Alcohol and health in Central and Eastern European Union countries – status quo and alcohol policy options

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Abstract
The aim of this narrative review is to give an overview of alcohol consumption, attributable health harm, and potential alcohol control policies to reduce this harm in five Central and Eastern European Union countries: Czech Republic, Estonia, Latvia, Lithuania, and Poland. The overall level of alcohol consumption was high, with the two highest-consuming countries in the world

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AUTHORS’ CONTRIBUTIONS
JR prepared the concept of the paper and wrote a first draft. All authors helped collecting the data as part of the NIAAA project Evaluation of the impact of alcohol control policies on morbidity and mortality in Lithuania and other Baltic states. JR, MS, and SL obtained financial support. All authors critically revised and approved of the final manuscript.

DISCLOSURE
The authors report no conflict of interest.
being situated in Central and Eastern Europe (Czech Republic, Latvia), and all five of these countries being in the top 15% of World Health Organization member states with respect to consumption. Accordingly, alcohol-attributable health harm was high. Implementation of alcohol control policies could be improved, especially the implementation of pricing policies such as taxation increases. A moderate increase of the tax share on alcohol could result in thousands of lives being saved in Central and Eastern Europe in a single year. As taxation increases not only save lives, but also increase state revenue, the implementation of this alcohol control measure should be made a priority.

Keywords
alcohol drinking; mortality; burden of illness; policy

INTRODUCTION

The World Health Organization (WHO) European Region is characterized by the highest level of alcohol use globally, as measured by alcohol adult (15 years and older) per capita consumption (APC) in litres of ethanol (pure alcohol; see [1, 2]). Associated harm, as measured in alcohol-attributable fractions [3], was also highest in 2016, as evidenced by the last WHO Global Status Report on Alcohol and Health [1]. However, there are differences between areas within the region [4]. This contribution will focus on the Central and Eastern European Union (EU) countries, defined here as being comprised of the Czech Republic (CZE), Estonia (EST), Latvia (LVA), Lithuania (LTU) and Poland (POL). These countries were selected as they arguably constitute the region with the highest APC not only in Europe, but in the world [5]. Our objective is to characterize alcohol use in this region, describe alcohol-attributable harm, as well as potential avenues to reduce this harm.

MATERIAL AND METHODS

This narrative review is based on country-validated data on alcohol use, attributable burden, and alcohol control policies from the WHO [1, 5–8].

The modelling of the taxation increase was based on the following three-step procedure [9]:

- step 1 – we increased the tax share to at least 25% for all types of alcoholic beverages and set the price per unit of pure alcohol to be the same across all beverage types;
- step 2 – we applied price elasticities from meta-analyses to estimate consumption changes [9, 10] based on the economic theory that increases in price will lead to decreases in sales and thus consumption;
- step 3 – calculated the deaths averted as a result of the lowered level of alcohol consumption using alcohol-attributable fraction methodology [3].
RESULTS

ALCOHOL CONSUMPTION IN CENTRAL AND EASTERN EUROPEAN UNION COUNTRIES

The level of alcohol consumption in Central and Eastern EU countries has been high in recent decades [2, 8]. For 2019, the most recent year with complete data available, these five countries ranked first (CZE), second (LVA), sixth (LTU), 16th (POL) and 26th (EST) among the nearly 200 member states of the WHO [6]. As a high proportion of people consume alcohol in all five countries, the countries’ rankings for APC per drinker are not that high, but all five countries rank among the top 40% of all WHO member states [1]. As is true for all countries, the proportion of men consuming alcohol was higher than the proportion of women, men had more regular and irregular heavy drinking occasions than women [1], and the life expectancy gap between men and women is among the highest among developed countries [11]; for the link between alcohol and life expectancy in another Eastern European country outside the EU [12].

ALCOHOL-ATTRIBUTABLE HARM IN CENTRAL AND EASTERN EUROPEAN UNION COUNTRIES

Figure 1 provides an overview of alcohol-attributable mortality in the WHO European Region for 2016 [5, 7]. It presents a clear West-to-East gradient of increasing alcohol-attributable mortality, specifically within the EU, but also in the WHO European Region as whole. The further east the country is, the higher its alcohol-attributable mortality. A similar picture can be observed for burden of disease, as expressed in disability-adjusted life years [7, 13]. Even though the high levels of consumption among the five countries are comparable to other countries in the Western part of the EU, their alcohol-attributable burden is disproportionately high by comparison. This is partly due to the fact that higher relative risks (RRs) have to be used for the Baltic countries when calculating alcohol-attributable fractions, in order to account for the patterns of frequent irregular heavy drinking occasions which tend to be part of a drinking tradition common for post-Soviet countries especially, although not restricted to Russia [14].

ALCOHOL CONTROL POLICY

Given the high alcohol-attributable mortality and burden of disease in the world [15], interventions to reduce this burden have become paramount. The most effective and cost-effective interventions are the so-called “best buys”—i.e. taxation increases, availability restrictions and bans on advertisement and marketing [16, 17]. Unfortunately, even though the effectiveness and cost-effectiveness of these interventions have been established in hundreds of studies, they have not been leveraged by decision-makers [18]. Financial measures, such as increases in excise taxation, have been especially underutilized in the WHO European Region [7], presumably because politicians fear that such measures will be unpopular in the general population.

As a recent study from WHO [9] has shown, the tax share, i.e., the proportion of off-premise alcohol prices that is a result of excise tax, is low. The median values for the WHO European Region are 10.8% for beer, 0.8% for wine, and 30.6% for spirits [9]. Thus, while the share
of tax for tobacco in the region is close to 75%, as recommended by the WHO [19], the tax shares for alcoholic beverages are very low.

As a result, as one of six signature initiatives of the WHO European Region, the Regional Director’s Advisory Council on Innovation for Noncommunicable Diseases decided to increase the tax share in alcoholic beverage prices and to establish a WHO-recommended minimum level of tax share for the Region [20]. In addition, to reduce the likelihood that heavy drinkers simply switch beverage types, the minimum tax share would be implemented in such a way that every unit of alcohol should cost the same price, independent of the beverage type.

If this initiative were to be implemented in the five Central and Eastern EU countries considered here, thousands of alcohol-attributable deaths could be averted (for calculation details see [9]). Table 1 provides the number of deaths, by broad cause of death categories, that could be averted annually with the implementation of such an initiative (for categories used and RRs used see [21], and [15], respectively). Interestingly, CVD and the “other” category, mainly consisting of deaths due to alcohol use disorders, represent the most important categories [8].

**DISCUSSION**

Similar to increases in tobacco taxation, increases in alcohol taxation have been shown to result in substantial mortality reductions [22, 23]. Furthermore, as demonstrated repeatedly in the past, increases in taxation of alcohol and tobacco are linked to increases in state revenue [24]; for an example in one of the Baltic countries, see [25]. An often-used argument against raising taxes has been that consumption of unrecorded alcohol would consequently increase. However, a recent review has shown that there has been no consistent association between tax increases and increases in unrecorded alcohol consumption [26]. Moreover, there are several well-established and effective alcohol control policies to reduce unrecorded consumption [26, 27]. Increases in alcohol excise taxation for the improvement of health have found broad support from the general population (e.g. [28, 29]), even though there is a lack of studies exploring the exact antecedent conditions necessary for such support. Thus, there is little rationale to oppose increased alcohol taxation in Central and Eastern EU countries, where there are high levels of consumption and alcohol-attributable disease and mortality burden.

As indicated before, the recent evidence from Lithuania also indicates that a significant increase in excise tax may not only reduce all-cause mortality, but also contribute to increased tax revenue, which suggests that there may not be a sudden switch to illegal alcohol or cross-border shopping even in the free movement areas of the EU [26, 29].

While this contribution concentrated on alcohol excise taxes as they are the most underutilized “best buy” alcohol control policy, decreases of availability and implementation of a marketing ban will, of course, also help reduce alcohol-attributable burden. The full effects of a marketing ban may only be seen in the long run, however, as some of its effects come about as a result of a reduced exposure to advertising during adolescence [30].
CONCLUSIONS

Central and Eastern EU countries have high levels of alcohol consumption and, as a consequence, high levels of alcohol-attributable harm. However, effective alcohol control policies, such as increased taxation, exist and should be utilized to reduce this burden. An increase in alcohol taxation promises to result not only in public health gains but also in increased state revenues. It is hoped that the new WHO European Region signature initiative to increase the share of tax for alcoholic beverages will lead to higher implementation rates of higher levels of alcohol taxation.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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FIGURE 1.
Age-standardized mortality rate per 100,000 population attributable to alcohol use in the WHO European Region [7]
Number of deaths averted annually in Central and Eastern European Union countries if a minimum tax share on alcoholic beverage prices of 25%, and consistent taxing of ethanol, irrespective of beverage type, were implemented (based on the year 2019)

|               | Infectious diseases | Cancers | CVD   | GID      | Injuries | Other | Total deaths averted |
|---------------|---------------------|---------|-------|----------|----------|-------|----------------------|
| Czech Republic| 33                  | 132     | 141   | 92       | 18       | 105   | 522                  |
|               | (9–60)              | (104–169)| (103–411)| (75–126)| (11–27)| (53–173)| (456–817)            |
| Estonia       | 2                   | 7       | 34    | 6        | 1        | 30    | 81                   |
|               | (1–3)               | (6–9)   | (15–66)| (5–9)    | (1–2)    | (2–60)| (46–129)             |
| Lithuania     | 5                   | 15      | 40    | 16       | 4        | 38    | 117                  |
|               | (3–8)               | (11–19) | (9–110)| (13–22)  | (2–6)    | (0–83)| (72–200)             |
| Latvia        | 4                   | 12      | 82    | 9        | 3        | 37    | 147                  |
|               | (2–6)               | (9–16)  | (23–174)| (8–13)   | (2–5)   | (0–83)| (75–246)             |
| Poland        | 53                  | 230     | 431   | 155      | 30       | 449   | 1,348                |
|               | (16–92)             | (179–295)| (124–895)| (123–211)| (19–46)| (5–966)| (810–2,120)          |

CVD - cardiovascular diseases, GID - gastrointestinal diseases