Behavioural Insights into Alcohol Use among Young Adults in the Czech Republic:
Study Protocol

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INTRODUCTION: A recent survey of alcohol use in the Czech Republic representative for the adult on-line population presented some worrying findings about the use of alcohol during and in the last stages of the ongoing COVID-19 pandemic among young adults. The goal of this study is to gain insight into the behavioural drivers of alcohol use among young adults in the Czech Republic, including the enduring effects of COVID-19 pandemic, and use these insight to make recommendations for policies, programmes and interventions promoting more healthy drinking patterns among young adults and mitigating the negative impact of the pandemic. **METHODS:** A survey questionnaire will be used to collect information about alcohol use, the drivers of alcohol use and opinions on alcohol policy, price sensitivity and advertisement. The research questionnaire is based on standardized and validated questionnaires like AUDIT, DUDIT, DMQR, standard sociodemographic questions, and is supplemented by additional questions related to alcohol policy and other topics that are routinely researched at international level. Good practice recommendations were used to determine the alcohol consumption. **CONCLUSIONS:** The study will provide findings related to alcohol use among young adults, in particular the characteristics of the use and risk factors related to social determinants. The study can shed light specifically on the behavioural characteristics of the use and on the target group's perspectives on alcohol policy, exposure to alcohol advertising, especially in the social networks environment. The results of the study will be presented to alcohol policy makers, including suggestions for possible measures.

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1 INTRODUCTION

The Ministry of Health of the Czech Republic in collaboration with the World Health Organization (WHO) Country Office in the Czech Republic, supported by the WHO Regional Office for Europe, and the Charles University plan to conduct a study to explore and analyse behavioural factors of alcohol use among Czech young adults aged 18 to 26 years. Using a questionnaire, data will be collected once through online panels (CAWI) from September to November 2022.

A recent survey of alcohol use in the Czech Republic representative for the adult on-line population presented some worrying findings about the use of alcohol during and in the last stages of the ongoing COVID-19 pandemic among young adults (Barták et al., 2021). Compared to other age groups, individuals between 18–24 years had the highest rate of alcohol use in the last 12 months (mean AUDIT score) and the lowest level of health literacy, problematic health literacy was recorded in 27% and inadequate health literacy in 22% of individuals between 18–24 years. There was statistically significant difference in drinking with friends between young adults and other age groups, young adults drinking more with friends, and in addition to that young adults were drinking relatively more alone (approximately 15% of respondents). Young adults indicated using alcohol mostly for social reasons, but also for anxiety, depression, and to improve their mood and state of mind. Alarmingly, 25% of young adults stated that they believe that drinking alcohol is part of a healthy lifestyle, 19% reported experience of being ridiculed by others for not drinking alcohol, and 3% stated that they believe that drinking alcohol is healthy.

This evidence indicated that these adverse behaviours may have increased during the COVID-19 pandemic, and that these effects have not decreased as the pandemic was waning (Barták et al., 2021). Compared to pre-COVID-19 pandemics situation, 13% of young adults reported drinking more frequently and 3% significantly more frequently. This is more than in any other age group in the survey. Furthermore, compared to the situation before COVID-19 young adults reported the highest rate of alcohol use alone and had the highest prevalence of alcohol use before midday. About 13% of young adults stated they currently prefer drinks with a higher alcohol content than before the pandemics. This percentage is two times higher than in the 25-34 age group, and four times higher than in the group of 65 years or older.

2 OBJECTIVES

The goal of the study is to gain insight into the behavioural drivers of alcohol use among young adults in the Czech Republic, including the enduring effects of COVID-19 pandemic, and use these insight to make recommendations for policies, programmes and interventions promoting more healthy lifestyle among young adults and mitigating the negative impact of the pandemic.

The underlying objectives are to:

a) Analyse variables that are critical for understanding to drinking patterns among young adults and compare them with the available evidence about drinking patterns in the general population.

b) Explore the drivers of alcohol consumption among young adults and determine how these are associated with different patterns of alcohol use.

c) Explore individual level drivers of alcohol use among young adults (e.g. socio-economic factors such as age, gender, income (personal/household), place of residence, and those related to perceptions and beliefs, cultural context and social norms).

d) Gain insights into young adults' perception of alcohol policies and how these relate to alcohol use.

e) Explore how the price of alcohol for selected alcoholic beverages affects motivation and intentions to drink alcohol among young adults, and study how the price sensitivity is related to work intensity (e.g. having a part-time job while studying).

f) Explore through an experiment how providing information about the harmful effects of alcohol influences motivation and intention to drink alcohol.

3 STUDY DESIGN

A survey questionnaire (*Annex 1* https://doi.org/10.35198/01-2023-003-0002_quest) will be used to collect information about self-report alcohol use, the drivers of alcohol use and opinions on alcohol policy, price sensitivity and advertisement. The survey will take approximately 30–45 minutes to complete. Data will be collected via online panels (Computer-Assisted Self-Interviewing – CASI) by the survey research company Data Collect, s. r. o., and analysed using the IBM SPSS statistical package.

This is an observational study with voluntary participation in the specific age group of general population – young adults (18 to 26 years). We expect no or low risk for participants. Potential risks include only the inconvenience of the time taken to respond to the on-line survey. The information requested do not allow identification of respondents or subpopulation groups, including ethnic or disadvantaged groups. Due to strict data protection measures, any risk related to non-anonymous publishing of data from the survey is considered very low, and the personal harm for an individual respondent related to such an unlikely event is also considered to be very low. The participants in the survey might benefit from it gaining the sense of contribution to the society and being able to participate in shaping of the meningful evidence-based policy measures for young adults.

3.1 Research questions

Research questions intended to explore:

a) variables that are critical for understanding to drinking patterns among young adults aged 18–26 years, and how these interact,

b) drivers for drinking alcohol among young adults, and how these are associated with patterns of alcohol use.

To explore these research questions, the following variable domains will be used:

a) socio-demography,

b) alcohol use based on AUDIT questionnaire (in last 12 months and in the last 30 days),

c) cultural norms, social dynamics and other factors related to alcohol drinking,

d) change in alcohol use between the age of 16 years and the current age,

e) use of other substances (DUDIT questionnaire),

f) the drinking motives (social motives, enhancement motives, coping-anxiety, coping-depression, as well as conformity motives) (DMQR questionnaire),

g) opinion on evidence-based alcohol policy meaures and alcohol advertisement,

h) perception of the (post) COVID-19 related restrictions and changes, where the young adults are among those most sensitive to such issues in terms of alcohol drinking in comparison with other age groups.

3.2 Sampling

The survey will be conducted online, using existing web panels of respondents. The research company Data Collect, s. r. o. has its own online panel. The criteria for inclusion in the study apply to all persons between 18 and 26 years of age living in the Czech Republic that voluntarily agree to participate in the survey. Exclusion criteria are the age under 18 or over 26 years, residency outside the Czech Republic, and unwillingness to participate. In 2020, there were 914 625 young adults living in the Czech Republic (Czech Statistical Office). To obtain a high level of congruence between the distribution of the demographics in the sample and the adult population in the Czech Republic (age, gender, education, region and living area rural/urban), a sample size of n = 1500 respondents is recommended for the survey based on the conducted power analysis calculated by ClinCalc.com.

Quotas for quasi-representative sample size will be calculated based on age, gender, education, size of living area, and the region of residence in the Czech Republic. In order to collect a representative sample, we will prescribe quotas based on the information obtained from the Czech Statistical Office. The quotas shall follow the distribution of the young adult population in the Czech Republic in relation to age (distinguishing three categories: 18–20 years, 21–23 years and 24–26 years); gender; education (distinguishing four categories: 1) unfinished educational process; 2) does not study anymore and his/her gained education is only the (un)finished elementary school; 3) does not study anymore and his/her gained education is completed apprenticeship; 4) does not study anymore and graduated from a high school or gained a degree at a university); region (NUTS3) and population of the living area. The Data Collect, s. r. o. will be instructed to stick with the quota for each subcategory. The difference between collected proportion and aimed proportion should not be higher than 10% for age, gender and education (i.e. if the aimed quota for a given cell of the category is 20% then it is allowed to collect between 18% and 22% respondents falling in the given subcategory), and the difference between collected proportion and aimed proportion should not be higher than 15% for region and living area.

Special attention will be paid to young adults from lower income and education groups. Thus, in addition to the representative sample size of 1000 respondents, an additional sample of 500 respondents will be included in the research based on their sociodemographic situation. This dataset will be collected for the purpose of a deeper analysis of the people aged between 18 and 26 years who meet at least one of the following criteria:

- the household receives benefits (child benefit, housing benefit, unemployment benefit or material need benefits),

- the household is currently without permanent housing,

- the household income is lower than 50% of equivalised income median value in the Czech Republic,

- finished only elementary school and is not currently studying,

- long-term unemployement (more than 6 moths).

Only those who provide informed consent will be included in the research (see Safety Concerns below for consent procedures).

Participants are recruited online via panels established and administered by the research company Data Collect. Participants take part in this survey voluntarily. Members of the Data Collect, s. r. o. online panels may receive a small remuneration (for each survey they complete) depending on the length of the questionnaire. This support represents a minimal contribution for the participant's time, and the amount is not considered sufficient to influence individuals' participation or their answers. Data Collect will supervise and validate the sampling, supervise the data collection and data processing, and also submit and report the final database as a .sav file (format for SPSS) and an Excel spreadsheet. See below the data protection measures.

3.2 Methodology

A survey questionnaire (see *Annex 1,* https://doi.org/10.35198/01-2023-003-0002_quest) will be used to conduct the study. The survey takes approximately 30–45 minutes to complete. Data will be collected by the Data Collect company and than analyzed by the research team using the IBM SPSS statistical package and R software.

Validation

The research questionnaire is based on standardized and validated questionnaires AUDIT (Babor et al. 2001), DUDIT (Hildebrant, 2015), DMQR (Kutsche & Kutsche, 2009), standard sociodemographic questions, supplemented by further questions related to alcohol policy and other topics that are routinely researched at the international level (for details please see the attached questionnaire). Good practice recommendations (see Davson, 2003) were used to determine the alcohol consumption. Thus, the alcohol consumption is measured in the last 12 months and 30 days, as well as all relevant characteristics, i.e. quantity, frequency and binge drinking.

The first part of the questionnaire contains basic socio-demographic information about the respondent, including questions on gender, age, highest completed education, region of residence, current work status, or income. All of these questions are commonly used and surveyed, for example, by the Czech Statistical Office. The following section includes questions on health status and some aspects of quality of life (see, e.g., Lloyd & Pickard, 2019). The next section is devoted to alcohol use and includes questions from the standardised AUDIT questionnaire (Babor et al., 2001), and questions on age of the first use and first drunkenness. The further section includes questions on the type of alcoholic beverages used, reasons for alcohol use (Cooper, 1994), and use in the last 30 days, AUDIT-C (Higgins-Biddle & Babor, 2018). The next few questions focus on the family history as a significant predictor of alcohol use. In the next part of the questionnaire, the ABIS − Abbreviated Impulsiveness Scale is used to determine the potential risk factor of problematic alcohol use (Coutlee et al., 2014). The next section deals with an evaluation of alcohol policy measures and/or the acceptability of individual alcohol policy instruments (Kilian at al., 2019; Sierosławski et al., 2013). The following section addresses the issue of exposure to alcohol advertising (for relevance see, e.g., Sargent & Babor, 2020). The next section is dedicated to alcohol consumption in relationship to the COVID-19 pandemic that changed the use of alcohol in the Czech Republic as well as in other European countries (see Kilian et al., 2021). The final section includes questions on tobacco and other substance use, price sensitivity, information experiment (see below), and alcohol policy support (see above; *Table 1*)

Data collection

Data will be collected through a 30–45-minute online questionnaire. Data will be collected once. Data collected as part of this project belong to the WHO Country Office for the Czech Republic. Data will be collected by Data Collect, s. r. o., one of the leading companies in the field of market research and public opinion in Czechia. Data Collect, s. r. o. has been operating on the Czech market for a long time and provides its clients with comprehensive services and consultancy across their specializations (marketing research, advertising research, loyalty research, research in the field of pharmacy, media and the public sector). Data Collect, s. r. o. conducts qualitative and quantitative studies for clients from all sectors of the economy. The company is a member of the professional organizations ESOMAR, SIMAR, SAVA and follows their ethical principles and methodological rules.

Safety considerations

This type of surveys is, in principle, considered a low-risk research. The research contains negligible risks as there is no foreseeable risk of harm or discomfort other than potential inconvenience caused by the time required during participation. The study does not include deception and participants will be debriefed at the end of the survey. The study also involves only non-identifiable data about human beings. The variables and information requested do not allow to identify specific ethnic or disadvantaged population groups. There are very low physical or socioeconomic risks to participation in this study. No adverse events are foreseen. Participants provide informed consent before starting the questionnaire. The information notice will be available in the panel platform, and before accessing the questionnaire the respondents shall confirm (using a check box) that they have read the information notice. As a part of the informed consent, respondents are instructed that they can withdraw at any point and that this will not entail any negative consequences for them. As a debriefing, respondents are provided with a link to a web site with evidence-based information about harms of alcohol use (www.alkoholpodkontrolou.cz). Finally, they are informed about the possibility to withdraw their consent to use their data simply using a check box.

Data management and analysis

All analyses are exploratory and the presented analysis plan may be changed based upon requirements of the situation. The data analysis script will provide descriptive data, regression analyses and correlation analyses. Only completed questionnaires will be included in the analysis. Missing values will be treated as missing values and will not be imputed. Data Collect, s. r. o. will act as data controller. The survey data will be stored on Highly Secured Servers, monitored 24/7, kept for no longer than five years. Employees of Data Collect, s. r. o. handling or getting in touch with the panel members' personal data are required to sign a non-disclosure agreement.

Expected outcomes of the study

The study will provide findings related to alcohol use among young adults, in particular the characteristics of the use and partially also risk factors related to social determinants. The study can shed light specifically on the behavioural characteristics of the use and on the target group's perspectives on selected alcohol policy measures., The results of the study will be presented to alcohol policy makers, including suggestions for possible measures.

Table 1 | Rationale for selected questions

Question number in the questionnaire	Rationale
s06, s07 and s08	Questions focused on work intensity (e. g. having a part-time job while studying) has been included to the questionnaire in order to cover different patterns of working life among young adults (with regard to specifics of the targeted group). The questions are based on the standardized Statistics on Income and Living Conditions (SILC) questionnaire and adjusted to the target population of young adults. Details about work intensity will be studied in relationship to the price sensitivity (questions o47–o51).
s09, s10, s13, s14	Set of questions focused on the personal and household economic situation come from standardized questionnaires used by organizations such as Eurostat. Net monthly income is inquired by reflecting the at-risk-of-poverty situations (50% and 60% threshold) according to Eurostat, while ensuring symmetry of the scale. Question s12 is used to find out the number of household members and their age. This information is also needed for the calculation of the at-risk-of-poverty situation.
s15	The question asking about the housing situation is in line with the classification of inadequate housing commonly used by the Czech non-profit organisation Platform for Social Housing and other institutions operating in the Czech Republic.
o47-o51	The price sensitivity is elicited using the well-established Gabor-Granger method (1966) applied to the price of alcohol in this case. The price sensitivity is an important parameter for tax policies because it identifies the threshold price that people are willing to pay for different types of alcohol. Combining it with questions s01-s08, we can analyse how the price sensitivity differs based on personal characteristics (e.g. age, work intensity).
o52	This section employs the Information Provision Experiment described in detail by Haaland, Roth and Wohlfart, 2020 (and used e.g. in Haaland & Roth, 2020). This methodology inquires, in our case, how provision of evidence-based information on harmful impacts of alcohol consumption affects the short-term support of public policies. We use the official statistics of WHO as the source of evidence-based information on harmful impacts of alcohol consumption.
o53	This battery of questions elicit support for various public policies. These questions are a subset of o25 (the rationale of this battery of questions is discussed above).

Dissemination of results and publication policy

The findings will be shared with the Ministry of Health of the Czech Republic in a final report and a Power Point presentation. Key stakeholders working in the field of alcohol policy in the Czech Republic will receive the report and will be invited to a workshop to discuss the findings, recommendations for action, and the way forward.

Problems anticipated

No major problems are anticipated. Our main concern is the timing as we would like to proceed fast and mitigate the negative impact of COVID-19 on the alcohol habits of young people in the Czech Republic.

Ethics

Participation in this study presents no or minimal ethical concerns. Participation is voluntary and the results will be anonymized. An ethical approval from the Ethical Committee of the National Monitoring Centre for Drugs and Addiction has been obtained. Ethics Committee approval was given twice due to an addition of several questions to the original questionnaire. In its second decision, the Ethics Committee confirmed the questionnaire submitted for this study in its current form (decision No. EKNMS-13/2021). The Research Ethics Review Committee of the World Health Organization considered the study proposal (under No. ERC.0003828).

⬡ 4 DISCUSSION

We are of the opinion that further research into alcohol behaviours among young adults in the Czech Republic is an important priority. Diverse behavioural patterns were observed among young adults during the pandemic, when some increased and others reduced drinking. Thus, there are important differences in the group studied that have not been covered by any research so far. There is an urgent need to understand the factors including policy context that influence alcohol use among young adults in the Czech Republic in the aftermath of the pandemic, and to use this insight to develop interventions that can mitigate the negative impacts of the pandemics. Even before the pandemics, across different age groups, alcohol use was widespread in the Czech Republic and represented one of the important health risk factors in the Czech population (for details see WHO Global Information System on Alcohol and Health https://apps.who.int/gho/data/node.gisah. A1041?lang=en&showonly=GISAH).

The Czech Republic belongs to the countries with a high alcohol consumption, and also ranks high in the negative health conditions caused by alcohol consumption (Barták et al., 2019). The negative effects of alcohol use have been demonstrated in numerous health conditions (Barták et al., 2019). Alcohol use among adolescents is common and its use continues after they reach the age of 18 when they can legally buy alcohol. Binge drinking is rather common among young adults, and creates a major health risk (Mravčík et al., 2021). The negative consequences of alcohol use in adolescents and young adults are well

documented. In these age groups, problematic and risky use of alcohol is not only a significant risk factor of morbidity, but also of mortality (Barták et al., 2019). While it is well known that alcohol use among adolescents is high in the Czech Republic (Mravčík et al., 2021), less is known about the specific use and behavioural determinants of alcohol use among young adults, including the issue of how these determinats interact, during the formative developmental age period between 18 and 26.

The literature indicates (Mravčík et al., 2021) that risk factors of alcohol use among adolescents/young adults include socio-demographic variables (gender, age, or socioeconomic status), family risk factors (including the family history of alcohol dependence and problem drinking, and acceptance of drinking in the family), peer risk factors (peers' attitudes, norms and substance use), personal risk factors (personality, psychopathology, values and beliefs), and behavioural risk factors (e.g. alcohol use patterns, reasons for drinking, use of other substances and/ or an excessive use of social media and digital technologies). An early initiation of alcohol use in adolescence may cause serious alcohol-related problems for the young adults who have been drinking since their teenage years. Another theme might be the implementation deficit of evidence-based policies, including so called "Best-Buys".

Like any other study, this study has its limitations. The first one relates to the online recruitment of participants that may exclude participants with limited digital literacy or access. However, given the young age group, this is considered highly unusual. Evidence shows that within the given age group, online presence is so widespread that an online survey is able to cover almost the entire population (Rehm et al., 2020). If quota sampling is used to ensure the sample as representative as possible, some population groups will be expected to be omitted in the overall sampling, including those experiencing disadvantage. In response to this challenge, and acknowledging the need to focus specifically on such population groups among the youth, concerted effort will be invested in reaching more respondents from these groups, as described above.

Self-reported behaviours are known to differ from actual behaviours, not least due to the social desirability effect. To limit this effect, the purpose of the study will be properly explained to the respondents, as well as the importance of providing answers in line with their real behaviours. They will also be encouraged not to answer if they feel uncomfortable responding to particular questions. Still, the findings related to behaviours should be interpreted carefully with this reliability limitation in mind.

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