

Cost-Effectiveness Analysis of Alcohol Screening and Brief Intervention in the Czech Republic. Study Design

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INTRODUCTION: Screening and brief interventions (SBI) consist of a variety of activities aimed at people who engage in risky alcohol drinking, but who are not severely alcohol-dependent. Many studies have proved that SBI might serve as a very effective tool for reducing alcohol consumption and the associated negative consequences. However, the rate of SBI provided by healthcare professionals in the Czech Republic is relatively low. Our aim is to perform a quantified economic evaluation of SBI in the Czech Republic and thus point out its high importance in the field of alcohol policy. **METHODS:** To reliably estimate the benefits of SBI, the authors will perform a pilot validation of its efficiency. Within selected patients, the level of alcohol consumption will be investigated (AUDIT questionnaire) together with the level of quality of life (SF-36 questionnaire) before the intervention, and then again six months after the intervention. Respondents will be approached in

collaboration with cooperating general practitioners. The authors will use cost-effectiveness analysis (CEA) as the main research technique. The decision analytic model (DAM) will include three key elements—a set of probabilities with different treatment outcomes, a set of costs for implementing each of the possible treatment outcomes, and the health benefits of each possible outcome. **CONCLUSIONS:** The authors are aware that demonstrating the effectiveness of SBI on a national level would require a significantly broad participant base. Nevertheless, the effectiveness of alcohol SBI in the Czech Republic has not yet been thoroughly investigated so far. This pilot validation is therefore a necessary basis for further follow-up studies targeting at-risk Czech alcohol consumers and the regulation of their addictive behaviour.

Keywords | Alcohol – Screening and Brief Intervention – Cost-Effectiveness Analysis

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1 INTRODUCTION

1.1 Alcohol consumption in the Czech Republic

The Czech Republic has long been at the forefront of average alcohol consumption (measured by consumption per capita) and the prevalence of high-risk addictive behaviour among its citizens. At the same time, the Czech Republic is very often criticized for insufficient regulation in this area (WHO, 2018a).

In 2019, the Czech Republic ranked in third place among the OECD countries (behind Latvia and Austria), with an average alcohol consumption of 11.9 litres of pure alcohol per capita (OECD, 2021). However, a representative study carried out by the National Institute of Public Health (2021) shows that the average consumption of alcohol in the Czech Republic is 8.0 litres of pure alcohol per capita. This difference is caused by different methodological tools, but it might indicate that the true level of alcohol consumption might be lower.

Moreover, the prevalence of hazardous alcohol consumption among the Czech adult population in 2019 was in the range of 16.8–17.6% and the prevalence of harmful consumption was in the range of 9.0–9.3%, which are above-average values in an international comparison (Mravčík et al., 2019). As the short-term intoxication consequences of alcohol consumption (especially road accidents) are over-represented in the Czech media, topics describing the consequences of alcohol for health, families, or economic costs seem to be marginal (Zachová et al., 2019).

As stated by the National Institute of Public Health (2021), the current prevalence of harmful drinking in Czech society is 8.8%, the prevalence of hazardous drinking is 8.1%, the prevalence of moderate drinking is 67.2%, and the prevalence of abstainers is 15.9%. Thus, 16.9% of the Czech population (approx. 1.8 million people) belong in the categories of risky or hazardous consumers of alcohol.

Despite a decrease in the overall alcohol consumption during the first months of the COVID-19 pandemic, financial distress and distress resulting from the changes in everyday life caused by the pandemic may increase current drinking levels within the risky drinking categories (Kilian et al., 2021). According to Winkler et al. (2020), there was a significant increase in the prevalence of weekly binge drinking behaviour among Czech alcohol consumers during the first wave of the COVID-19 pandemic, which rose from 4.07% in 2017 to 6.39% in 2020. This conclusion was also confirmed by Rossow et al. (2021), who performed an analysis of changes in alcohol consumption during the COVID-19 pandemic in eight European countries, including the Czech Republic. Their results showed that during the first months of the pandemic, alcohol consumption in the upper decile of drinkers increased, as did the prevalence of heavy drinkers.

Thus, evidence-based measures in alcohol policy should be increasingly implemented (Mravčík et al., 2019). It is also crucial for public health policies to make high-quality relevant data on the health burden related to harmful alcohol use more availa-

ble and accessible and integrate it into the set of monitoring and evaluation indicators for an effective national health policy (Šejvl et al., 2019).

1.2 Screening and brief intervention

According to the WHO SAFER strategy, governments should focus on five cost-effective interventions to reduce alcohol-related harm: 1) **S**trengthen restrictions on the availability of alcohol; 2) **A**dvance and enforce drink-driving countermeasures; 3) **F**acilitate access to screening, brief interventions, and treatment; 4) **E**nforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion, and 5) **R**aise the price of alcohol through excise taxes and pricing policies (WHO, 2018b).

Screening and brief interventions (SBI)—one of the most effective interventions suggested by the WHO—consist of a variety of activities directed at people who engage in risky drinking behaviour, but who are not severely alcohol-dependent (Babor & Higgins-Biddle, 2000; Babor, 2007). These activities mostly consist of the questioning of the patient through a standardized alcohol screening tool and the subsequent delivery of a brief intervention (within six–15 min) to those who screen positive for excessive alcohol consumption (Barbosa et al., 2020). Alcohol SBI generates costs savings and improves health in both emergency departments and outpatient settings (Barbosa et al., 2015). Many studies have proved that SBI might be a very useful and cost-effective tool for reducing alcohol consumption among high-risk consumers and the associated problems and harms (Moyer et al., 2002; Bernstein et al., 2005; Heather, 2012; Álvarez-Bueno, 2015; Quin et al., 2016; Barbosa et al., 2020).

According to Mravčík et al. (2019), the rate of implementation of SBI by health professionals in the Czech Republic is relatively low. SBI is performed regularly by only approximately half of physicians and exceptionally or not at all by almost a quarter of physicians. Moreover, according to the National Strategy to Prevent and Reduce the Harm Associated with Addictive Behaviour 2019–2027, the wider use of addiction-specific SBI in practice should be promoted (Secretariat of the Government Council for Drug Policy Coordination, 2019). The provision of SBI by health practitioners is relatively low even within the most endangered drinking consumer categories (45.1% within the risky drinking category and 53.2% within the harmful drinking category), which is also related to the relatively low level of recommendations provided and subsequent positive self-reflections of patients (National Institute of Public Health, 2021).

1.3 Research objectives

The overall aim of this study is to contribute to this field of research from the economic point of view with the design and quantification of an economic evaluation of SBI in the Czech Republic and, thus, to point out its high importance in the field of alcohol policy. Using various analytical and statistical methods and examining the economic cost of SBI performed by health practitioners, this study also explores the benefits con-

nected to a potential increase in the provision of this preventive regulatory tool. In doing so, the study seeks to estimate relevant costs related to the practical performance of SBI, with a subsequent comparison with the potential proportion of presumptive high-risk consumers reducing their alcohol consumption and the related socio-economic benefits.

To determine the efficiency of SBI in the Czech Republic, a pilot verification of changes in the level of alcohol consumption and related level of quality of life gained as a result of the provision of interventions to patients will be investigated. The results of the study based on relevant economic arguments might contribute significantly to the debate on the state of SBI in the Czech Republic and subsequently support the pressure for the consistent implementation of this preventive tool in the field of alcohol policy. Details about the evaluation method, targeted patient groups, and data collection are provided below.

2 METHODS AND ANALYSIS

2.1 Study design

Cost-effectiveness analysis (CEA) will be used as the main evaluation technique because of its relevance according to previous scientific research (Purshouse et al., 2013; Angus et al., 2014; Barbosa et al., 2020). The input values for the model include synthesis of the addictology and healthcare data (administrative data, survey data, interviews), the authors' own pilot verification of SBI results, and a literature meta-analysis. On the basis of the available and collected data, appropriate probabilistic scenarios of increased SBI provision by Czech health practitioners will be designed, with a subsequent comparison of the increase in costs and potential increase in health benefits within each scenario. The main benefit of the selected method is the opportunity it provides to compare the economic effectiveness of the different levels of intervention provided (Kraemer, 2007; Nystrand et al., 2020).

However, in order to reliably quantify and estimate the potential benefits of SBI in the Czech Republic, it is necessary to conduct pilot validation and data collection on a relevant sample of patients who received an intervention. Thus, within selected patients who meet the characteristics of a high-risk alcohol consumer, the level of alcohol consumption will be investigated (via the standardized AUDIT questionnaire), together with the level of their quality of life (via the standardized SF-36 questionnaire) before the intervention and then again six months after the intervention. On the basis of possible changes in the patients' responses, the potential effectiveness of the intervention will subsequently be determined and quantified.

2.2 Participants

Eligibility criteria

Participants who are classified into the harmful and risky drinking alcohol consumer categories, but who are not alcohol-dependent, are eligible for inclusion in the study. This includes

people who scored more than eight points (or more than seven points if the participant's age is higher than 65 years) as a result of the Alcohol Use Disorders Identification Test (AUDIT, defined below). The test is performed by a collaborating health practitioner during the screening procedure. The final decision on whether a patient should be included in the study will be entrusted to the collaborating health practitioner.

Further inclusion criteria are as follows:

- age 18 years and older;
- able to take part in the study (no cognitive impairments or language barriers);
- agreed to be part of the study by signing a written informed consent form (see detailed information in the Ethics and dissemination section).

Recruitment

The recruitment of patients will be organized in collaboration with the general practitioners who are contacted and agree to participate in the research and ensure the participants' recruitment and data collection. The healthcare professional uses his/her discretion during examination of his/her patients and decides whether the patient is a suitable research participant. The process of how general practitioners are approached by the research team and how data is collected and administered is outlined below.

Study groups

In this study, the researchers will divide participants into two study groups: a) the *research group* (i.e. *group A*) and b) the *control group* (i.e. *group B*). Participants within the *research group* (A) will be interviewed with the AUDIT questionnaire as well as the SF-36 questionnaire before the intervention and then six months after the intervention provided by the health practitioner. On the other hand, participants within the *control group* (B) will also be interviewed with both the AUDIT and SF-36 questionnaires twice (and six months apart) but will not receive the intervention from the health practitioner.

The changes in the results of the questionnaire surveys will then be compared a) within the study groups and b) between study groups A and B. Such a comparison will enable us to verify the effectiveness of the intervention and partly distinguish the effectiveness of the intervention from other social phenomena that influence the level of alcohol consumption.

2.3 Survey instruments

The data for the study will be collected through the two standardized instruments mentioned above:

Alcohol Use Disorders Identification Test (AUDIT)

AUDIT is a screening questionnaire aimed at the early detection of people at risk of alcohol consumption. The questionnaire reveals the level of severity of alcohol consumption

and allows people with alcohol problems to be identified and an appropriate follow-up intervention to be determined. The questionnaire contains of ten items (questions); the first three relate to hazardous drinking. The next three questions identify the prevalence of possible symptoms of dependence and the last four questions aim at indicators of harmful drinking (Babor & Higgins-Biddle, 2003; National Institute of Public Health, 2003). Moreover, translated Czech versions of the AUDIT-C screening instrument have proved to be a useful tool for the identification of risky alcohol consumption levels in a primary healthcare setting (Csémy et al., 2018).

This screening tool allows three levels of risk in alcohol drinking patterns to be recognized and recommends a subsequent intervention (from simple advice to further diagnostic testing and treatment). The questionnaire can be used in primary care (as a first step in a 'brief intervention') but can equally be used at schools, in workplaces, etc. (Babor & Grant, 1989).

SF-36 Questionnaire

SF-36 is a generic questionnaire aimed to assess health status among the general population. It is designed for self-completion by persons aged 14 years and older and for completion by trained interviewers in person or by telephone. All three models have been used successfully but require different forms and instructions. The questionnaire was designed for use in clinical practice—screening individual patients, research, health policy evaluations—comparing the medical costs of different diseases and monitoring the quality of life of specific and general populations (Ware, 1993; Jenkinson, 1999).

The questionnaire contains a total of 36 items divided into eight dimensions. Each item (question) contains several suggested answers based on a scale (e.g. Would you say that your health is overall? Excellent – 1, very good – 2, good – 3, fairly good – 4, poor – 5). The individual dimensions are: physical functioning, physical limitations, physical pain, general health, vitality, social functioning, emotional problems, and mental health (Petr, 2000).

2.4 Sample size

Quantitative analyses within the research group will be performed. To evaluate the efficiency of the intervention among patients who were provided with the intervention, the results of both questionnaire surveys (AUDIT and SF-36) collected before the intervention and again six months after the intervention will be compared and subjected to statistical evaluation. To detect the statistical significance of small to medium effects for continuous distributed variables on the country level (with $d \geq 0.40$, $\alpha = 0.05$, power = 80%), a group size of 100 participants should be ensured (Cohen & Hillsdale, 1988; Rosenkranz et al., 2019).

In addition, a comparative statistical evaluation of the results of the questionnaires between the *research group (A)* and *control group (B)* will be performed. To compare the results between these two study groups, the control group will consist of at

least 50 participants. Thus, the total sample size will amount to 150 persons.

2.5 Procedure

Fieldwork

Establishing collaboration with general practitioners is a crucial pillar for the purpose of this research regarding the data collection. Health practitioners will be contacted via an email that summarizes the main research objectives and briefly describes the activities and responsibilities related to participation in the research. The cover letter attached to the email will also be signed by a representative of the Association of General Practitioners of the Czech Republic—the largest voluntary organization of physicians in the Czech Republic, with 5,350 members (over 90% of the total number of GPs for adults in the Czech Republic).

Those who express an interest in participating in the research will then be personally visited by the research team members, the research project will be thoroughly explained, and printed questionnaires and written consent forms will be handed over. In addition, the research team members will also conduct a simulation of data collection and intervention delivery to show clearly how the whole process of data collection and intervention delivery will work and how time-consuming it will be.

We assume that the time allocation for the participating general practitioners will be as follows:

- completion of the AUDIT questionnaire in collaboration with the patient (four to five minutes)
- providing a brief intervention to the patient (five to ten minutes)
- administration (two minutes)

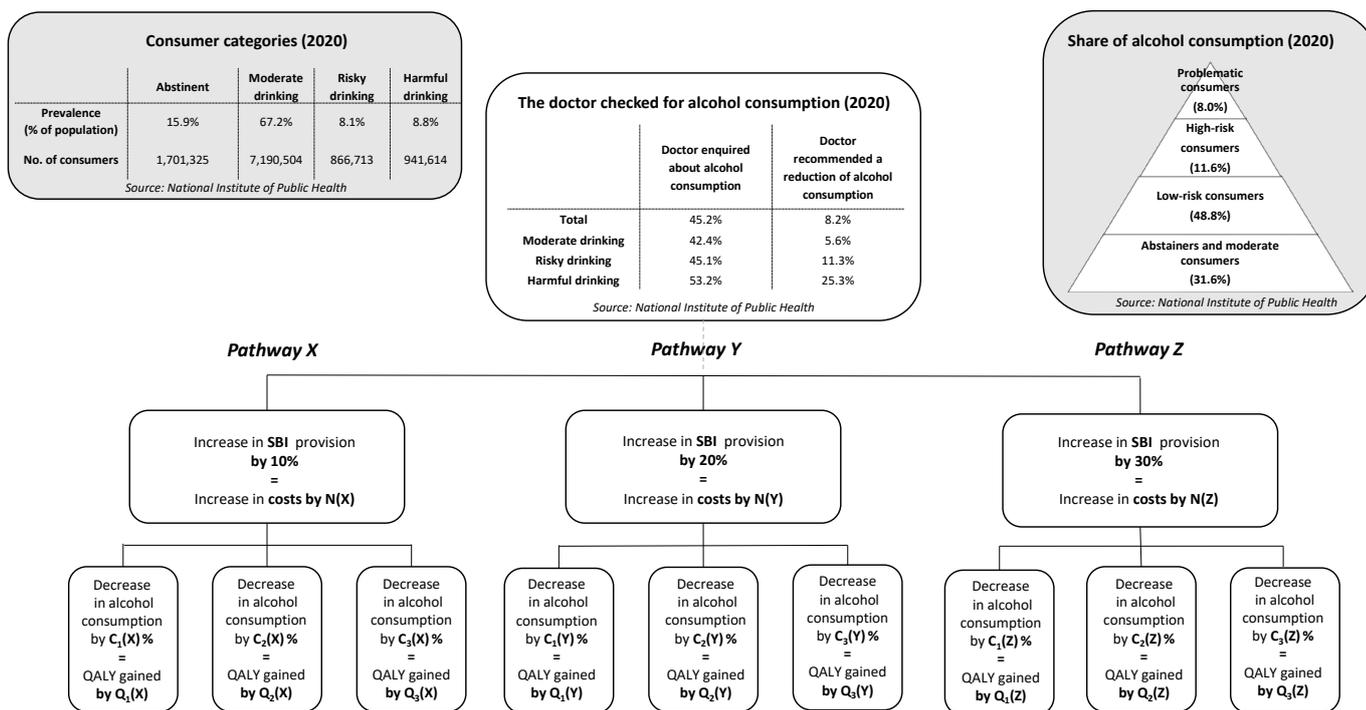
Moreover, the time allocation for a participating patient is assumed to be as follows:

- signing an informed consent (two minutes)
- completion of the AUDIT questionnaire in collaboration with a general practitioner (four to five minutes)
- receiving a brief intervention (five to ten minutes)
- completion of the SF-36 questionnaire (20 minutes)

Monitoring and data management

The questionnaires will be completed in written form and stored by the general practitioners. On an ongoing basis, the general practitioners will also be visited by members of the research team and any complications hindering data collection will be recorded. Once the data collection is complete, the written forms will be transcribed into electronic form. All participating patients will be assigned a unique code under which their results will be recorded.

Figure 1 | Decision model design



2.6 Planned analysis

The proposed analytical procedure follows (among other sources) methodological guidance suggested by Broulíková et al. (2020) and the WHO (2003).

Estimation of unit costs

First, the study quantifies the unit costs of SBI. The final cost value will consist of the sum of the costs of labour (using a time and motion approach to estimate the time practitioners take to deliver the service), materials, and space multiplied by the sum of the services provided in each probabilistic scenario. Second, potential training costs (training materials, trainer hours, travel costs, etc.) and potential marketing costs will also be quantified for further consideration (Navarro et al., 2011; Angus et al., 2014). Data on the estimation of the SBI costs will be derived from a synthesis of the literature meta-analysis and interviews with health practitioners and expressed in CZK (EUR).

Estimation of health effects

In considering the potential health effects of screening and brief intervention, the study consists of estimation using generic measures of health-related quality of life—QALY (Quality Adjusted Life Years) gained as a result of the reduction of the amount of alcohol consumed (measured by the above-defined SF-36 questionnaire). This indicator quantifies how much the patient’s quality of life has improved after the intervention. The sum of the additional QALYs gained among all the patients is then compared to the total cost of the intervention (Watson et al., 2013; Angus et al., 2014).

Cost-Effectiveness Analysis

Decision analytic modelling (DAM) will be used as a cohort simulation approach providing a framework for synthesizing available information from multiple sources, extrapolating beyond the time horizon of primary and secondary data, and evaluating the impacts of uncertainty (Barbosa et al., 2015; Hoang et al., 2016). The model predicts the number of risky drinkers who visit a general practitioner annually, the proportion of risky drinkers who are screened and provided with brief advice, and finally, the potential proportion of risky drinkers who reduce their alcohol consumption to a lower-risk level. The decision model includes a multiway analysis based on probabilistic scenarios with an increase in the level of SBI provided annually by 10%, 20%, and 30% respectively as realistic outcomes (pathways X, Y, and Z, respectively, illustrated in Figure 1), and to 100% of the patients who are screened as a “best-case” scenario. Within each scenario, the increase in costs will be compared with the potential increase in the health benefits conferred by the intervention. A similar method is followed, for example, by Tariq et al. (2009), who compared the implementation of a general practitioner’s intervention at the national level together with option zero (no intervention).

The final outcome of the designed cost-effectiveness analysis is expressed as a ratio of incremental costs relative to incremental positive effects in each scenario (level of intervention)—the incremental cost-effectiveness ratio (ICER; Barbosa et al., 2017).

Probabilistic sensitivity analysis

The sensitivity analysis will consist of many iterations of the model based on different combinations of parameter values. A cost-effectiveness acceptability curve will be designed that will indicate the percentage of repetitions, where the results will express the cost-effectiveness of the intervention under investigation at different limits of willingness to pay (comparing the cost-effectiveness probability with the willingness-to-pay threshold in CZK (EUR)/QALY). Considering the fact that the State Institute for Drug Control of the Czech Republic has set the acceptable limit of willingness to pay at CZK 1.2 million per QALY unit, multiple repetitions of calculations performed with the model based on different combinations of values of selected parameters enhances the relevance and robustness of the model (Broulíková et al., 2020).

2.7 Ethics and dissemination

Because of the sensitivity of participant information, ethical approval by the Ethics Committee of the Faculty of Social and Economic Studies of Jan Evangelista Purkyně University was requested by the project leader. Approval number 2021002 was issued on 8th July 2021 by the Committee and no violation of generally applicable moral principles was found.

Participant anonymity will be maintained within both the AUDIT and SF-36 questionnaire surveys. Only data directly related to the research will be collected and it will be ensured that this data cannot be linked in any way to a specific participant. All participants will be explicitly asked by their health practitioner to provide a signed informed consent to becoming part of the research. Before every data collection, a written informed consent form signed by the project leader will be distributed to every participant. The informed consent will also contain information about the rules related to the protection of sensitive personal data. In addition, each participant will be explicitly asked if he/she is willing to contribute to the research and whether he/she has read the informed consent carefully and understood every aspect.

The research findings will be disseminated in peer-reviewed, open-access journals as well as at scientific conferences, workshops, or debates. The results will also be shared with relevant government institutions involved in regulating addictive behaviour and minimizing the negative aspects of alcohol consumption in the Czech Republic. Additionally, the methodology that is designed and the research results will be a key part of the dissertation thesis of a member of the research team.

3 CONCLUSIONS

Strengths, limitations, and implications for future policy

SBI represents a relatively underused tool among Czech health-care professionals for reducing alcohol consumption and its negative socioeconomic consequences. Therefore, the conclusions of this study might contribute to the development of SBI in the Czech Republic, and on the other hand to emphasize the benefits to which this preventive tool can lead.

These initial calculated estimates, based partly on available data from the Czech environment, together with the authors' own unique collected data and synthesis of relevant research articles, can serve as a preliminary estimation of the potential impacts of increased SBI implementation in the Czech Republic. At the same time, the study draws attention to the thorough and wide collection of this relevant data in the future, which will allow the research results to be verified and accurate examination of the impact of SBI on alcohol consumption among Czech high-risk alcohol consumers to be quantified.

The authors are aware that demonstrating the effectiveness of this intervention at a national level would require a significantly broader participant base. Moreover, complications may arise in correctly defining all the relevant costs associated with the intervention and the appropriate method for quantifying the benefits of the intervention. However, the design of the economic evaluation is based on peer-reviewed scientific studies.

Thorough pilot validation of the effectiveness of SBI in the field of alcohol policy in the Czech Republic represents a necessary basis for further follow-up studies targeting at-risk Czech alcohol consumers and regulation of their addictive behaviour.

Authors' contributions: MF carried out the design of the economic evaluation and MB proposed a suitable approach to the data collection and cooperation with general practitioners. The literature review was carried out by both authors equally.

Declaration of interest: No conflict of interest.

REFERENCES

- Álvarez-Bueno, C., Rodríguez-Martín, B., García-Ortiz, L., Gómez-Marcos, M. Á., & Martínez-Vizcaíno, V. (2015). Effectiveness of brief interventions in primary health care settings to decrease alcohol consumption by adult non-dependent drinkers: A systematic review of systematic reviews. *Preventive Medicine*, 76 (Suppl.), S33–S38. <https://doi.org/10.1016/j.ypmed.2014.12.010>
- Angus, C., Latimer, N., Preston, L., Li, J., & Purshouse, R. (2014). What are the implications for policy makers? A systematic review of the cost-effectiveness of screening and brief interventions for alcohol misuse in primary care. *Frontiers in Psychiatry*, 5, Article 114. <https://doi.org/10.3389/fpsy.2014.00114>
- Babor, T. F., & Grant, M. (1989). From clinical research to secondary prevention: International collaboration in the development of the Alcohol Disorders Identification Test (AUDIT). *Alcohol Health and Research World*, 13, 371–374.
- Babor, T. F., & Higgins-Biddle, J. C. (2000). Alcohol screening and brief intervention: Dissemination strategies for medical practice and public health. *Addiction*, 95 (5), 677–686. <https://doi.org/10.1046/j.1360-0443.2000.9556773.x>
- Barbor, T. F., & Higgins-Biddle, J. C. (2003). *Krátké intervence u rizikového a škodlivého pití. Manuál pro použití v primární péči* (I. Suchardová, Trans.). National Institute of Public Health. http://www.szu.cz/uploads/documents/czzp/zavislosti/kratke_intervence_publikace_1_.pdf
- Babor, T. F., McRee, B. G., Kassebaum, P. A., Grimaldi, P. L., Ahmed, K., & Bray, J. (2007). Screening, Brief Intervention, and Referral to Treatment (SBIRT). Toward a public health approach to the management of substance abuse. *Substance Abuse*, 28 (3), 7–30. https://doi.org/10.1300/J465v28n03_03
- Barbosa, C., Cowell, A., Bray, J., & Aldridge, A. (2015). The cost-effectiveness of alcohol Screening, Brief Intervention, and Referral to Treatment (SBIRT) in emergency and outpatient medical settings. *Journal of Substance Abuse Treatment*, 53, 1–8. <https://doi.org/10.1016/j.jsat.2015.01.003>
- Barbosa, C., Cowell, A., Dowd, W., Landwehr, J., Aldridge, A., & Bray, J. (2017). The cost-effectiveness of brief intervention versus brief treatment of Screening, Brief Intervention and Referral to Treatment (SBIRT) in the United States. *Addiction*, 112 (Suppl. 2), 73–81. <https://doi.org/10.1111/add.13658>
- Barbosa, C., McKnight-Eily, L. R., Grosse, S. D., & Bray, J. (2020). Alcohol screening and brief intervention in emergency departments: Review of the impact on healthcare costs and utilization. *Journal of Substance Abuse Treatment*, 117, Article 108096. <https://doi.org/10.1016/j.jsat.2020.108096>
- Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., & Hingson, R. (2005). Brief motivational intervention at a clinic visit reduces cocaine and heroin use. *Drug and Alcohol Dependence*, 77 (1), 49–59. <https://doi.org/10.1016/j.drugalcdep.2004.07.006>
- Broulíková, H., Dlouhý, M., & Winkler, P. (2020). *Economic evaluation in health care: Focused on mental health*. National Institute of Mental Health.
- Cohen, J., & Hillsdale, N. J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates.
- Csémy, L., Dvořáková, Z., Seifert, B., Sovinová, H., & Harsa, P. (2018). Screening of hazardous and harmful alcohol consumption in a primary health care setting and in a general population survey. *Adiktologie*, 18 (3–4), 173–177.
- Heather, N. (2012). Can screening and brief intervention lead to population-level reductions in alcohol-related harm? *Addiction Science & Clinical Practice*, 7 (1), 1–14. <https://doi.org/10.1186/1940-0640-7-15>
- Hoang, V. P., Shanahan, M., Shukla, N., Perez, P., Farrell, M., & Ritter, A. (2016). A systematic review of modelling approaches in economic evaluations of health interventions for drug and alcohol problems. *BMC Health Services Research*, 16 (1), 1–14. <https://doi.org/10.1186/s12913-016-1368-8>
- Jenkinson, C., Stewart-Brown, S., Petersen, S., & Paice, C. (1999). Assessment of the SF-36 version 2 in the United Kingdom. *Journal of Epidemiology & Community Health*, 53 (1), 46–50. <http://doi.org/10.1136/jech.53.1.46>
- Kilian, C., Rehm, J., Allebeck, P., Braddick, F., Gual, A., Barták, M., Bloomfield, K., Gil, A., Neufeld, M., O'Donnel, A., Petruželka, B., Rogalewicz, V., Schulte, B., & Manthey, J. (2021). Alcohol consumption during the COVID-19 pandemic in Europe: A large-scale cross-sectional study in 21 countries. *Addiction*, 116 (12), 3369–3380. <https://doi.org/10.1111/add.15530>
- Kraemer, K. L. (2007). The cost-effectiveness and cost-benefit of screening and brief intervention for unhealthy alcohol use in medical settings. *Substance Abuse*, 28 (3), 67–77. https://doi.org/10.1300/J465v28n03_07
- Moyer, A., Finney, J. W., Swearingen, C. E., & Vergun, P. (2002). Brief interventions for alcohol problems: A meta-analytic review of controlled investigations in treatment-seeking and non-treatment-seeking populations. *Addiction*, 97 (3), 279–292. <https://doi.org/10.1046/j.1360-0443.2002.00018.x>
- Mravčík, V., Chomynová, P., Nechanská, B., Černíková, T., & Csémy, L. (2019). Alcohol use and its consequences in the Czech Republic. *Central European Journal of Public Health*, 27 (Suppl.), S15–S28. <https://doi.org/10.21101/cejph.a5728>
- Mravčík, V., Chomynová, P., Grohmannová, K., Janíková, B., Černíková, T., Rous, Z., Cibulka, J., Fidesová, H., & Vopravil, J. (2020). Výroční zpráva o stavu ve věcech drog v České republice v roce 2019 [Annual report on the drug situation in the Czech Republic in 2019]. Úřad vlády České republiky.
- National Institute of Public Health. (2020). Užívání tabáku a alkoholu v České republice 2019. [Tobacco and Alcohol Use in the Czech Republic in 2019]. http://www.szu.cz/uploads/documents/szu/aktual/Zprava_o_uzivani_tabaku_a_alkoholu_v_Ceske_republice.pdf
- National Institute of Public Health. (2021). Užívání tabáku a alkoholu v České republice 2020 [Tobacco and Alcohol Use in the Czech Republic in 2020]. http://www.szu.cz/uploads/documents/szu/aktual/nauta_2020.pdf
- Navarro, H. J., Shakeshaft, A., Doran, C. M., & Petrie, D. J. (2011). The potential cost-effectiveness of general practitioner delivered brief intervention for alcohol misuse: Evidence from rural Australia. *Addictive Behaviors*, 36 (12), 1191–1198. <https://doi.org/10.1016/j.addbeh.2011.07.023>
- Nystrand, C., Gebreslassie, M., Ssegonja, R., Feldman, I., & Sampaio, F. (2021). A systematic review of economic evaluations of public health interventions targeting alcohol, tobacco, illicit drug use and problematic gambling: Using a case study to assess transferability. *Health Policy*, 125 (1), 54–74. <https://doi.org/10.1016/j.healthpol.2020.09.002>
- Organisation for Economic Co-operation and Development. (2020). *Alcohol consumption (Indicator)*. <https://data.oecd.org/healthrisk/alcohol-consumption.htm>
- Petr, P. (2000). Dotazník SF-36 o kvalitě života podmíněně zdravím. *Kontakt*, 2 (1), 26–30.
- Purshouse, R. C., Brennan, A., Rafia, R., Latimer, N. R., Archer, R. J., Angus, C. R., Preston, L. R., & Meier, P. S. (2013). Modelling the cost-effectiveness of alcohol screening and brief interventions in primary care in England. *Alcohol and Alcoholism*, 48 (2), 180–188. <https://doi.org/10.1093/alcac/ags103>

Quinn, A. E., Brolin, M., Stewart, M. T., Evans, B., & Horgan, C. (2016, April). Reducing risky alcohol use: What health care systems can do. In *Issue Brief (Massachusetts Health Policy Forum)* (No. 46, pp. 1–50).

Rosenkranz, M., O'Donnell, A., Verthein, U., Zurhold, H., Addison, M., Liebrechts, N., Rowicka, M., Barták, M., Petruželka, B., Kaner, E. F. S., & Martens, M. S. (2019). Understanding pathways to stimulant use: A mixed-methods examination of the individual, social and cultural factors shaping illicit stimulant use across Europe (ATTUNE): Study protocol. *BMJ Open*, 9(8), Article e029476. <http://doi.org/10.1136/bmjopen-2019-029476>

Rossow, I., Bartak, M., Bloomfield, K., Braddick, F., Bye, E. K., Kilian, C., López-Pelayo, H., Mäkelä, P., Moan, I., S., Moskalewicz, J., Petruzelka, P., Rogalewicz, V., & Manthey, J. (2021). Changes in alcohol consumption during the COVID-19 pandemic are dependent on initial consumption level: Findings from eight European countries. *International Journal of Environmental Research and Public Health*, 18(19). <http://doi.org/10.3390/ijerph181910547>

Secretariat of the Government Council for Drug Policy Coordination. (2019). Národní strategie prevence a snižování škod spojených se závislostním chováním 2019–2027 [National strategy on the prevention of addictive behaviour and harm reduction 2019–2027]. Government of the Czech Republic.

Šejvl, J., Barták, M., Gavurová, B., Mašlánirová, M., Petruželka, B., Rogalewicz, V., Zacharov, S. & Miovský, M. (2019). Public health response to methanol mass poisoning in the Czech Republic in 2012: A case study. *Central European Journal of Public Health*, 27(Suppl.), 29–39. <http://doi.org/10.21101/cejph.a5764>

Tariq, L., van den Berg, M., Hoogenveen, R. T., & van Baal, P. H. (2009). Cost-effectiveness of an opportunistic screening programme and brief intervention for excessive alcohol use in primary care. *PloS one*, 4(5), Article e5696. <https://doi.org/10.1371/journal.pone.0005696>

Ware, J. E. (1993). *SF-36 Health Survey: Manual and interpretation guide*. Nimrod Press. https://www.researchgate.net/profile/John-Ware-6/publication/313050850_SF-36_Health_Survey_Manual_Interpretation_Guide/links/594a5b83aca2723195de5c3d/SF-36-Health-Survey-Manual-Interpretation-Guide.pdf

Watson, J. M., Crosby, H., Dale, V. M., Tober, G., Wu, Q., Lang, J., McGovern, R., Newbury-Birch, D., Bland, J. M., Drummond, C., Godfrey, C., Kaner, E., & Coulton, S. (2013). AESOPS: A randomised controlled trial of the clinical effectiveness and cost-effectiveness of opportunistic screening and stepped care interventions for older hazardous alcohol users in primary care. *Health Technology Assessment*, 17(25), 1–158. <https://doi.org/10.3310/hta17250>

Winkler, P., Formanek, T., Mlada, K., Kagstrom, A., Mohrova, Z., Mohr, P., & Csemy, L. (2020). Increase in prevalence of current mental disorders in the context of COVID-19: Analysis of repeated nationwide cross-sectional surveys. *Epidemiology and Psychiatric Sciences*, 29, Article e173. <https://doi.org/10.1017/S2045796020000888>

World Health Organization. (2003). *WHO guide to cost-effectiveness analysis*. <https://apps.who.int/iris/bitstream/handle/10665/42699/9241546018.pdf?sequence=1&isAllowed=y>

World Health Organization. (2018a, November 15). *Widespread consumption of alcohol and tobacco in Czechia continues to be cause for concern*. <https://www.euro.who.int/en/countries/czechia/news/news/2018/11/widespread-consumption-of-alcohol-and-tobacco-in-czechia-continues-to-be-cause-for-concern>

World Health Organization. (2018b). *The SAFER Interventions*. <https://www.who.int/initiatives/SAFER>

Zachová, K., Petruželka, B., Barták, M., & Rogalewicz, V. (2019). Media portrayal of alcohol does not match its real harm effects in the Czech Republic. *Central European Journal of Public Health*, 27(Suppl.), S66–S73. <https://doi.org/10.21101/cejph.a5826>