

## The carrot or the stick: What works best for effecting behavioral change to improve health at the population level?

Research around COVID-19 has revealed that certain populations are at far higher risk of dying or entering intensive care if they contract the virus, including those over 60, some Black, Asian, and minority ethnic populations and those with health conditions such as chronic obstructive pulmonary disease (COPD), diabetes and obesity. Of course, factors such as age and ethnicity cannot be changed, but others – such as obesity – are modifiable.



One study showed that of those people requiring hospitalization for COVID-19, 44% were overweight and 34% were obese (Ho, 2020).

An editorial in the *BMJ* went as far as suggesting the international food industry should be held partly responsible for the large death toll (Tan, 2020). “It’s like tobacco,” said Graham A. MacGregor, who co-authored the editorial. “Why should the food industry be able to advertise things that are going to kill you?” (Wood, 2020).

Beyond recrimination, it is sparking a movement for change. In several countries, the spotlight is now firmly on tackling obesity. In the UK for example, after having recovered from his own spell in intensive care with COVID-19, Prime Minister Boris Johnson conceded that he had been “too fat” and rapidly launched a new UK government's strategy to lower obesity rates in the country.

The high rates of obesity in the UK (63% of adults are above a healthy weight, with around half of those people being obese) may have contributed to the nation's high COVID-19 related death toll. It is the latest example in a long list of government programs to effect behavior change to improve health at the population level. But what elements are needed to make programs such as this successful?

Despite being the backbone of most government health campaigns for decades, provision of information and advice is not enough, and rarely sufficient to change behavior (Eufic, 2014). Effecting behavior change is extremely challenging – it taps into a host of situational, personality and socioeconomic factors, many of which are “hard-wired”. Fundamentally, people do not necessarily resist change, but they do resist *being* changed (Laverack).

## So, what does work?

Let's look at the example of smoking cessation, which has been a major focus for governments (to a varying extent) for several years.

Several countries – such as Sweden, Norway, the UK and South Korea – have succeeded in significantly reducing smoking prevalence in recent years. For example, in South Korea, smoking prevalence has fallen from 31.5% in 2004 to 18.6% in 2019 (Euromonitor International, 2020).

The consistent factor between high success countries such as these is the combination of “carrot and stick” policies, which have been steadily introduced and comprehensively implemented over time, with the cumulative weight of interventions building to successful outcomes.

The “stick” policies to encourage smoking cessation include tax increases, advertising bans, public smoking bans and package warnings – all of which represent an almost didactic instruction from the government not to partake in this behavior. For some people this may be enough but for most it probably is not. To effect long-term behavior change, the carrot is needed as well.

With smoking cessation, this comes in the form of provision of support, specifically stop smoking services that ideally include trained professionals with a full range of medications and substitutions at their disposal.

In 2005 in South Korea, 253 public health centers started providing comprehensive stop smoking services to combat tobacco dependence through counselling, treatment and follow-up through text and email. The associated quit rates were very high – a study evaluating 804,334 adult male smokers attending the 253 smoking cessation clinics between 2006–2009 found that the overall 6-month quit rate was 46.8% (Kim et al, 2013).

Conversely, in general, countries that have not implemented interventions in a comprehensive way and have not made support services available at the same time as legislation, have been significantly less successful.

With any campaign seeking to effect change in behavior, when support is offered, the direct involvement of professionals (e.g. counsellor, life coach, fitness coach) is associated with higher success rates. The challenge is that for healthcare systems and most individuals, this level of support has a high impact on budget and could be perceived as unaffordable if not supported with data on cost effectiveness. The good news is that there are countless medical and digital technology companies getting involved in this space, developing advanced, connected solutions to help encourage people's self management and hence keep the associated healthcare costs reasonable.

Which brings us back to the UK's obesity campaign. In the short term, the program has offered a free NHS 12-week weight loss plan app, for individuals to download and follow. That's fine, but unlikely to be enough for most people. More promisingly, the program talks about making "weight management services available from next year to those most at risk" (Gov.uk 2020), which suggests a more hands-on service, similar to the stop smoking services mentioned earlier. The evidence suggests that this is the level of support required to effect meaningful change.

## Conclusion

COVID-19 has thrust the spotlight onto chronic conditions that are associated with significantly worse outcomes for those who contract the virus. Obesity stands out as a modifiable risk factor and governments are beginning to recognize the urgency of taking action. Lessons should be learned from public health campaigns of the past, in particular

success stories such as in driving down smoking prevalence through a combination of “carrot and stick” policies. To effect meaningful behavior change and drive better outcomes at the population level, the provision of meaningful support for individuals to help them in their health journey is essential.

## References

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