A “buck a beer,” but at what cost to public health?

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Abstract

Alcohol use leads to a substantial number of hospitalizations, and to increased health and social harms as well as economic costs in Ontario and across Canada. The effects of alcohol price changes on consumption and resulting harms have been firmly established; changes in the minimum price of alcohol have the greatest effect on consumption among people who for reasons of affordability consume low-priced alcoholic beverages, typically adolescents, people with lower socio-economic status, and people with harmful alcohol use. Decreases in inflation-adjusted minimum pricing in British Columbia from 2002 to 2006 have been associated with increases in deaths wholly attributable to alcohol. Furthermore, decreases in alcohol prices have been previously associated with increases in drink-driving, decreases in life expectancy, increases in road traffic injuries, violence, and alcohol poisonings, and long-term increases in deaths from infectious diseases, circulatory diseases, and digestive diseases. Based on the findings of previous studies, lowering the cost of alcohol will negatively impact the health of Ontarians and further strain a healthcare system with limited resources. Accordingly, Ontario should be strengthening alcohol policies to improve public health, including raising the minimum price of alcohol, rather than weakening alcohol policies.

Résumé

La consommation d'alcool mène à un nombre important d'hospitalisations, et à une augmentation des méfaits sur la santé et la société, ainsi que des coûts économiques en Ontario et dans l'ensemble du Canada. Les effets des variations du prix de l'alcool sur sa consommation et les méfaits qui en résultent ont été fermement établis; les modifications du prix de vente minimum de l'alcool ont le plus grand effet sur la consommation des personnes qui, pour des raisons d'accessibilité économique, consomment des boissons alcoolisées à bas prix, en général des adolescents, des personnes de statut socio-économique inférieur et des personnes ayant une consommation abusive d'alcool. En Colombie-Britannique, la diminution du prix de vente minimum de l'alcool (en dollars constant) entre 2002 et 2006 a été associée à des augmentations de décès entièrement attribuable à l'alcool. De plus, la diminution du prix de vente minimum de l'alcool est associée à l'ivresse au volant, à la réduction de l'espérance de vie, aux accidents de la circulation, à la violence et l'intoxication alcoolique, et à l'augmentation à long terme des décès causées par des maladies infectieuses, circulatoires et digestives. D'après les conclusions d'autres études, réduire le prix de vente de l'alcool aura des conséquences néfastes sur la santé de la population ontarienne et mettra à rude épreuve les ressources déjà limitées du système de santé provinciale. En conséquence, l'Ontario devrait renforcer la politique en matière d'alcool afin d'améliorer la santé publique, notamment en augmentant le prix de vente minimum de l'alcool, au lieu de l'affaiblir.

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Alcohol use is responsible for a large proportion of hospitalizations, healthcare-related costs, and mortality in Canada, and caused 14.8 thousand deaths in 2014 (six times the number of deaths caused by opioid use during that year) (Canadian Substance Use Costs and Harms Scientific Working Group 2018). The impact of alcohol pricing on its consumption, on hospitalization rates, and on rates of mortality has been firmly established (Stockwell et al. 2012a; Anderson et al. 2009). In fact, alcohol pricing policies are the most cost-effective method of reducing alcohol consumption and its consequences (Canadian Institute for Health Information 2017; Chisholm et al. 2018). Therefore, implementing the controversial policy of lowering the current minimum price (a price based on the volume of ethanol below which alcoholic beverages cannot be sold) for beer, the most commonly consumed alcoholic beverage in Ontario, from approximately \$1.25 to \$1.00 for a can or bottle (a 20% decrease in price), would lead to an increase in alcohol consumption, and consequentially increase hospitalizations, healthcare-related costs, and deaths, as well as shorten the lives of a proportion of Ontario's residents.

Studies by Stockwell and colleagues observed that a 10% increase in minimum prices across all alcoholic beverages in Saskatchewan in 2010 led to a decrease in beer consumption of 10.06% (Stockwell et al. 2012a), while an increase in minimum prices in British Columbia in 2006 led to an estimated 1.5% reduction in beer consumption for a 10% increase in minimum price (Stockwell et al. 2012b). The mean price/taxation elasticity for beer has been estimated to be -0.46 (i.e., a 10% increase in price leads to a 4.6% reduction in consumption) (Wagenaar et al. 2009). However, the price elasticity of alcohol shows a large variation between regions and population groups within a region and is based on various factors (Wagenaar et al. 2009), and the effects of decreases in minimum prices on the average price of alcohol and on the consumption of alcohol have not been previously studied.

The health effects of decreasing alcohol prices can be illustrated using the example of British Columbia, where from 2002 to 2006 inflation-adjusted decreases in minimum pricing were related to an increase in deaths wholly attributable to alcohol (Zhao et al. 2013). Additionally, a minimum price increase in British Columbia in 2006 was estimated to result in a 3.2% decrease in deaths wholly attributable to alcohol per 10% increase in minimum price (Zhao et al. 2013).

The “buck a beer” price decrease would affect light and moderate drinkers, resulting in an increase in the number of people in Ontario who drink above the Canadian low-risk drinking guidelines and an increase in the associated health burden. But the consequences of lower prices are not restricted

to light and moderate drinkers; in fact, these consequences will be experienced across the whole spectrum of drinkers. Indeed, in many countries, decreases in the price of alcohol have been associated with immediate decreases in life expectancies and long-term increases in deaths from infectious diseases, circulatory diseases, and digestive diseases (Xu and Chaloupka 2011). Price decreases also have been associated with increases in outcomes related to the intoxicating effects of alcohol, namely the occurrence of alcohol poisonings, violence, drink-driving, and road traffic injuries (Wagenaar et al. 2009). In Ontario in 2014, 565 individuals died due to road traffic injuries (Brown et al. 2017). Of the drivers tested, 17.7% had blood alcohol content levels above 0.08 g/dL (Brown et al. 2017). Although alcohol-related motor vehicle injuries have decreased in Ontario (Brown et al. 2017), the lowering of alcohol prices may lead to an increase in drink-driving and road traffic injuries.

The costs and numbers of hospitalizations due to alcohol are increasing (Canadian Substance Use Costs and Harms Scientific Working Group 2018; Canadian Institute for Health Information 2017). Indeed, alcohol caused 77 thousand hospitalizations (excluding emergency room visits that did not result in admission) in Canada in 2015—more hospitalizations than heart attacks (Canadian Institute for Health Information 2017). Furthermore, healthcare-related costs due to alcohol use are estimated to be 4.2 billion dollars per annum in Canada (Canadian Substance Use Costs and Harms Scientific Working Group 2018). Additionally, from 2008/2009 to 2014/2015, the number of emergency room visits in Ontario increased by 13.1%, outpacing the population growth of 6.2% (Health Quality Ontario 2018). Decreases in the price of alcohol would result in an increased frequency of hospitalizations and in increased healthcare-related costs.

Minimum pricing affects to the greatest extent the lowest priced beverages. Accordingly, minimum pricing policies have the greatest effect on alcohol consumption among people who for reasons of affordability consume low-priced alcoholic beverages, typically adolescents, people with lower socioeconomic status (SES), and harmful drinkers (Holmes et al. 2014). These individuals are also more likely to change their alcohol consumption in response to changes in alcoholic beverage prices (Holmes et al. 2014). As such, it is likely that lowering the minimum price of beer would disproportionately increase alcohol consumption and the resulting health consequences, including, but not limited to, alcohol dependence, among these subpopulations.

People who have lower SES typically live shorter lives, in part due to an increased risk of poisoning, suicide, and liver

cirrhosis, all of which are heavily impacted by alcohol (Rehm and Probst 2018; Rehm et al. 2017). For example, in Ontario in 2015 and 2016, age-adjusted rates of hospitalization entirely caused by alcohol use were highest in neighbourhoods in the lowest income quintile (322.5 per 100,000 people) and lowest in neighbourhoods in the highest income quintile (147.2 per 100,000 people) (Canadian Institute for Health Information 2017). Furthermore, per gram of alcohol consumed, people of lower SES experience a disproportionate amount of harm compared to people of higher SES due to a complex constellation of risk factors, including age of initiation of drinking, drinking patterns, social and drinking environments, other health risk behaviours which interact with the harmful effects of alcohol consumption, biological embedding, and access to affordable healthcare (Probst 2018; Tjepkema et al. 2013). Therefore, increases in alcohol consumption would disproportionately affect people with lower SES and would further increase the health disparities which exist between socio-economic strata in Ontario.

Alcohol price increases may have negative effects. Although a price decrease would result in a net increase in alcohol consumption with negative health consequences, increasing alcohol prices too much may also have negative consequences by shifting alcohol to the informal market (i.e., consumption of unrecorded alcohol). However, even in the case of the Gorbachev reforms in Russia during the 1980s, the increase in unrecorded alcohol consumption did not offset the decrease in alcohol sold through the State Trade (Shkolnikov and Nemtsov 1997). In rare cases, unrecorded alcoholic beverages may contain compounds potentially associated with public health consequences, such as methanol (MacDonald 1999; Rehm et al. 2014). Furthermore, for people with alcohol dependence and very low incomes, the potential negative effects of increasing prices on housing may be mitigated through instituting managed alcohol programs (Vallance et al. 2016).

Effective pricing policies, including minimum prices higher than one dollar, help to reduce the harms caused by alcohol (Canadian Institute for Health Information 2017). Due to the effectiveness of minimum pricing, this pricing approach has been successfully implemented in several countries in the eastern part of the World Health Organization European region, particularly in Russia; is now being implemented in Scotland; and is under consideration for implementation by the governments of England, Wales, Northern Ireland, and Australia (Holmes et al. 2014). In Scotland, the minimum pricing laws are linked to an evaluation mechanism where the effectiveness of the law is reviewed after five years, after which there will be a vote in the Scottish Parliament to decide whether minimum pricing laws continue beyond April 2024 (Health Scotland 2018). Therefore, linking minimum price changes in Ontario to evaluation mechanisms would allow for mandatory assessment of the pricing laws and for policy

makers to vote on the continuation of such policies with detailed information on the public health impact of such laws. Furthermore, there are alternatives to minimum pricing—in Alberta, provincial mark-ups and levies are applied based on the alcohol content of a beverage (i.e., specific taxation); however, specific taxation does not ensure a minimum price per standard drink of alcohol (Stockwell et al. 2006).

Conclusion

Alcohol is an addictive substance that has a major net negative effect on the health of Canadians, and, as a result, it should not be treated as an ordinary commodity. Considering the harms caused by alcohol, the Government of Ontario should not be acting to weaken alcohol policies by implementing incentives to lower the price of alcoholic beverages, but instead should be strengthening alcohol policies, including increasing the price of alcohol, to improve public health.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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