ASSOCIATIONS BETWEEN ALCOHOL AND TOBACCO CONSUMPTION AND OVERALL CANCER MORTALITY

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Introduction and Aims:
The relationships between alcohol and tobacco use and cancer have been studied primarily in case-control and prospective studies of particular samples, and the relationships have not been studied at the population level, and effects on overall cancer mortality have rarely been discussed. This study aims to examine temporal associations between alcohol and tobacco consumption, and overall cancer mortality in the Australian population as a whole, looking across different gender and age groups, controlling for the effects of health expenditure.

Method:
Annual time series data between 1935 and 2014 on per capita alcohol consumption (15+) and tobacco consumption (15+), and gender- and age-specific cancer mortality from 1968 to 2014 were collected from the Australian Bureau of Statistics, Cancer Council Victoria and Australian Institute Health Welfare respectively. Autoregressive integrated moving average models were established, building in lag effects, to estimate the associations across different gender and age groups.

Results:
One litre decreases in per capita alcohol consumption and one kilogram decreases in per capita tobacco consumption were associated with a decline of 3.5% and 14.2% in overall cancer mortality respectively with long-term effects across a 20-year period. Significant associations were found between per capita alcohol consumption and overall cancer mortalities among male 50-69-year and female 50-year and older. Per capita tobacco consumption was only found significantly associated with older male's cancer mortality.

Conclusions:
The study provides clear evidence that a decrease in population level drinking and tobacco smoking could lead to a reduction in cancer mortality in Australia.