Carrots and sticks: Can governments do without public health regulation?

BRIEFING PAPER

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This is the first of three papers exploring tobacco, alcohol, obesity and gambling policy. It compares different types of policy approach, and concludes that more 'interventionist' and apparently politically challenging measures, such as strict regulations on availability and taxes, tend to be more effective.

KEY POINTS

- In general, more 'interventionist' policies (such as bans, taxes and regulations) tend to be more effective – though the story is nuanced.
- Individual-level interventions (e.g., incentive payments, treatment) are more amenable to experimentation, and so have stronger evidence behind them.
- However, the evidence that we have on measures that affect whole populations suggests they have bigger effects, and are cheaper (and so more cost-effective).
- The evidence – particularly from tobacco control – suggests that a range of policies, implemented together, should reinforce one another and make each policy more effective.
- Yet the most impactful measures may be those that appear most politically difficult because they involve raising prices or restricting availability.

ADDRESSING HARM FROM TOBACCO, ALCOHOL, OBESITY AND GAMBLING IS A MAJOR CHALLENGE FOR THE UK GOVERNMENT

The UK faces a public health crisis, one that was apparent prior to the COVID-19 pandemic, but which was thrown into sharp relief by the devastation wrought by the virus. The most striking illustration of the issue is life expectancy. In the 100 years to 2011, life expectancy increased by three years per decade. In the subsequent decade, life expectancy fell. This was primarily because of COVID-19, but progress had stalled before that, with male life expectancy rising just 0.8 years and female life expectancy rising 0.6 years between 2011 and 2019 in England.[1]

Moreover, there remain wide gaps between the rich and poor in our society in terms of their health outcomes. Life expectancy is 9.7 years lower for the most deprived women than the least deprived women in England, with a gap of 8.0 years for men. The difference in terms of years of *healthy* life is 18. In all cases, the disparity widened over the course of the 2010s.[2]

'Behavioural risk factors' – things like smoking, drinking, diet and exercise – contribute substantially to these unwanted statistics. The UK government's 2019 prevention Green Paper suggested that 40% of premature mortality can be attributed to behavioural patterns and that 50% of health status is determined by social and economic environment.[3]

Smoking is generally regarded as the leading cause of preventable ill health and death in the UK. In 2019/20, there were almost 75,000 deaths and over half a million hospital admissions attributable to smoking in England.[4] Obesity and alcohol also cause substantial damage to population health, with each linked to around a million hospitalisations a year.[5]

While smoking rates have continued to fall, progress appears to have slowed in recent years.[6] Projections for the government-commissioned Khan review into making smoking obsolete imply that without policy action, smoking will not fall below the target of 5% in England until 2037, and the poorest areas will not hit that benchmark until 2044.[7] Similarly, after a period of falling alcohol consumption, sales in England (though not in Scotland, which has taken more concerted steps to reduce drinking), have been pretty steady since 2013.[8] Driven by the pandemic, alcohol-specific deaths spiked to their highest level on record in 2021.[9] The proportion of adults with obesity in England has increased over the long term, from 15% in 1993 to 28% in 2019 – though much of this increase came in the 1990s.[10]

The physical impact of gambling is not as clear and stark, but it is increasingly argued – most prominently by Public Health England (PHE) – that gambling should be seen and treated as a public health issue, analogous to smoking, alcohol and obesity. PHE's rationale is that such an approach is warranted because of the harm gambling can cause to individuals, their families and wider society.[11] Around 0.5% of adults – around a quarter of a million people – are estimated to be problem gamblers, but a further 4% or so are gambling at risky levels, and 7% are adversely affected by the gambling of others.[12]

More broadly, many of the dynamics that apply in relation to smoking, alcohol and obesity are relevant to gambling.[13] In all four cases, policymakers attempt to alter behaviour that is often compulsive to the point of dependency. In all four, they need to reckon with a social environment that may promote harmful behaviour. All four also involve the challenges of appropriately regulating often powerful businesses with strong economic interests at stake. For these reasons, we have chosen to address the four issues together in this series.

POLICYMAKERS HAVE BEEN RELUCTANT TO INTERVENE

For all the harm caused by tobacco, alcohol, obesity and gambling, policymakers – certainly at Westminster – have offered mixed messages at best. Newspaper reports suggest that then health secretary Matt Hancock attempted to 'bury' the 2019 prevention Green Paper, supposedly in order to curry favour with incoming prime minister Boris Johnson, who was more sceptical of public health intervention.[14] That paper set an ambition for England to be 'smoke-free' by 2030. Yet the Tobacco Control Plan that was supposed to chart a path to that target has been delayed and delayed[15] – notwithstanding a speech from the public health minister last month outlining some measures to reduce smoking.[16]

The government did publish an obesity strategy in 2020 – with Boris Johnson apparently changing his political position as a result of his experiences with COVID-19.[17] Some of the measures in that strategy have been implemented – notably, mandatory calorie labelling on restaurant menus and regulations preventing stores from putting junk food in prominent locations like the entrance or near checkouts. However, proposed bans on TV advertising of junk food before the 9pm watershed and multi-buy discounts (e.g. 'buy one get one free' deals) have been postponed.

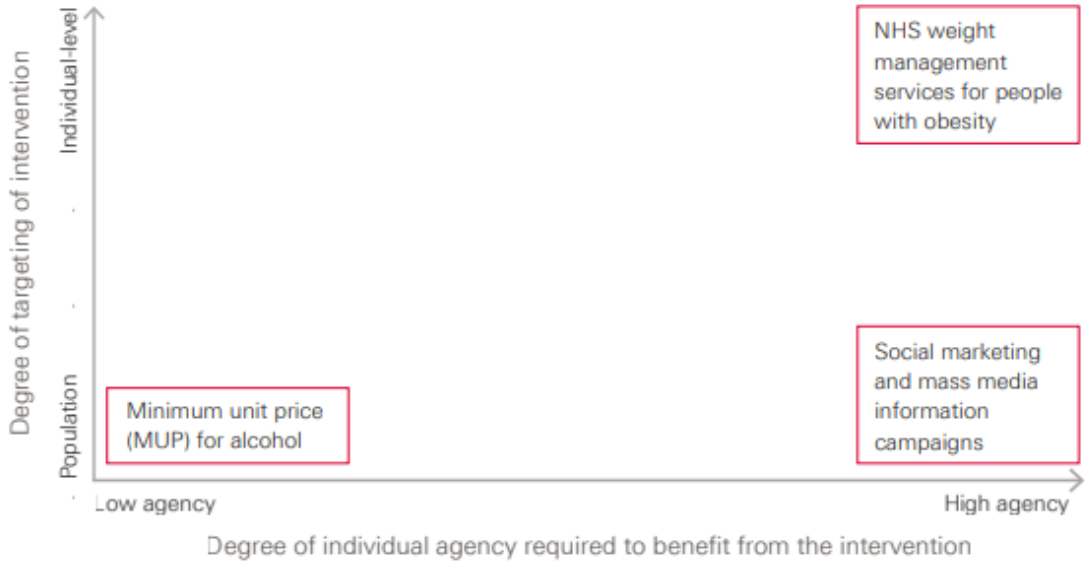
The government has failed to renew its alcohol strategy since the last one was published in 2012. Moreover, it u-turned on the centrepiece of the 2012 strategy – introducing a minimum price for alcohol, a policy subsequently implemented in Scotland and Wales.[18] The subsequent decade has also seen a series of cuts and freezes to alcohol duty, with the consequence that beer duty is now 29% lower than it was in 2013 in real terms.[19]

Prevarication has also been a feature of gambling policy. A review of the Gambling Act 2005 was initially announced in December 2020. The White Paper did not emerge until April 2023, and most of its elements (including a mandatory levy on the gambling industry, affordability checks and caps on online slot machines) are subject to further ongoing consultation.[20]

The UK government has not, however, been equally wary of all types of public health intervention. In general, it has tended to favour measures that preserve or promote consumer choice and agency – for example, public information campaigns and labelling – over measures that try to alter the economic and social context, such as taxes and restrictions on availability.

This conceptual difference in approach is hard to pin down precisely. We might describe the government as preferring individual-level intervention to population-level intervention, or non-regulatory to regulatory policies. More colloquially, we might speak of a 'carrot rather than stick' approach. These distinctions do not map perfectly onto one another: the Health Foundation presents policies on a two-dimensional diagram, with degree of targeting (population vs individual) on one axis, and expectations of individual agency on the other. It highlights the fact that some population-level policies – such as mass media information campaigns – require high agency to work.

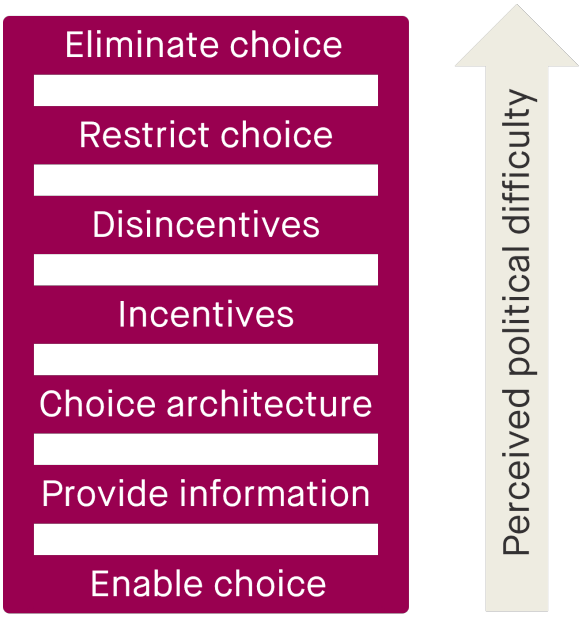
Figure 1: Health Foundation mapping of public health interventions



Source: Health Foundation, Addressing the leading risk factors for ill health

A particularly influential framework for public health policies is the Nuffield Council on Bioethics' 'intervention ladder', which ranks interventions in terms of their "intrusiveness" – the extent to which they restrict the liberties of individuals, the population as a whole or specific industries.[21] An adapted version of the intervention ladder is presented in Figure 2. The Nuffield ladder has its critics, particularly those that believe it fails to reflect the extent to which protecting people's health can enhance their autonomy.[22] But it continues to be widely used in the literature.

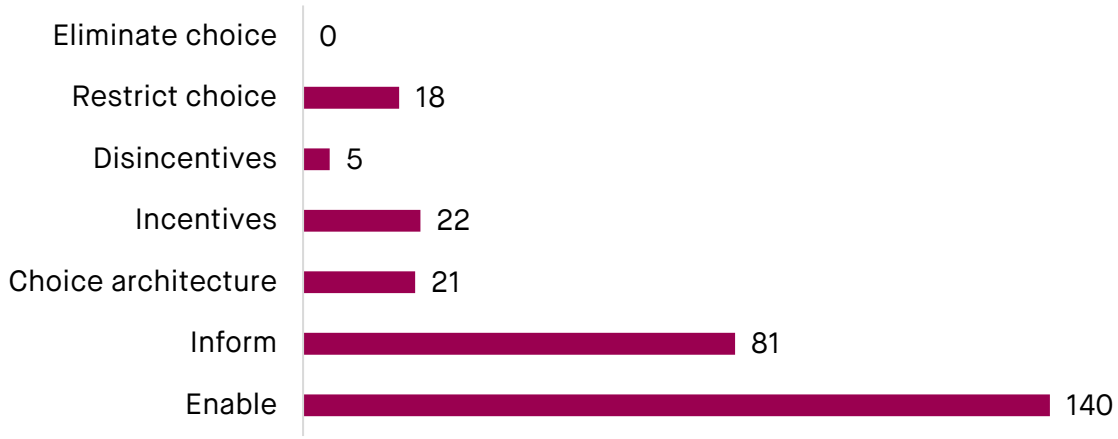
Figure 2: Nuffield intervention ladder – as adapted by SMF



Source: Nuffield Council on Bioethics, Ethics tools for decision-makers; SMF analysis

For example, it was used in an analysis of government obesity strategies in England between 1992 and 2020, categorising the policies they contained in terms of their position on the Nuffield ladder.[23] The study found no examples of policies that entirely eliminate choice, relatively little use of disincentives like taxes and a few measures that aim to restrict choice (e.g. regulating promotions). By contrast, the vast majority of policies attempted to enable choice (e.g. providing vouchers for fruit and vegetables) or inform it (e.g. public awareness campaigns). In other words, policymakers have been far more comfortable towards the bottom of the ladder of intervention.

Figure 3: Number of policies of each type in England Government Obesity Strategies, 1992-2020

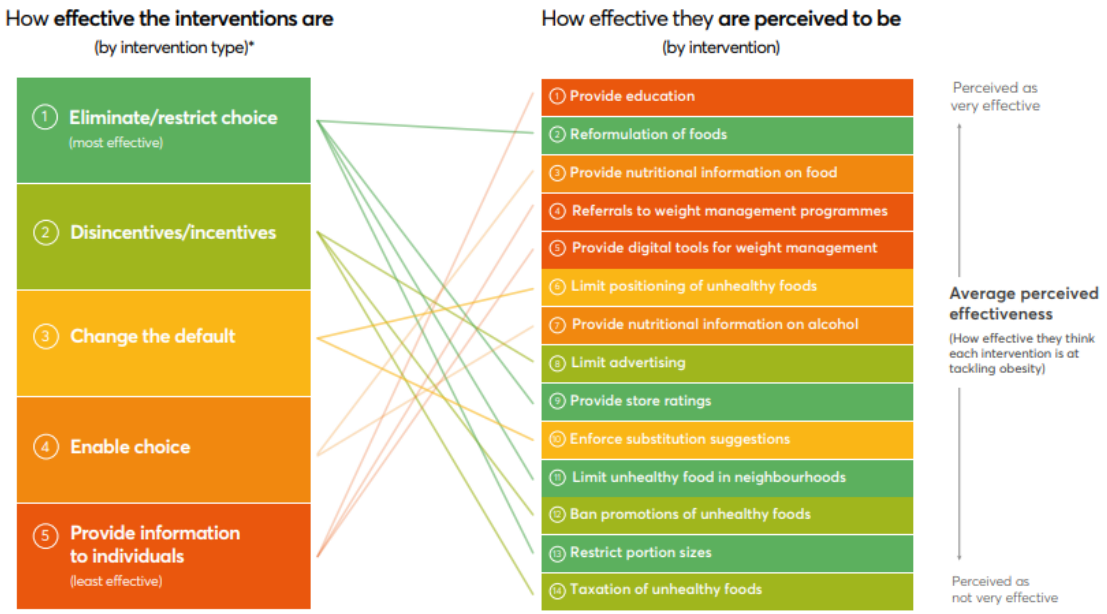


Source: Theis & White, Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992-2020; SMF analysis

It remains to be seen how far the current Labour Party will break with this tendency. Its recently announced 'health mission' set a target to improve healthy life expectancy, and to ensure "fewer lives lost to the biggest killers".[24] In particular, it singled out cardiovascular disease as being extremely common and "highly preventable through lifestyle changes"[25] – it has been estimated that 80% of heart attacks in under 75s could be avoided by stopping smoking, improving physical activity, cutting drinking and lowering blood pressure and cholesterol.[26] Yet while Shadow Health Secretary Wes Streeting has said he is prepared to use "the heavy hand of state regulation" to tackle smoking and junk food marketing[27], he also seemed to express a preference for "working with the food and drink industry" on product reformulation.[28] And Keir Starmer has suggested that minimum pricing for alcohol and taxes on unhealthy foods would be inappropriate during a cost-of-living crisis.[29]

It is not just policymakers: a 2001 survey conducted by Nesta and the Behavioual Insights Team (BIT) found that the general public are more likely to perceive interventions lower down the Nuffield ladder (i.e. less intrusive) as more effective (Figure 4).[30]

Figure 4: Perceived effectiveness of obesity interventions



Source: Nesta & Behavioural Insights Team, Changing minds about changing behaviour

Such attitudes are understandable. Banning and regulating, restricting choices and putting up prices are ideologically challenging for many policymakers, for the simple and obvious reason that they seem to reduce people's freedom. Moreover, such policies, especially when they are blanket population-wide measures, are bound to feel like blunt instruments compared to more targeted or individual-level interventions.

The problem, as we shall see, is that more interventionist approaches tend to be more effective. Sometimes that is just assumed to be the case – as Figure 4 shows, Nesta and BIT assert that interventions further down the Nuffield ladder are less effective, without providing any supportive evidence. In the rest of this briefing, we examine that assumption, exploring the evidence on different types of tobacco, alcohol, obesity and gambling policy.

THERE IS A TRADE-OFF BETWEEN EFFECTIVENESS AND PERCEIVED POLITICAL ACCEPTABILITY OF PUBLIC HEALTH POLICIES

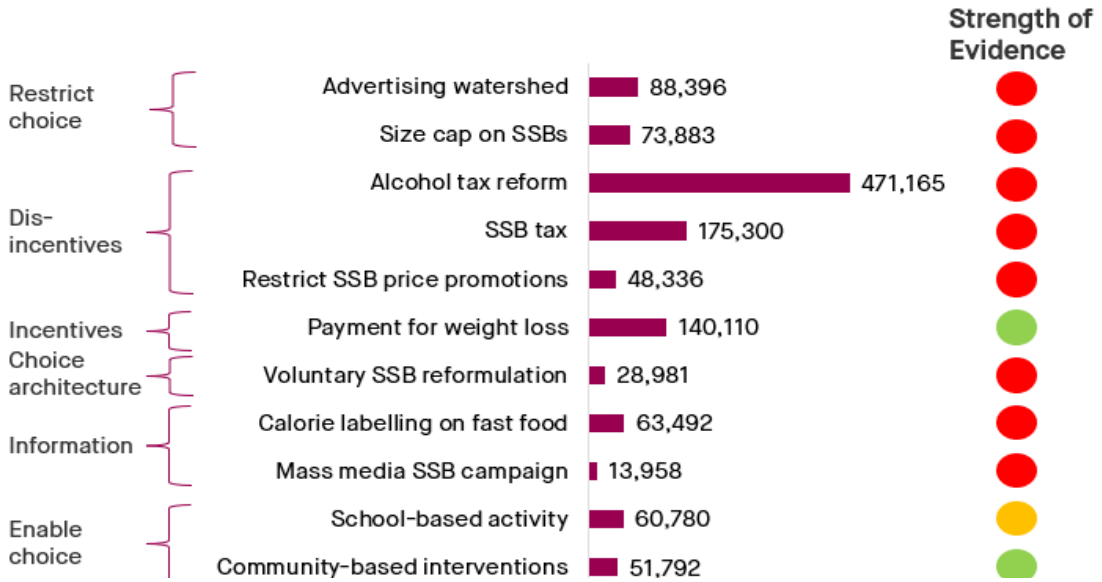
Attempts to order different types of policy and approach to public health in terms of their effectiveness generally produce a ranking that is the opposite of the measures policymakers tend to favour. Thomas Frieden proposes a "health impact pyramid", with the least effective interventions at the top being those that primarily rely on individual effort, such as counselling and education, and the most effective interventions at the base being population-wide measures to change societal context and address socioeconomic problems.[31] Similarly, Capewell and Capewell ague that there is an "effectiveness hierarchy", with 'upstream' interventions like legislation and taxation at the top, and 'downstream' interventions like screening, advice and preventative medication at the bottom.[32]

Obesity

These frameworks offer useful rules of thumb, though they come with some nuances and caveats when we try to apply them to specific policy areas. The ACE-Obesity study, an Australian priority-setting project assessing a range of policies for effectiveness and cost-effectiveness, offers us a useful starting point when it comes to obesity.[33] While the estimates it generates may not translate perfectly to the British context, we would expect the UK to be similar enough that it offers a reasonable idea of how different types of intervention compare. The study reviewed the evidence base behind each policy, and for those with strongest evidence of effectiveness modelled the expected size of their impact on population health (in terms of 'health adjusted life years' saved).

Figure 5 summarises the findings of the analysis. The first thing to notice is that the strength of evidence for most of the policies is categorised as low. This should not be taken to mean that most policies are ineffective, or unlikely to work on the balance of probabilities. It merely reflects the reliance on observational research, given the practical difficulties of running experiments with obesity policy.

Figure 5: Estimated Health Adjusted Life Years saved by policy in Australia



Note: SSB = sugar sweetened beverage

Source: Deakin Health Economics, Assessing Cost-effectiveness of Obesity Prevention Policies in Australia

The upshot is that individual-level interventions – things like incentive payments for losing weight and weight management programmes – actually have the strongest evidence behind them, because they are amenable to randomised controlled trials. New weight loss drugs such as semaglutide, which appear to have significant potential to help address obesity, were not covered by the study, but would also fit into this category.[34]

However, just because the evidence is stronger does not necessarily mean that individual interventions are more effective than population measures. In fact, the ACE-Obesity study finds that on average, regulatory interventions saved 1.7 times as many health adjusted life years as programme-based interventions. In other words, while we can be less certain that population-wide measures work, if they do work, we should expect them to have a bigger effect.

To a large extent this is because we can reach many more people at a time with population-wide interventions. Levying taxes or regulating marketing affects tens of millions of people at a stroke. By contrast, with individual interventions we have to engage people one at a time. This also contributes to the fact that regulatory interventions tend to be cheaper. Indeed, in some cases (notably taxes) they can bring in revenue for the government. As a result, population measures tend to be considerably more *cost-effective* than individual ones.

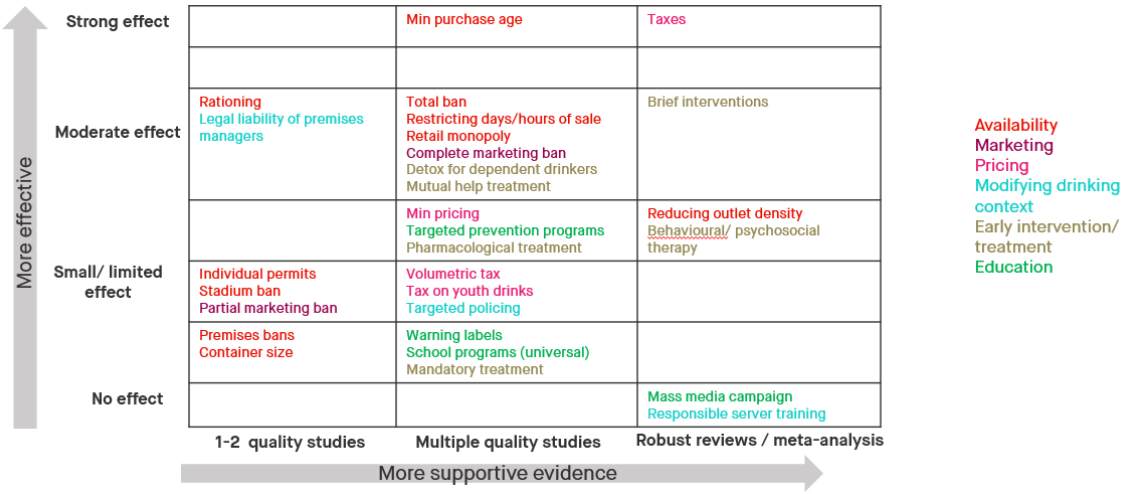
Further, it is worth noting that the most effective individual-level interventions tend to involve treatment rather than prevention. All else equal, that makes them less desirable. Given the harms associated with obesity, it would be better if people did not have to experience it all, than to wait for them to develop it and then reverse it.

Alcohol

On alcohol policy, the most authoritative assessment of the relative effectiveness of different policies is in the book *Alcohol: No Ordinary Commodity*.[35] In it, a group of expert researchers led by Thomas Babor review the evidence on a range of different types of alcohol policy, and rate them on two dimensions. First, effectiveness, where the scale runs from "lack of effect" (i.e. the policy has been evaluated and failed to reduce alcohol consumption or harm) to "strong effect" on consumption and harm. Second, breadth of research support, ranging from interventions with no or only one or two well-designed evaluations to those backed by enough research to be integrated into reviews or meta-analyses.

Figure 6 summarises the findings. It shows that raising taxes on alcohol is comfortably the most compelling intervention, demonstrated to have a substantial impact on alcohol consumption and harm across a range of studies. Raising the minimum purchase age for alcohol also seems to have a strong effect on drinking, but has less evidence behind it.

Figure 6: Effectivess of different alcohol policies



Source: Babor et al, Alcohol: No Ordinary Commodity

Of the policies deemed to have a "moderate effect" on alcohol harm, the one with the strongest evidence base is "brief interventions", structured discussions with individuals (often within healthcare settings) that encourage them to reflect on and reduce their drinking. More generally, policies in this tier tend to involve regulations (e.g. reducing availability by limiting hours of sale, or banning alcohol marketing) or treatment for dependent drinkers. As with obesity, then, the most effective policies tend to be either population-wide taxes and regulations, or individual treatment. And as with obesity, the latter tends to be more expensive and so less cost-effective.

Educational interventions to inform people of the risks of harmful drinking are regarded rather poorly, and have little to no evidence of effectiveness.

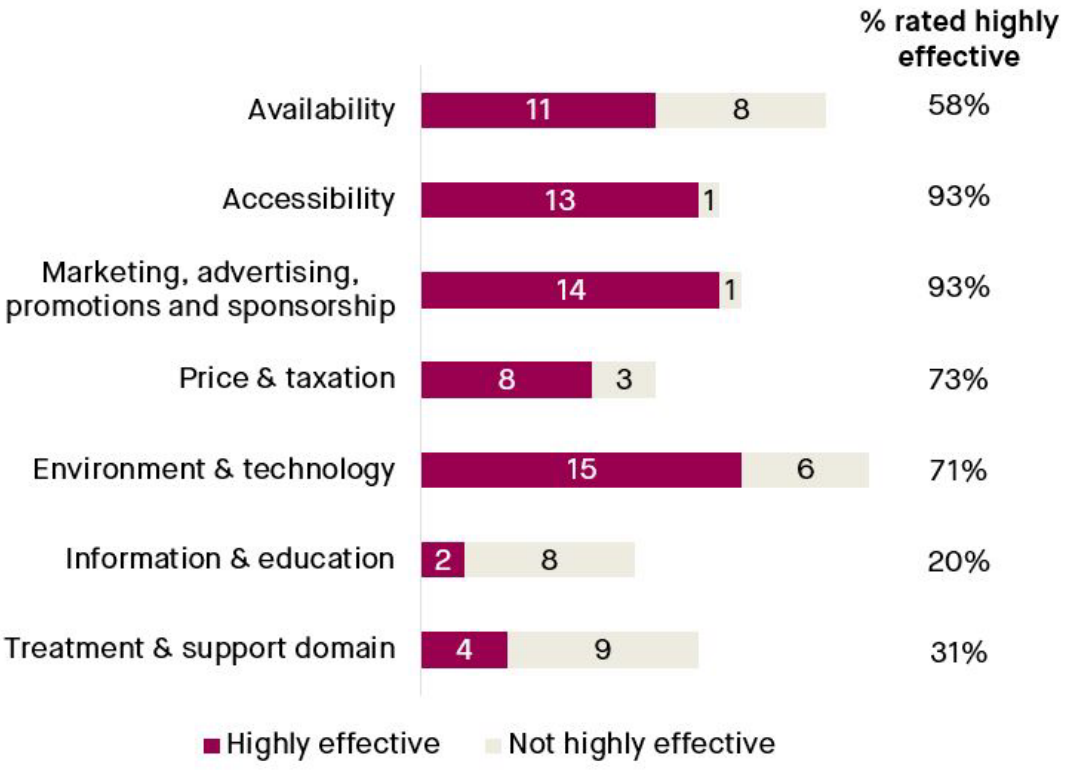
Gambling

Gambling regulation and policy is in many ways less mature than obesity, alcohol or tobacco. We therefore have fewer real-world examples to draw on, and efforts to compare and rank policies often proceed by analogy with interventions in other areas as much as direct and robust evidence on gambling itself.

One study published last year engaged in a "Delphi exercise", a method to establish expert consensus, to map out perceived effectiveness of different gambling policies.[36] It drew together academics, those involved in service delivery and commissioning, policymakers, public health researchers and those with lived experience of gambling harm. The panel was asked to rate different proposed policies in seven domains.

Figure 7 summarises the findings. It suggests that in general, more restrictive policies are believed to be more effective at averting gambling harm, though there were policies rated effective across all domains. Policies that make gambling less affordable (e.g. banning gambling on credit), restrict advertising (e.g. preventing operators from advertising to self-excluded people) and reduce its accessibility (e.g. adding age verification to gambling websites) were deemed as particularly likely to be effective. On the other hand, perhaps reflecting the experience of alcohol policy, experts are extremely sceptical of information and education measures.

Figure 7: Number of policies in each domain rated effective



Source: Regan et al, Policies and interventions to reduce harmful gambling

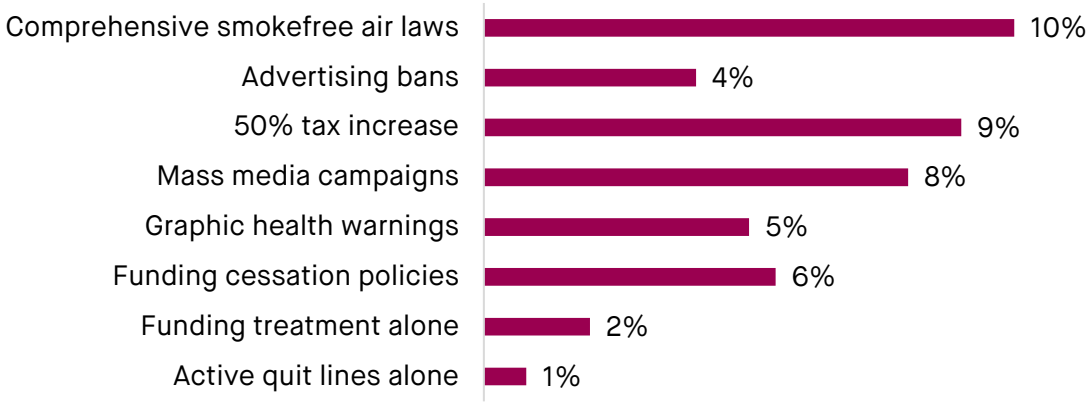
We should interpret these findings with some caution. As noted, they are based on expert judgement rather than direct evidence. Moreover, these judgements appear to be rather less conservative than other studies, given how many policies meet the standard of "highly effective", a term used sparingly in other research. Nevertheless, the research provides an interesting point of comparison and overlap with analyses of other policy areas.

Tobacco

If harm reduction policies for gambling are in their infancy, tobacco control is fully grown. As a result, the quantity and standard of evidence on measures to reduce smoking tends to be much higher. That permits more sophisticated analyses, providing not only qualitative judgements of effectiveness, but also quantitative modelling estimating just how effective different approaches can be – as in the ACE-Obesity study.

The Tobacco Control Scorecard draws on an evidence review produced by an expert panel convened by the US Centers for Disease Control and Prevention. It collates studies on high income countries up to 2016 to produce aggregated estimates of effect of different policies on the prevalence of smoking over five years from a baseline of 25% (the rate of smoking in the US around the time of most of the studies).[37]

Figure 8: Short run percentage reduction in smoking prevalence



Source: Levy et al, The Impact of Implementing Tobacco Control Policies

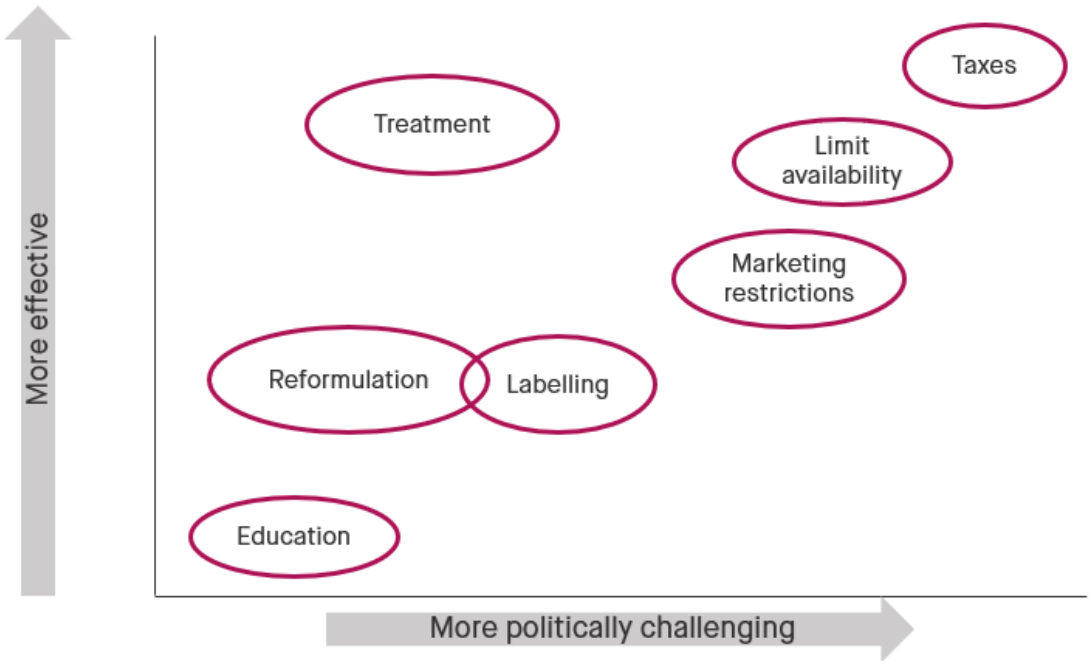
Figure 8 sets out its main findings. It reveals some interesting common threads with obesity, alcohol and gambling, but also some contrasts. Once again, regulations and taxes appear to have the biggest impact. The single best policy, expected to reduce smoking rates by 10%, is to implement smokefree legislation (i.e. "smoking bans" in indoor and public places). The second best is a substantial increase in tobacco taxation – once again, reducing affordability is seen as highly effective.

Interestingly, and in contrast to other policy areas, mass media education and information campaigns appear relatively effective for tobacco. It is unclear exactly why this might be. It could be that tobacco campaigns have been better resourced and designed than other public health media campaigns. Or it could be that they have been implemented in combination with other tobacco control policies, which have enhanced the effectiveness of the media campaigns. Either way, the experience of tobacco suggests that the evidence so far may underestimate the potential of what well-delivered information and education campaigns, as part of a wider holistic strategy, can contribute to reducing alcohol, obesity and gambling harm.

A general trade-off?

Figure 9 attempts to summarise the findings of this paper into a single chart. The chart is conceptual and theoretical, rather than based on data. However, it reflects the themes we have uncovered so far across the different policy areas we have explored. Overall, it represents a trade-off between policies that are more effective at improving public health and policies that are seen as more politically straightforward to implement (those policies that are more targeted and perceived to impinge less on personal freedoms).

Figure 9: General effectiveness and perceived political feasibility of approaches to public health



Source: SMF analysis

Taxes have consistently been the most reliably effective way to reduce consumption of harmful products, but also seem to be perceived among the most politically contentious, so they are placed in the top right of the chart. Education is far less controversial, but is generally regarded as ineffective, so it sits bottom left. Treatment services are an interesting outlier – they tend to have reasonably strong evidence of effectiveness, and are more targeted and less interventionist than many other policies. However, what the chart does not show is that they are also much more expensive, and therefore less cost effective than the other options displayed.

This would seem to suggest policymakers addressing harm from alcohol, tobacco, gambling and obesity face a clear dilemma between pursuing policies that are comfortable and more straightforward and those that make a substantial difference to the problem they want to address.

Note, however, that throughout this paper we have referred to policies as being "perceived" as more or less politically challenging. What we have not done is test the accuracy of those perceptions. That is the objective of the next paper in this series – which will look at whether effective public health policy really is as politically difficult as it seems.

ENDNOTES

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