



RESEARCH

INFORMATION

Does Minimum Unit Pricing For Alcohol Have Unintended Consequences For Diet & Health? A Natural Experiment Comparing Scotland And England



AIMS

Minimum Unit Pricing (MUP) for alcohol was introduced in Scotland in May 2018. The aim was to reduce overall population alcohol intake. MUP increased the price of cheap strong alcohol purchased for consumption at home. There was an expectation that alcohol spending would increase. This could reduce spending on other goods, including food purchased for consumption at home, which might lead to changes in diet and health. The objectives of this study were therefore to assess the following impacts: i) to measure the size of changes in food purchases; ii) to estimate effects on diet, and iii) to calculate potential impacts on health.



KEY FINDINGS

- Following MUP, total spending in Scotland on food for consumption at home fell by 1.0%, and volume bought dropped by 0.8%. There was also less spent on fruit and vegetables but more spent on crisps and snacks, and some evidence that more crisps and snacks were bought.
- MUP had no effect on most measures of nutrition, calorie intake and diet quality. However, total sugar purchase fell by 1.6% per week in Scotland, equivalent to 8.25 grams per individual per week. Sugar is found in alcoholic drinks and households with higher alcohol purchases (>14 units per adult per week) had higher levels of sugar reduction from this source than households with lower alcohol purchase. Within Scotland, households from more deprived areas had higher levels of sugar reduction from alcohol.
- The levels of sugar reduction were predicted to lead to fewer cases of Type 2 diabetes, stroke and coronary heart disease.





WHAT DID THE STUDY INVOLVE?

Using data collected by Kantar World Panel (KWP), a market research organisation, weekly food purchases by 1,987 households in Scotland were compared with purchases by 6,064 households in the north of England (where MUP was not in place). In the KWP, panel members scan and report all purchases brought into the home, as well as providing till receipts which verify the purchases made and provide price information. Non-bar-coded items that are sold loose (for example, some fruit and vegetables) are also recorded. The dataset covers all types of outlet where purchases of food and drink to bring home are made, e.g. supermarkets, corner shops and online purchases. Data relating to approximately one year before and one year after the introduction of MUP in May 2018 were included. Statistical modelling was undertaken to estimate the effects of MUP and to adjust for differences between households in Scotland and the north of England. Health impacts were estimated by using existing cost-effectiveness models identified from a literature review: the Preventable Risk Integrated Model (PRIME) and the Department of Health & Social Care (DHSC) calorie model.

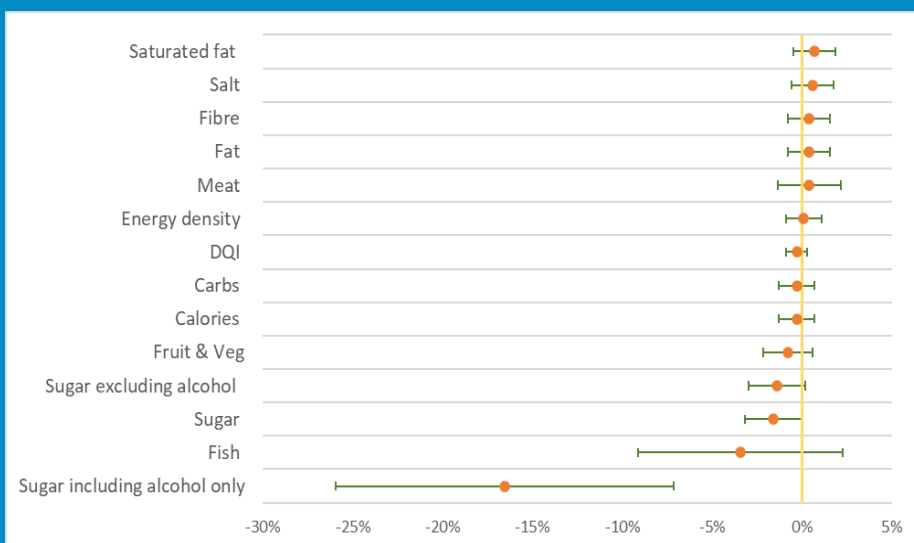


WHAT WERE THE RESULTS AND WHAT DO THEY MEAN?

i) Changes in food purchases (measured by spending and volume)

Following the introduction of MUP, food spending fell by almost £2 per household per week in Scotland compared to just over £1 per household per week in the north of England. The volume of food purchased fell by 280g per household per week in Scotland compared to 28g per household per week in the north of England. Adjusting for household characteristics and other factors that could affect food spending and volume, average household food spending in Scotland declined by 1.0%, [upper and lower range: -1.9%, -0.0%], and total food volume declined by 0.8% [-1.7%, 0.2%]. Within food categories, reductions in spending were observed for dairy, cereals, and fruit and vegetables. An increase was observed for crisps and snacks. The changes were relatively small in absolute terms: the largest observed change was a 2.5% [-4.3%, -0.8%] fall in the £6.30 spent per week on fruit and vegetables, roughly equivalent to 16 pence.

Figure 1. The effect of MUP on nutrition, calories and diet quality (percentage change with 95% confidence interval)



ii) Effects on diet (measured by weekly household calories, nutrients and diet quality)

Figure 1 shows the mean effect on diet in terms of % change (represented by an orange dot) and an estimated range around the mean effect (represented by the horizontal line). MUP significantly reduced sugar purchase from all sources by 1.59%, purchase of sugar from all sources excluding alcohol by 1.39%, and purchase of sugar from alcohol by 16.56%. MUP was also associated with a reduction in fish purchase of 3.44% (however, the true value could be zero, as the range crosses zero). Overall, MUP had no effect on other nutrient intakes, calories, energy density (kcal/100grams) or diet quality (measured by the Diet Quality Index, DQI).

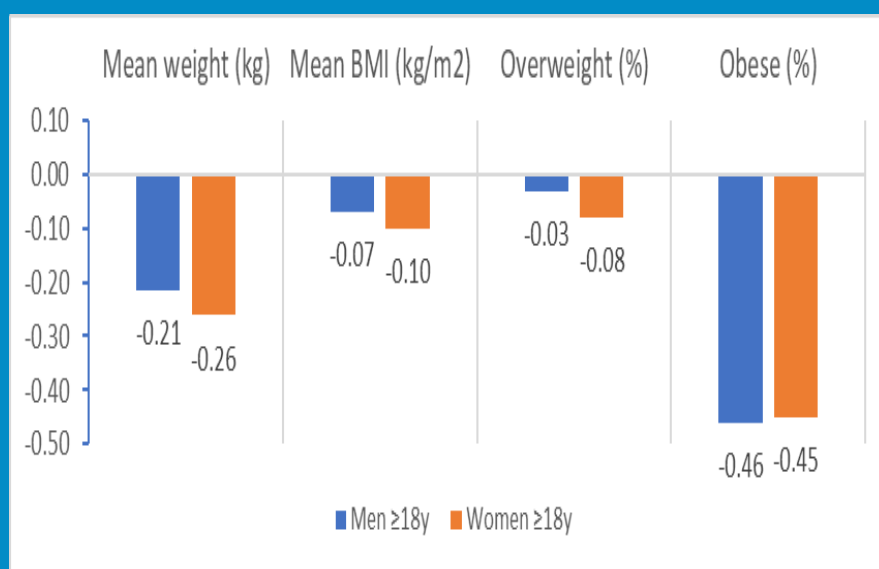
Comparing the 60% of households living in the more deprived areas of Scotland with the remaining 40% of households, those from poorer areas reduced alcohol sugar purchase more than those from richer areas. In addition, comparing households with higher levels of alcohol purchase (>14 units per adult per week) to those with moderate levels of alcohol purchase (1-14 units per adult per week), those with higher levels of alcohol purchase reduced alcohol sugar purchase more than those with moderate level of alcohol purchase.

iii) Potential impacts on health (measured by changes in disease incidence and healthy life years)

Using the PRIME model, the estimated levels of sugar reduction from all sources including alcohol were predicted to lead to between 250-375 fewer cases of Type 2 diabetes, stroke and coronary heart disease per year, and between 18-28 additional healthy life years. These outcomes are driven by changes in calorie intake and weight, which themselves are driven by the changes in sugar purchase. Figure 2 shows these changes for men and women.

Using the DHSC model, a 5kcal reduction per day (which approximates the sugar purchase reduction of 8.25g per week) per individual over a 10-year period was estimated to produce total economic health benefits (made up of additional economic output, savings in health and social care costs, and the monetary value of healthy life years) of £118 million and approximately 100 fewer premature deaths (deaths of individuals under the age of 75). A more optimistic effect of 10kcal reduction produced an approximate doubling of benefits and premature deaths avoided.

Figure 2. Changes in weight (kg), Body Mass Index (BMI=kg/m²), % overweight (BMI≥25 & BMI<30), % obese (BMI≥30), predicted from reduction in sugar purchase from all sources due to MUP





WHAT IMPACT COULD THE FINDINGS HAVE?

This study has produced the first set of results of the unintended consequences on food purchasing (and associated health impacts) potentially associated with the introduction of MUP. Scotland is the first country anywhere in the world to introduce MUP. Therefore, the research is novel and could inform policy in other countries considering introducing MUP. The research is intended to inform a national policy decision on whether to retain the current policy of applying a MUP of 50p per unit of alcohol in Scotland. The findings form part of the evidence being collected by Public Health Scotland, via the MUP Evaluation Collaborative, to inform the decision on whether to retain the current policy.



HOW WILL THE OUTCOMES BE DISSEMINATED?

The project was presented in a podcast for the public in November 2021 as part of the Economic and Social Research Council Festival of Social Science. The podcast was run jointly with Public Health Scotland and supported by the Public Engagement Unit at the University of Aberdeen (available online at <https://www.abdn.ac.uk/news/15589>). The project was also discussed in an online practitioner workshop with community food organisations in May 2022 (participants included Health Valleys North Lanarkshire, Edinburgh Community Food, and Edinburgh Cyrenians).

The following activities have been undertaken or are scheduled to take place:

- **Journal articles**
 - SSM Population Health (published) <https://doi.org/10.1016/j.ssmph.2022.10117>; American Journal of Clinical Nutrition (in-progress)
- **Conferences**
 - International Health Economics Association (2021), European Health Economics Association (2022)
- **Seminars**
 - Scottish Government Health and Social Care Analysis Unit (2022)
- **Reports**
 - MUP Evaluation Collaborative network (2022/3)

Future dissemination activities include presentation at a Scottish or UK public health conference, and a further peer-reviewed journal article. Additional public engagement is also planned with community food organisations.





FURTHER RESEARCH

The main urgent research priority going forward is to understand whether food purchasing decisions have markedly changed in Scotland over the period between 2019 to the present day. The combination of COVID lockdowns and greater financial pressure, caused by cost-of-living rises, are likely to have created a significantly different purchasing environment.

A further priority is to understand differential impacts for households. For example, feedback from the practitioner workshop was that a £1 per week reduction in food spend could have an impact in lower income households who already spend relatively small amounts on food.



CONCLUSION

Minimum unit pricing for alcohol policy was associated with a reduction in food spending in Scotland. There was also some evidence of lower spending on dairy, cereals, fruit and vegetables, with higher spending on crisps and snacks.

There was a reduction in the purchase of sugar from all sources, both when including and excluding alcohol. The reduction in sugar was predicted to have several positive health impacts. However, except for sugar, there were no effects on other aspects of diet.

Overall, there is no strong evidence that a 50p MUP policy generated unintended negative health consequences arising from changes in food purchasing behaviour.



RESEARCH TEAM & CONTACT



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Additional Information

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