

Expert systems, COVID-19, obesity and the ‘new normal’

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COVID-19 has exposed how the complex and interdependent systems that structure everyday life (eg. food, transport, work, communication, the built environment), can be destabilised by a ‘global threat’ emergency. Many of these systems, and the relationships among them, are under the scope of political governance - health, economics, trade, technology, environment, education, policing and communication. These systems intersect and interact, generally functioning to the good, but can deliver unintended negative consequences when a potential outcome is not considered in their set-up, standard operation and regulation. While at the individual level obesity is an outcome of positive energy balance (calorie in exceed calories out), the structures that provide calories and influence physical activity patterns are ruled by expert systems, with the food system and the configuration and use of mostly urban spaces providing the preconditions for ‘obesogenic environments’. The construction of obesogenic environments through the operation of such systems globally has contributed to the rise of obesity at least since the 1980s (1), often operating through mechanisms that discriminate across lines of inequality (2). In England, childhood overweight and obesity rates are highest and have increased in areas of greatest deprivation since 2006- 7, when the National Child Measurement Programme was initiated. Obesity creates long-term illness susceptibilities, especially in relation to most chronic diseases and physical disability, as well as being a recently-identified important risk factor for severe COVID-19 infection. Childhood obesity is an amplifier of socioeconomic inequality, food insecurity associated with low socioeconomic position being a causal factor in the development of obesity (2).

Reviews and research from the Unit for BioCultural Variation and Obesity, University of Oxford, undertaken in the past decade, have integrated health, eating and culture to analyse obesity, food poverty/insecurity and their intersections. In challenging individualised notions of vulnerability, this work builds the evidence base for appropriate societal-level prevention and intervention.

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While preventive, curative, and global health collaboration is a prerequisite for effectively addressing the COVID-19 pandemic, focusing closely on medical and public health interventions risks closing out non-medical interventions which might offer ways to improve how life might be lived in a COVID-19 future. Larger collective interventions might help create a 'new normal' that we will inhabit in the future; this should include the regulation of expert systems away from unintended consequences (3) including increasing obesity rates.

Obesity, and the production of obesogenic environments, are linked to the operation of several expert systems, including agriculture, food production and processing, retail, transportation, epidemiology, urban planning, engineering, distribution planning, public transport, medical management and medical diagnosis (1). Extending the boundaries of intervention against COVID-19 would allow medicine, public health, primary health care, environmental policy and transport systems, economy, urban design and education to plan and implement a new normal in an interconnected way, incorporating resilience thinking in relation to COVID-19, other future global threat emergencies (3), as well as consistently-present issues like obesity.

Long-term efficacy of interventions is only possible if the ecological and biosocial feedback loops they create are understood and incorporated – how will interventions influence social, work and family relations, for example? In England, COVID-19 lock down resulted in increased levels of anxiety, poor sleep, persistent sadness, binge eating, suicidal thoughts, snacking and consumption of alcohol (4). These changes, should they persist, will have long-term consequences for increasing obesity and chronic disease rates.

Underpinning the changes in mental health and in eating and drinking behaviours in the English population during lock down are uncertainty and insecurity, both of which are associated with obesity (5). Both uncertainty and insecurity increased greatly during lock down, when the physical social connectedness that usually help ameliorate their negative consequences were effectively withdrawn. Isolation is a tried and tested method of reducing the spread of pandemic infectious disease, but it is not a model of how life should be lived, nor is it conducive to reducing rates of obesity, especially if negative behaviours learned during lock down persist.

The long-term implications of the COVID-19 outbreak include aspects of sociality and economic production that will be changed forever. Work life will mesh with home life to a far greater extent than before the outbreak, social cohesion will become weaker in respect to physical connection, stronger in respect to online and virtual relationships. Real (as opposed to more casual online) relationships require at least occasional face-to-face interaction to maintain them – this applies to the world of work as much as to personal life. Obesity rates risk rising more rapidly if these changed practices become the new normal. A dystopian view sees general or localised social isolation and increased insecurity in an increasingly uncertain world intersecting in obesogenic environments that offer amelioration of stress and anxiety through the consumption of

ultraprocessed foods and the consumption of digital entertainment. This would be a perfect storm for rising obesity rates, especially in areas of deprivation and of high BAME composition.

Dystopia can be avoided, however. To maintain social cohesion beyond the geographically immediate family or kin group, new rules of social engagement will have to be developed. These will in part emerge from the renewal of social life as lock down eases. COVID-19 has exposed inequalities – gender, BAME especially – and these will require careful consideration in respect of how social cohesion is maintained and developed in a new normal. This includes the balance of real and on-line relationships. The physical and mental health benefits of social cohesion are enormous. Beyond offering a check on rising obesity rates, it privileges economic performance, health and well-being, as well as reducing the risk of developing COVID-19 disease and its complications.

The long-term implications of COVID-19 are tightly bound to the social and psychological factors that are involved in the production of obesity – food insecurity, disordered eating, general insecurity, anxiety, social and physical isolation. In seeking a new normal, there is the opportunity to consider how expert systems might be regulated for the common good as well as for economic growth. Such systems operate as ecologies and are difficult to understand; the challenge is knowing when and how to regulate them. In the context of obesity, the social and economic well-being of the population is in the balance, and in re-thinking, re-configuring and regulating systems of agriculture, food production and processing, retail, transportation, urban planning, distribution planning and transport, it is important to ask ‘what are the implications of any particular change for obesity rates?’

References

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