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Effects of a Large Reduction in Alcohol Prices on Mortality in Finland

Does a reduction in the price of alcohol result in an increase in deaths due to alcohol?

This was the subject of a study following a significant reduction in taxes in Finland in 2004 (30% for spirits, 3% for wine). The abolition of import quotas by the EU in 2004 also made it possible to import from other member countries and this led to an increase of approximately 10% in alcohol consumption in Finland. The paper, published in the International Journal of Epidemiology, is particularly interesting as it not only reports the effects of reducing costs of alcohol on alcohol-related mortality, but it also reports the effects of such changes on cardiovascular and all-cause mortality.

The authors assessed the impact of a reduction in alcohol prices by analysing the monthly aggregations of deaths for the period 1996-2006.

Key Results of Paper

The key results of the analyses were that for subjects over the age of 50 years, the decrease in the cost of alcohol was associated with an increase in rates of alcohol-related mortality. For men aged 40-49 years and men and women aged 50-69 years, these increases in risk estimated 1.6 to 2.9 additional monthly deaths per 100,000 person-years. On the other hand, the trend was very different for cardiovascular and all-cause mortality rates. For men and women aged 40-49 years and those >69 years, there were clear decreases in mortality from cardiovascular disease, with estimated 19 fewer monthly deaths per 100,000 person-years for men and 25 for women. For ischemic heart disease deaths among subjects >69 years of age, many fewer deaths were estimated. These effects were not different when the investigators included numbers of coronary operations as a control series in the models.

For all-cause mortality, the estimates implied 42 and 69 fewer monthly deaths in the oldest group. The lower all-cause mortality rates relate not only to decreases in CVD deaths but to fewer deaths from pulmonary disease, dementia, and diabetes; there were no changes in cancer death rates. The authors state: "the negative, i.e., beneficial, point estimates found in the current study suggest that cheaper alcohol may ... have fostered moderate consumption and its beneficial effects in at least some part of the population." They quote recent surveys showing that "alcohol consumption in the 2000s has increased among persons aged >65 years and those aged 50-69 years, whose drinking is reported to be primarily low to moderate."

Conclusion

These results obtained from the time series analyses suggest that the reduction in alcohol prices led to an increase in alcohol-related mortality, except in persons <40 years of age. However, it appears that beneficial effects in older age, when CVD deaths are prevalent, counter-balance these adverse effects, at least to some extent.

International Scientific Forum on Alcohol Research members agreed that both potentially harmful and beneficial effects resulting from changes in alcohol intake should be considered when estimating population effects. They were unsure whether all of the reported effects in the elderly should be attributed to changes in alcohol intake, as decreases in CVD and all-cause mortality rates were

occurring prior to the change in alcohol intake.

Note: In the same journal issue is a paper by Gustafsson and Ramstedt on changes in alcohol-related harm in Sweden after similar changes in costs; it concluded that "the findings were not consistent with respect to whether alcohol-related harm increased in southern Sweden" after importation from Denmark increased. Also in the same issue is a Commentary by Mark Petticrew that points out the known problems in interpreting data from observational studies (such as the present two). He concludes: that despite problems setting policy based on observational studies, "evaluations of natural experiments have an essential role to play, not just in understanding impacts but also assessing impacts within different contexts, settings, and populations subgroups."

Journal References: 1. K. Herttua, P. Makela, P. Martikainen. An evaluation of the impact of a large reduction in alcohol prices on alcohol-related and all-cause mortality: time series analysis of a population-based natural experiment. International Journal of Epidemiology, 2009; 40 (2): 441 DOI: 10.1093/ije/dyp336

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