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Effects on alcohol consumption of announcing revised UK low risk drinking guidelines: Findings from a monthly cross-sectional survey

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Background: Health authorities publish alcohol consumption guidelines for low risk drinking in most high-income countries but the effects of these guidelines on alcohol consumption are unclear. In January 2016, the UK's Chief Medical Officers announced revised guidelines recommending that men and women should not regularly drink more than 14 units (112g) per week, a reduction to the

previous guideline for men of 3-4 units (24-32g) per day. This paper evaluates the effect of announcing the revised guidelines on alcohol consumption.

Methods: Data came from the March 2014 to October 2017 waves of the Alcohol Toolkit Survey, a monthly repeat cross-sectional survey of approximately 1,800 adults (16+) resident in England. The survey uses a hybrid between random location sampling and quota sampling designed to generate a nationally representative sample, which selects random areas in England (approx. 300 households) from strata defined by area-level geographic and sociodemographic profiles. The primary outcome is participants' AUDIT-C scores. AUDIT-C is the short-form of the Alcohol Use Disorders Identification Test and is a validated screening test for heavy drinking. It has demonstrated excellent reliability and responsiveness to short-term change. Effects are estimated using segmented regression. Secondary analyses test for alternative breakpoints in the long-term trend and pulse effects. All analyses were pre-registered in the ISRCTN registry (ISRCTN15189062).

Findings: At baseline, 70.4% of the sample were drinkers and the mean AUDIT-C score was 2.8. The main analysis showed no significant step-change in AUDIT-C scores following announcement of the guideline ($\beta=0.001$, 95% CI:-0.079-0.099) but there was a change in the subsequent trend such that scores increased more rapidly after the announcement ($\beta=0.008$, 95% CI:0.001-0.015). This finding was not robust as secondary analyses of alternative breakpoints suggested the change in trend began earlier, in June, before the new guidelines were announced. Secondary analyses also suggest that AUDIT-C scores reduced temporarily for three months (a pulse effect) after the new guidelines were announced ($\beta=-0.126$, 95% CI:-0.218--0.034).

Interpretation: Announcing new UK drinking guidelines with no large-scale organised promotion did not lead to a substantial or sustained reduction in drinking or a downturn in the long-term trend in alcohol consumption. Well-designed promotional campaigns may improve the impact of drinking guidelines on alcohol consumption. This study is limited by potential confounding, as January is typically a light drinking month while December is a heavy drinking month. We control for seasonal trends but this may be inadequate if seasonality varies substantially between years as our time series is relatively short.

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Conflict of interest: JH and PM were members of and then advisors to the UK Chief Medical Officers' Guideline Development Group. JH, PM, CA, PB and AB were commissioned by Public Health England to provide epidemiological analyses to support the Guideline Development Group. JH, PM and CA have received funding for commissioned analyses from Systembolaget and Alko, respectively the Swedish and Finnish government-owned alcohol retail monopolies. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Ethics approval and patient consent: Alcohol toolkit study participants give verbal informed consent following explanation of the study by interviewers and assurance that the study is conducted in line with the Market Research Society Code of Conduct. The University College London ethics committee granted ethical approval for the Alcohol Toolkit Study. The University of Sheffield ethics committee granted ethical approval for this evaluation of the UK lower risk drinking guidelines.

Contributors:

John Holmes, (Reader in Alcohol Policy, Public Health), led the project and drafted the report.

Emma Beard (Research Fellow, Health Psychology and Statistics), conducted the evaluation analyses and contributed to the drafting of the report.

Jamie Brown (Principal Research Fellow, Health Psychology), contributed to project and analysis design, evaluation analysis and drafting of the report.

Alan Brennan (Professor of Health Economics and Decision Modelling, Health Economics), contributed to project and analysis design and drafting of the report.

Inge Kersbergen (Research Associate, Public Health), led the review of news coverage of the drinking guidelines and contributed to drafting of the report.

Petra S Meier (Professor of Public Health, Public Health), contributed to project and analysis design and drafting of the report.

Susan Michie (Professor of Health Psychology, Health Psychology), contributed to project and analysis design and drafting of the report.

Abigail K Stevely (PhD Student, Early career researcher, Public Health), analysed antecedents of behaviour change and contributed to drafting of the report.

Penny Buykx (Associate Professor, Behavioural Science), contributed to project design, led the review of promotional activity and contributed to drafting of the report.