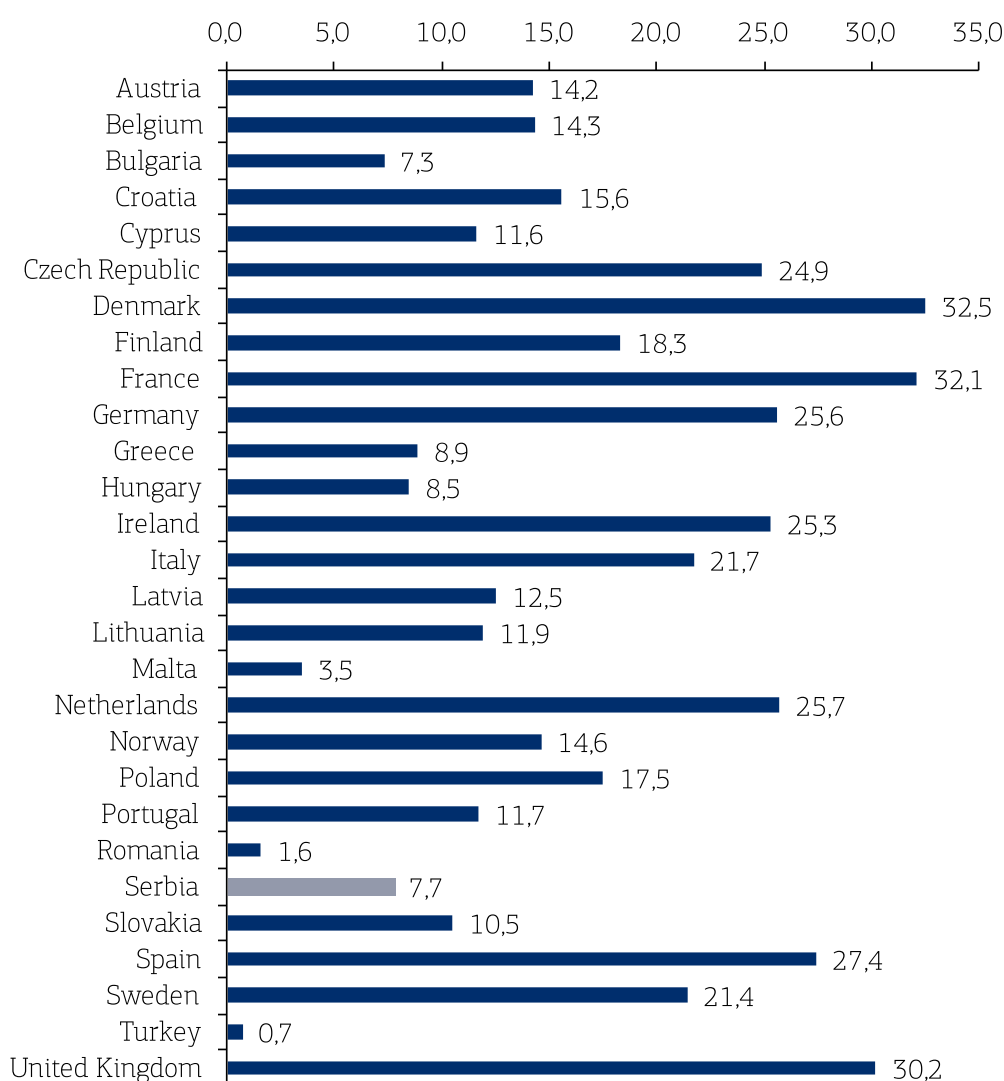
**Figure 20: Perceived health harms of selected patterns of substance use**



## 7. Comparison on substance use with other European countries

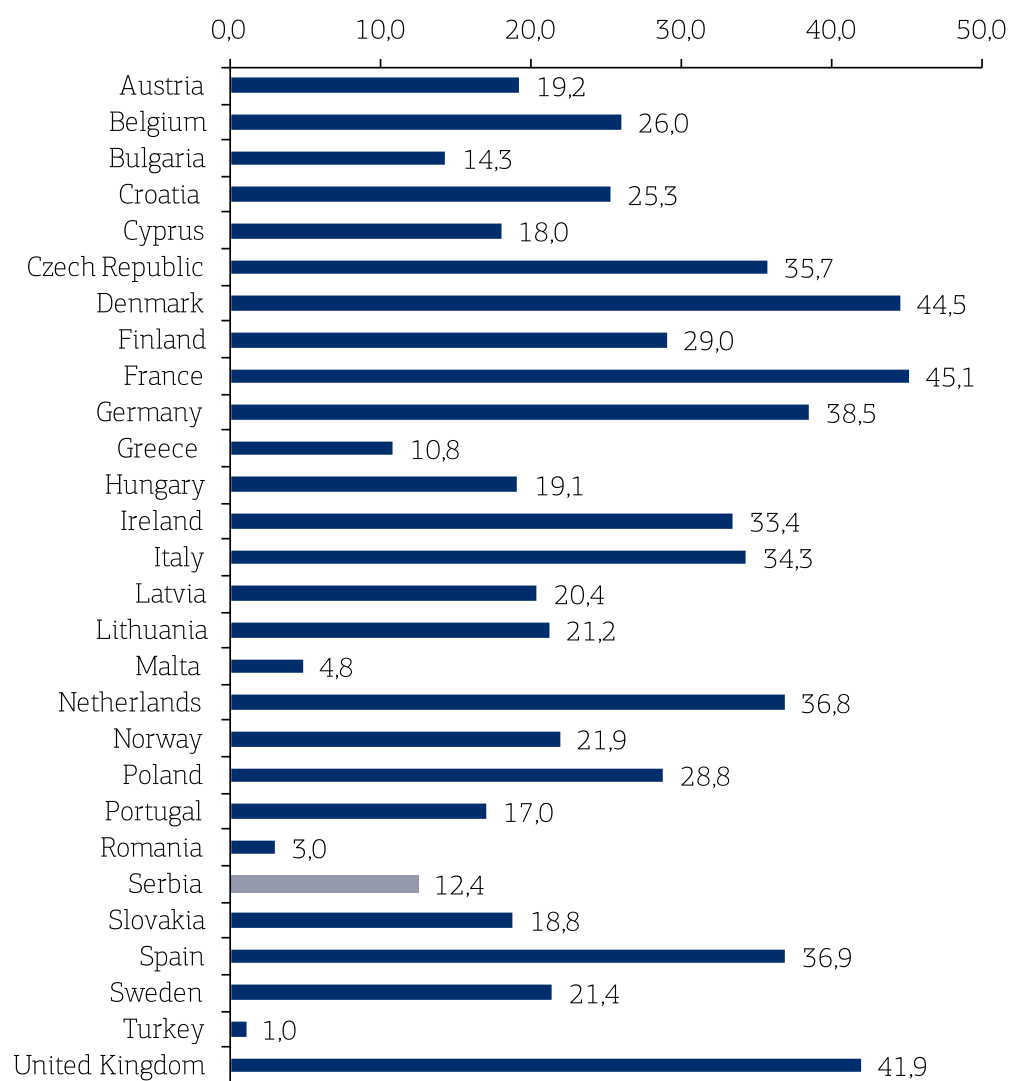
Prevalence of illicit drug use in Serbia as compared with EU countries is rather low or very low. In the adult population in general as well as among young adults up to 35 years of age, the prevalence of use of various drugs in Serbia is lower than in the majority of EU countries in all time horizons – lifetime, last year as well as last months (European Monitoring Centre for Drugs and Drug Addiction, 2013). This is true also for the most prevalent drug – cannabis. For example, cannabis use in young adults in the last 12 months is approximately 5 times less prevalent than in countries with the highest reported prevalence rates (United Kingdom, Spain, Poland, France, and the Czech Republic). For detailed information see Figure 21 – Figure 26.

**Figure 21: Lifetime prevalence of cannabis use by country among population aged 15–64 (or similar), most recent national general population survey available since 2000, for Serbia 2014 (%)**



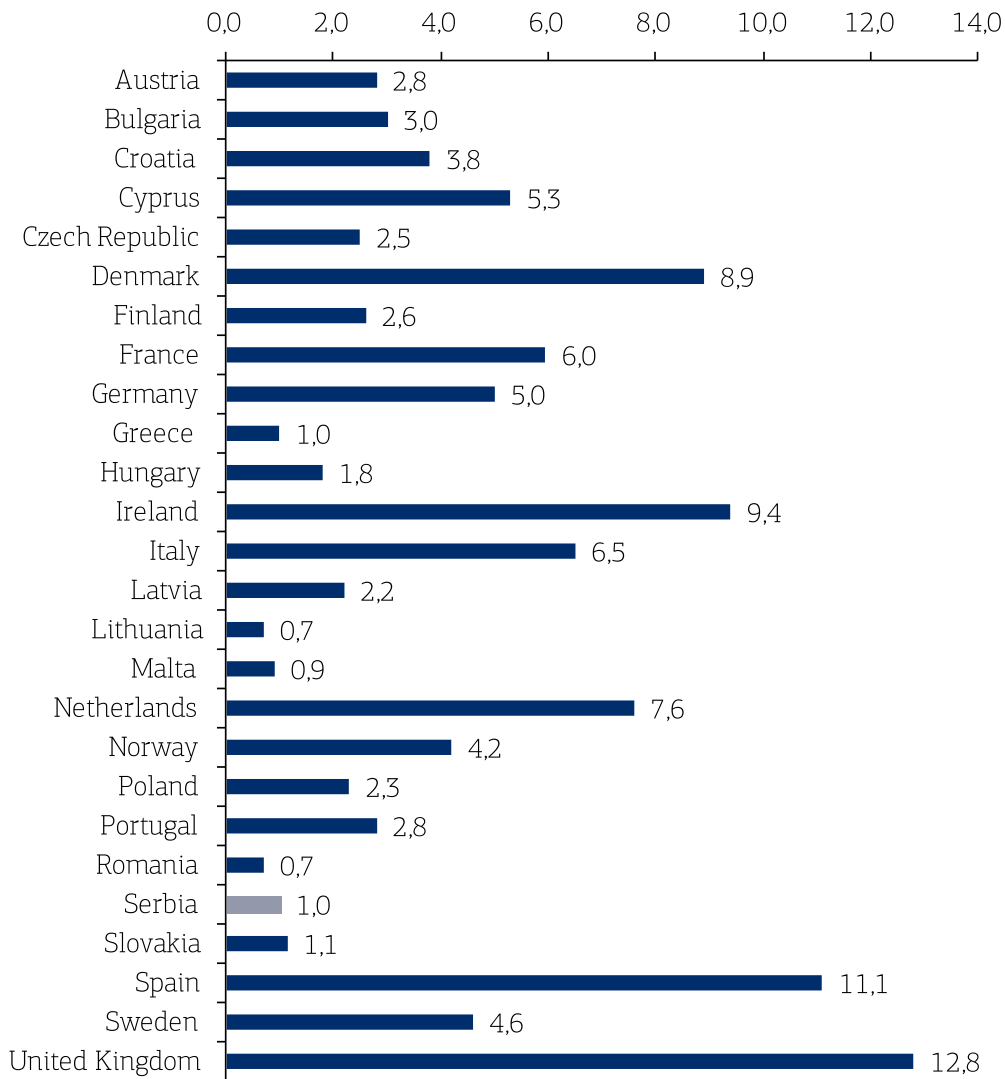
Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

**Figure 22: Lifetime prevalence of cannabis use by country among population aged 15–34 (or similar), most recent national general population survey available since 2000, for Serbia age group 18–34 from 2014 (%)**



Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

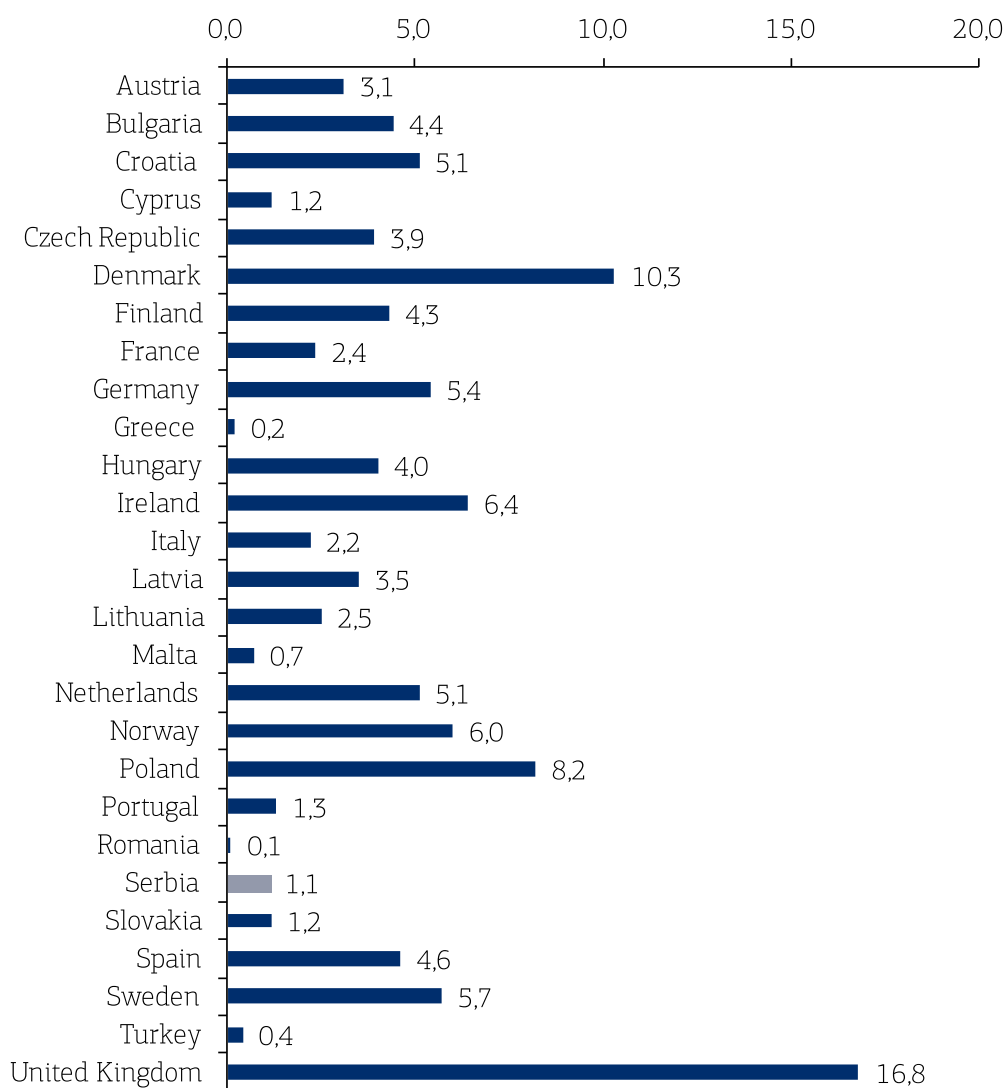
**Figure 23:** Lifetime prevalence of cocaine use by country among population aged 15–34 (or similar), most recent national general population survey available since 2000, for Serbia age group 18–34 from 2014 (%)



Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

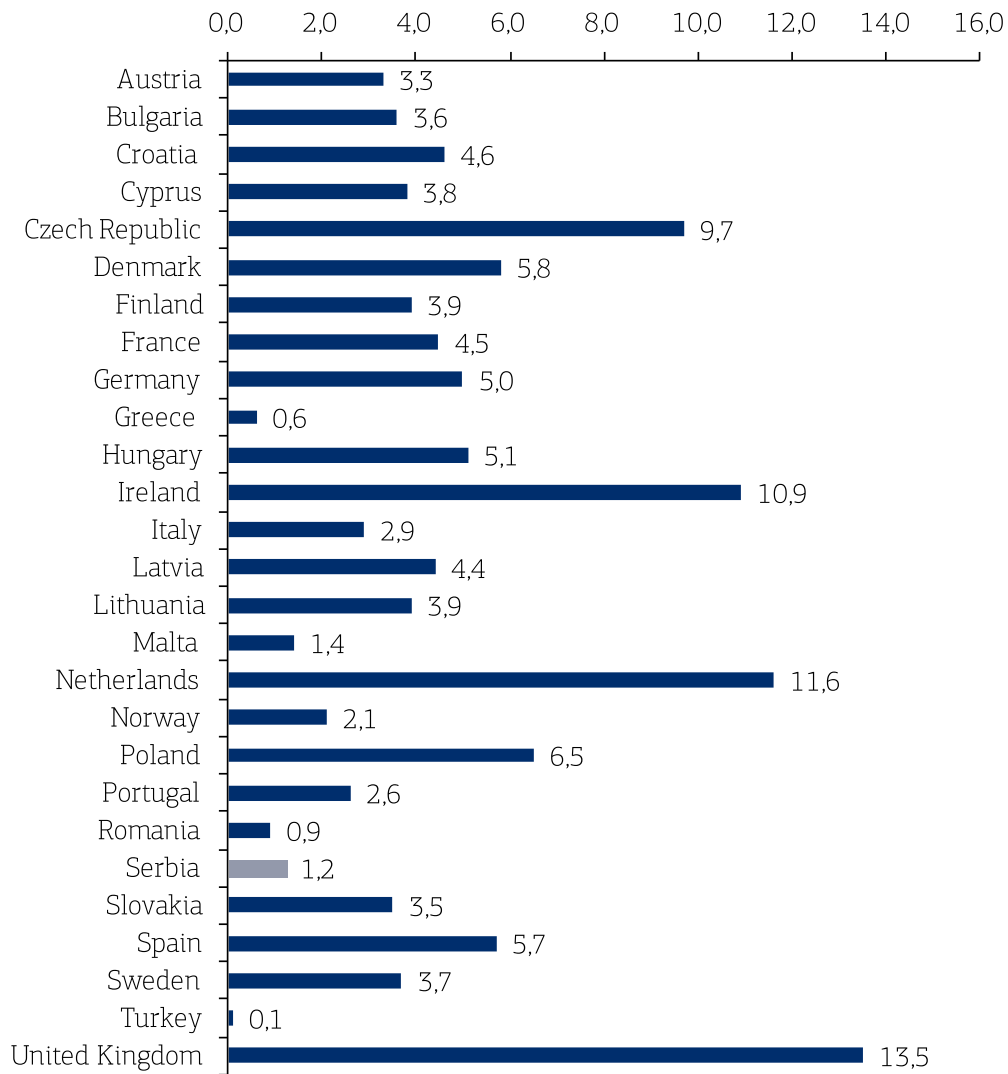


**Figure 24:** Lifetime prevalence of amphetamines use by country among population aged 15–34 (or similar), most recent national general population survey available since 2000, for Serbia age group 18–34 from 2014 (%)



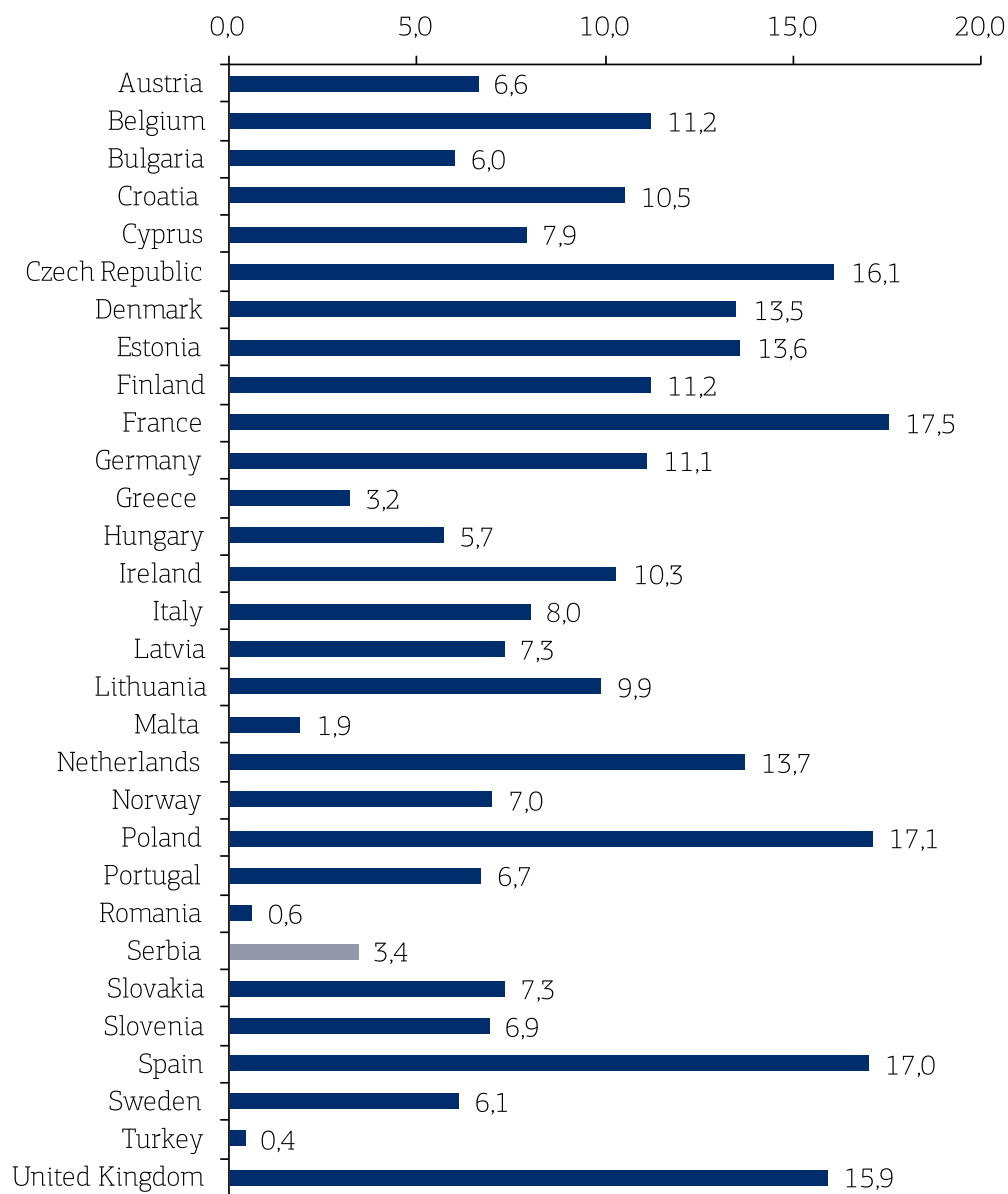
Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

**Figure 25: Lifetime prevalence of ecstasy use by country among population aged 15–34 (or similar), most recent national general population survey available since 2000, for Serbia age group 18–34 from 2014 (%)**



Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

**Figure 26: Last 12 months prevalence of cannabis use by country among population aged 15–34 (or similar), most recent national general population survey available since 2000, for Serbia age group 18–34 from 2014 (%)**



Note: Source of data for other European countries: European Monitoring Centre for Drugs and Drug Addiction (2013)

## 8. Gambling

By far the most prevalent gambling activity in Serbia is lottery (lotto, bingo, scratch ticket) – 54.6% of the adult population have ever gambled some form of lottery, 31.4% of them in the last year and 17.3% in the last months. Sport betting was the second most prevalent with 17.2% of the population gaming it during lifetime, 13.1% and 10.0% in the last year and in the last months, resp. Other forms of gambling are less prevalent, slot machines with lifetime prevalence of 5.5% is the third most prevalent form of gambling activity – Table 27 to Table 29.

While lottery gambling is equally distributed among gender and age groups, other forms of lotteries are more prevalent among men – for example 91.5% of those who bet on sport in the last 12 months are men predominantly up to 44 years of age – Figure 27 and Figure 28.

In total 3.7% of adult Serbian population is in some level of risk of problem gambling, 1.1–2.0% of them are in moderate and higher risk of problem gambling (problem gamblers), of them 0.3–0.7% in the high risk (pathological gambling). After extrapolation to Serbian population aged 18–64, estimates of problem gambling range between 51 and 93 thousand persons, of them 14–33 thousand of pathological gamblers.

In the highest risk of problem gambling are gamblers of casino games, slot machines and gamblers on-line – approximately 50% of those who gambled those games in the last 12 months are in some level of risk of problem gambling – Figure 29.

**Table 27: Lifetime prevalence of gambling in the general population by types of game**

Game	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
lottery products (lotto, bingo, scratch ticket)	56.2	52.9	52.0	54.6
sport betting and betting on other events	30.0	4.5	27.8	17.2
sport betting (‘prognosa’) such as TOTO	6.1	0.8	4.0	3.4
casino games	5.5	2.0	6.2	3.7
slot machines	8.9	2.0	8.0	5.5
on-line (internet) betting	1.3	0.2	1.7	0.7
on-line (internet) casino games	0.5	0.1	0.4	0.3

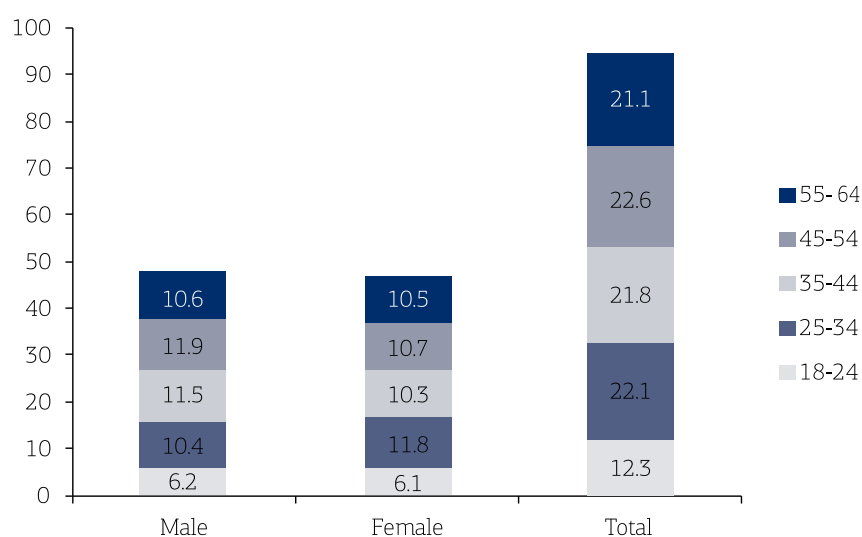
**Table 28: Last 12 months prevalence of gambling in the general population by types of game**

Game	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
lottery products (lotto, bingo, scratch ticket)	31.9	30.8	32.0	31.4
sport betting and betting on other events	24.1	2.2	22.6	13.1
sport betting ( ` prognosa ` ) such as TOTO	3.3	0.4	2.7	1.8
casino games	2.4	0.6	3.1	1.5
slot machines	3.1	0.5	3.6	1.8
on-line (internet) betting	0.9	0.1	1.4	0.5
on-line (internet) casino games	0.3	0.0	0.3	0.1

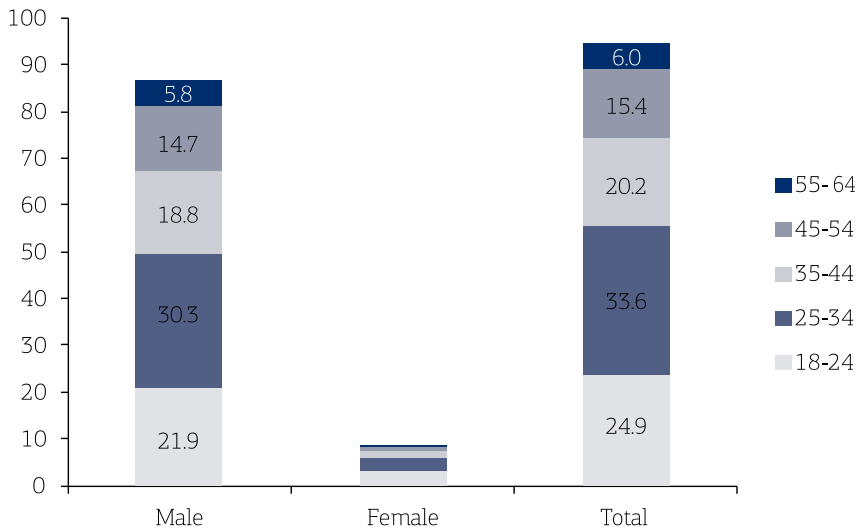
**Table 29: Last 30 days prevalence of gambling in the general population by types of game**

Game	Gender		Young adults	Total population
	Males	Females	18-34 years	18-64 years
	(n=2676)	(n=2709)	(n=1819)	(N=5385)
lottery products (lotto, bingo, scratch ticket)	19.1	15.4	15.2	17.3
sport betting and betting on other events	18.8	1.3	16.6	10.0
sport betting ( ` prognosa ` ) such as TOTO	1.8	0.1	1.3	0.9
casino games	1.1	0.0	1.3	0.6
slot machines	1.5	0.1	1.6	0.8
on-line (internet) betting	0.6	0.1	0.9	0.3
on-line (internet) casino games	0.1	0.0	0.2	0.1

**Figure 27: Gender and age distribution of respondents who gambled lottery in the last 12 months (in %, n=1689)**



**Figure 28:** Gender and age distribution of respondents who bet on sport and other betting in the last 12 months (in %, n=704)



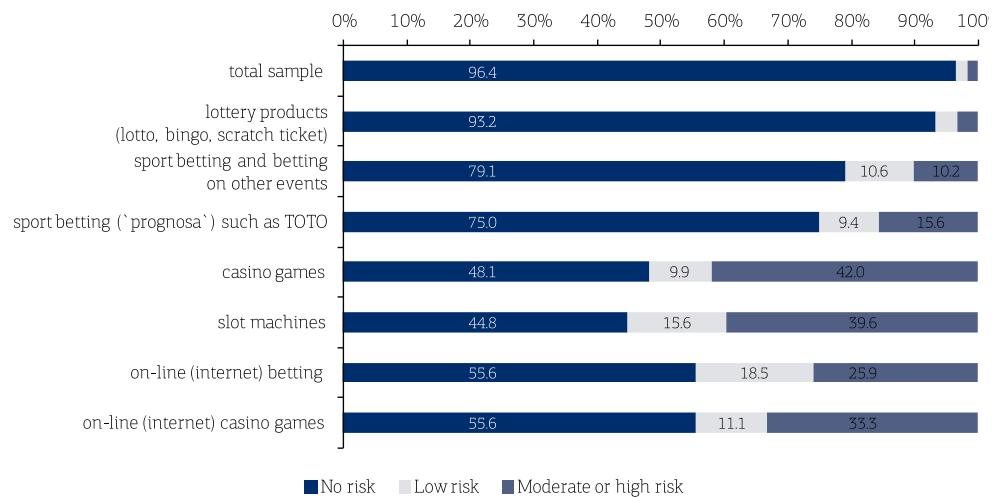
**Table 30:** Prevalence of problem forms of gambling (%)

Problem form of gambling	Gender		Young adults	Total population		
	Males (n=2676)	Females (n=2709)	18-34 years (n=1819)	18-64 years (N=5385)		
				Central	95% CI: low	95% CI: high
Low risk of gambling (PGSI 1-2)	3.4	0.4	2.8	1.9	1.6	2.3
Moderate risk of gambling (PGSI 3-7): problem gambling	2.2	0.1	1.9	1.2	0.9	1.5
High risk of gambling (PGSI 8+): pathological gambling	1.0	0.0	0.6	0.5	0.3	0.7
Problem plus pathological gambling (PGSI 3+)	3.2	0.2	2.4	1.7	1.3	2.0
Problem plus pathological gambling (Lie/bet 1+)	2.7	0.3	1.9	1.4	1.1	1.8

**Table 31: Prevalence estimates of problem and pathological gambling in absolute numbers after extrapolation to the population size (rounded to hundreds)**

Problem form of gambling	Gender		Young adults	Total population		
	Males (n=2676)	Females (n=2709)	18-34 years (n=1819)	18-64 years (N=5385)		
				Central	95% CI: low	95% CI: high
Low risk of gambling (PGSI 1-2)	78950	9405	44255	88795	74775	107489
Moderate risk of gambling (PGSI 3-7): problem gambling	51085	2351	30030	56081	42061	70101
High risk of gambling (PGSI 8+); pathological gambling	23221	-	9483	23367	14020	32714
Problem plus pathological gambling (PGSI 3+)	74306	4703	37933	79448	60754	93468
Problem plus pathological gambling (Lie/bet 1+)	62696	7054	30030	65428	51408	84122

**Figure 29: Proportion of various level of risks of problem gambling among respondents gambling in the last 12 months)**



## 9. Mental health

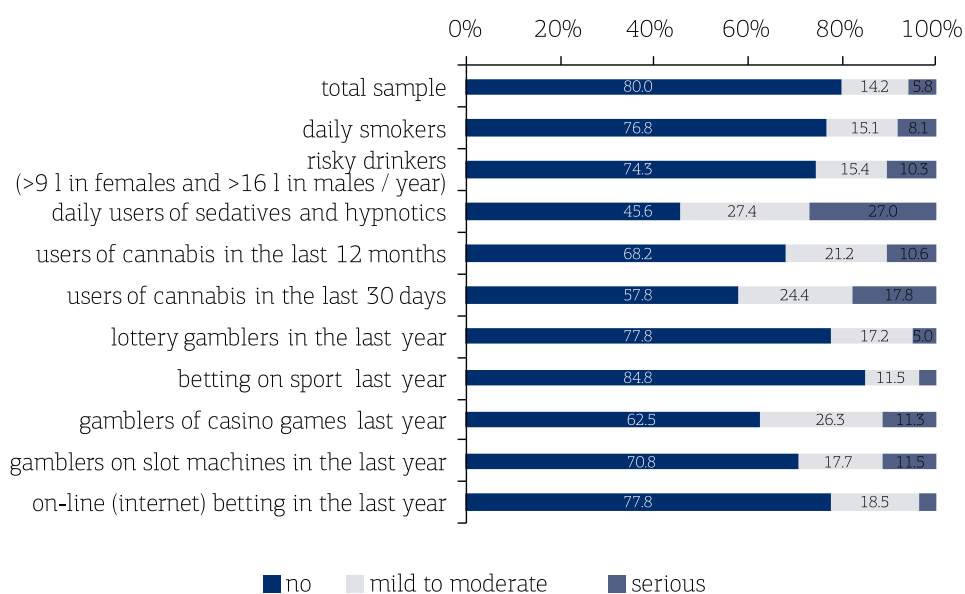
Psychological distress as measured by Kessler-6 screening tool is present in some form in 20% of adult population, in 5.8% the mood and anxiety disorders can be assessed as serious – Table 32.

The level of psychological distress is higher in some subgroups of substance users or gamblers – for example among daily users of sedatives, 54.4% are in some level of psychological distress. The high level of distress can be observed also among cannabis users or casino and slot machine gamblers – Figure 30.

**Table 32: Level of psychological distress (mood and anxiety disorders) among the adult population in the last 12 months**

Level of psychological distress	Frequency	Percent
no	4310	80,0
mild to moderate	766	14,2
serious	310	5,8
Total	5385	100,0

**Figure 30: Level of psychological distress (mood and anxiety disorders) in the total sample and subgroups of substance users and gamblers (%)**





## Bibliography

- BAGBY, R. M., QUILTY, L. C. & WATSON, C. 2012. CPGI - Population Harm: A Supplement to the Canadian Problem Gambling Index. Canadian Consortium for Gambling Research.
- BECK, F. & LEGLEYE, S. 2008. Measuring cannabis-related problems and dependence at the population level. In: EMCDDA (ed.) *A cannabis reader: global issues and local experiences, vol. II*. Luxembourg: EMCDDA.
- CURRIE, S. R., CASEY, D. M. & HODGINS, D. C. 2010. Improving the Psychometric Properties of the Problem Gambling Severity Index. Canadian Consortium for Gambling Research.
- CURRIE, S. R., HODGINS, D. C. & CASEY, D. M. 2013. Validity of the Problem Gambling Severity Index interpretive categories. *Journal of Gambling Studies*, 29, 311-327.
- EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION 2009. An overview of the problem drug use (PDU) key indicator. Lisbon: European Monitoring Centre for Drugs and drug Addiction.
- EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION. 2013. *Statistical bulletin 2013* [Online]. Lisbon: EMCDDA. Available: <http://www.emcdda.europa.eu/stats13> [Accessed 10 April 2014].
- FERRIS, J. & WYNNE, H. 2001. The Canadian problem gambling index: Final report. Submitted for the Canadian Centre on Substance Abuse.
- FURUKAWA, T. A., KESSLER, R. C., SLADE, T. & ANDREWS, G. 2003. The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being. *Psychol Med*, 33, 357-62.
- CHERPITEL, C. J. 2000. A brief screening instrument for problem drinking in the emergency room: the RAPS4. Rapid Alcohol Problems Screen. *J Stud Alcohol*, 61, 447-9.
- CHERPITEL, C. J., YE, Y., BOND, J., BORGES, G., CREMONTE, M., MARAIS, S., POZNYAK, V., SOVINOVA, H., MOSKALEWICZ, J. & SWIATKIEWICZ, G. 2005. Cross-national performance of the RAPS4/RAPS4-QF for tolerance and heavy drinking: data from 13 countries. *J Stud Alcohol*, 66, 428-32.
- JOHNSON, E. E., HAMER, R., NORA, R. M., TAN, B., EISENSTEIN, N. & ENGELHART, C. 1997. The Lie/Bet Questionnaire for screening pathological gamblers. *Psychol Rep*, 80, 83-8.
- KESSLER, R. C., ANDREWS, G., COLPE, L. J., HIRIPI, E., MROCZEK, D. K., NORMAND, S. L., WALTERS, E. E. & ZASLAVSKY, A. M. 2002. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med*, 32, 959-76.
- LEGLEYE, S., KARILA, L., BECK, F. & REYNAUD, M. 2007. Validation of the CAST, a general population Cannabis Abuse Screening Test. *Journal of Substance Use* 12, 233-242.
- MAITLAND, S. B. & ADAMS, G. R. 2007. Replication and generalizability of the Problem Gambling Severity Index: Are results consistent and comparable across studies? : Ontario Problem Gambling Research Centre.
- PIONTEK, D., KRAUS, L. & KLEMPOVA, D. 2008. Short scales to assess cannabis-related problems: a review of psychometric properties. *Substance Abuse, Treatment, Prevention and Policy*, 3.

- SIEROSLAWSKI, J., FOSTER, J. & MOSKALEWICZ, J. 2011. *Survey of european drinking surveys. Alcohol Survey Experiences of 22 European Countries* [Online]. Available: [http://www.alcsmart.ipin.edu.pl/files/prop\\_02.pdf](http://www.alcsmart.ipin.edu.pl/files/prop_02.pdf) [Accessed 24 April 2014].
- SMART PROJECT. 2011. *Pilot drinking survey report* [Online]. Available: [http://www.alcsmart.ipin.edu.pl/survey\\_methodology\\_main.html](http://www.alcsmart.ipin.edu.pl/survey_methodology_main.html) [Accessed 11 April 2014].
- SVETIEVA, E. & WALKER, M. 2008. Inconsistency between concept and measurement: The Canadian Problem Gambling Index (CPGI). *Journal of Gambling Studies*, 24, 157-173.



