

The role of the transnational ultra-processed food industry in the pandemic of obesity and its associated diseases: problems and solutions

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Abstract

Policies to control and prevent the pandemic of obesity and related conditions and diseases have failed. This is because the efficient causes of the pandemic have not yet been agreed. We state here that its outstanding immediate cause is the increased and rapidly increasing consumption of ultra-processed foods, which displace unprocessed or minimally processed foods and freshly prepared dishes and meals, most conspicuously now in middle- and lower-income countries.

The underlying cause of this is the phenomenal rise since the 1980s of the transnational corporations whose huge profits depend on the use of cheap ingredients and arrays of additives made into ultra-processed food. The scale and power of the transnationals, which tend towards oligopoly, and their penetration of middle and lower-income countries, have been accelerated by global political and economic agreements that have deregulated trade and allowed capital flow that opens countries to penetration by foreign businesses.

Food is essential for life and health, but there is no need to consume ultra-processed foods. In this sense, they are similar to tobacco products. The same statutory policies and programmes that are applied to smoking should be adapted to limit and reduce consumption of ultra-processed foods. Revenue from taxation should be used to protect local food producers and retailers, to promote healthy and sustainable diets, and to

ensure food security for vulnerable populations. Overall, a Framework Convention on Food Systems, promulgated by the relevant United Nations agencies as agreed by UN member states, supported by professional and civil society organisations and social movements, is needed. This will be designed to create healthy food systems and supplies and thus healthy diets that also are beneficial socially, culturally, economically and environmentally.

Key words: Obesity; Food processing; Ultra-processed food; Food processing; Transnational corporations; Deregulation; Statutory policies.

Epidemics resemble great warning signs on which the true statesman is able to read that the evolution of his nation has been disturbed to a point which even a careless policy is no longer allowed to overlook.

(Rudolf Virchow) (1)

The stakes

A number of phenomenal global catastrophes confront humanity, including ‘superbugs’ resistant to antimicrobial drugs; cigarettes and other use of tobacco; alcohol abuse; climate disruption; gross inequities; and the pandemic of obesity and diseases of which obesity is a leading cause, notably diabetes, cardiovascular diseases and a number of common cancers. These dreadful calamities are similar in various ways. None are natural. All are disastrous socially and economically as well as personally.

There is however one difference. The causes of the first five phenomena mentioned here are known beyond reasonable doubt, and public policies and actions that would reduce the devastation they cause are generally agreed beyond reasonable argument. But this is not the case with obesity and related diseases. Their causes are still debated, and their remedies disputed.

The purpose of this commentary is to identify the basic causes of the pandemic (world epidemic) of obesity, and to propose appropriate solutions. General agreement involving governments, professional and public interest organisations and citizen movements, is needed to ensure coherent and concerted policies and actions.

What is meant by ‘cause’ here is not the immediate cause, but what Aristotle termed the efficient cause (2), or agent, also sometimes termed the vector. The main basic agents or vectors of what is now pandemic obesity are the transnational corporations whose profits depend on the manufacture, promotion and sale of ultra-processed food and drink products. This conclusion is supported directly or indirectly by the findings of over 200 papers published since 2010 in peer-reviewed journals as listed in the Medline database, from researchers working in a large number of independent academic institutions in various regions of the world. Some of these findings are summarised and referenced below.

The problem

Food processing is not the issue. Food processing as such is not a health problem, and criticisms of ‘processed food’ are therefore confusing and misleading. Most food is industrially processed in some way, and various forms of processing are useful or beneficial, as for example drying and wrapping, non-alcoholic fermentation, chilling and freezing, pasteurizing and vacuum-packing.

The problem is ultra-processed foods, as defined by the NOVA food classification system (3,4). These products are characteristically ready-to-consume industrial formulations of homogenised cheap ingredients obtained from high-yield crops, notably sugars and syrups, refined starches, oils and fats, protein isolates, and also sometimes from remnants of intensively reared animals. Such formulations are made to look, smell, and taste good or often irresistible, by use of sophisticated combinations of flavours, colours, emulsifiers, sweeteners, thickeners and other additives that have a cosmetic function.

Processes and ingredients used for the manufacture of ultra-processed foods are designed to create highly profitable branded products made from low-cost ingredients, with long shelf-lives, which are liable to displace the production and consumption of unprocessed or minimally processed foods, processed foods, and freshly prepared dishes and meals – or simply ‘real food’ for short. Their convenience, being imperishable and ready-to-consume, their hyper-palatability, branding and ownership by huge transnational corporations, their universal availability, and their aggressive marketing, give ultra-processed foods enormous market advantages over ‘real food’ (3,4).

Ultra-processed foods as a group have higher energy density, more sugar and unhealthy fats, and less dietary fibre, protein, vitamins and minerals, than non-ultra-processed foods, and their consumption is systematically associated with the deterioration of the overall nutritional quality of diets. This has been shown in studies, mostly using national dietary surveys, carried out in Brazil, Chile, Colombia, Mexico, the US, Canada, the UK, France, Belgium, Australia, New Zealand and Japan (5-24).

Experimental studies show that ultra-processed foods have low satiety potential, induce high glycaemic responses (25), and create a gut environment favouring microbes that promote inflammatory diseases (26). Cross-sectional and longitudinal studies show dose-response association between the dietary contribution of ultra-processed foods and obesity (27-30), and also hypertension (31), cardiovascular diseases (32), dyslipidaemia (33), metabolic syndrome (34), gastrointestinal disorders (35), total and breast cancer (36), depression (37), and all-cause mortality (38,39). An in-patient, two-week, cross-over randomized controlled trial conducted by the US National Institutes of Health compared diets with an average of 83% of energy from ultra-processed foods with diets containing no ultra-processed foods (40). The main findings of the trial showed that “when consuming ultra-processed food diets people ate on average 508 more calories per

day ... and that, not surprisingly given this finding, people gained weight on the ultra-processed diet (1.7lbs in just 2 weeks) and lost weight on the flip side (2.4lbs in just 2 weeks)” (41).

The nature of the processes and ingredients used in their manufacture, and their displacement of the production and consumption of ‘real food’, make ultra-processed foods intrinsically harmful to human health. This displacement is also a cause of social, cultural, economic, political and environmental disruption and crises, described elsewhere (3).

National dietary intake surveys show that ultra-processed foods may make up close to or even more than half of the total dietary energy consumed in some high-income countries such as the USA, Canada, the UK and Australia, (17-18,21, 42) and now between one fifth and one third of total dietary energy in middle-income countries (8,9,43). Statistics on global sales confirm the higher consumption of ultra-processed foods in high-income countries and show rapid and even exponential growth in middle-income countries. For example, between 1998 and 2012 sales of sugary and salty snacks and soft drinks increased by 50% in upper middle-income countries and more than 100 per cent in lower middle-income countries (44).

Population body weight has risen in parallel with the rise in the production and consumption of ultra-processed foods. In fifteen Latin American countries, increases in sales of ultra-processed products such as carbonated soft drinks, sugary or salty packaged snacks, biscuits, sweetened breakfast cereals, confectionery, ice cream and ready-to-heat pre-prepared meals between 2000 and 2009 were strongly associated with increases in population mean body mass indices (45). A similar study carried out between 2002 and 2014 using data from 80 countries in eight world regions shows similar results (46).

The problem behind the problem

Since the 1980s, the size and the reach of the transnational corporations whose profits depend on the manufacture and sale of ultra-processed food products have spectacularly increased. This is the problem behind the problem. These corporations, like the tobacco, alcohol and drug transnationals, tend towards oligopoly. While competitive in markets for specific product ranges, they all have the same overall policy, which is to magnify their political and economic power over the rest of the food industry as a whole, numerically far greater, including smaller manufacturers, producers, retailers and caterers.

Together, the revenues of ten giant transnational ultra-processed food corporations in 2017-2018 (Nestlé, PepsiCo, Unilever, Mondelez/Kraft, Coca-Cola, Mars, Danone, Associated British Foods, General Mills, Kellogg’s) amounted to more than a billion dollars a day (47). In that time period, the annual sales of Nestlé, with its 2,000 brands,

including baby formula and baby foods, packaged snacks, chocolate confectionery, breakfast ‘cereals’, ice cream, pre-prepared dishes, and instant soups and sauces, amounted to \$US 91.2 billion, and its profits to \$US 7.3 billion (48). Nestlé’s sales are roughly the same as the gross national product (GDP) of Sri Lanka and of Kenya (49). The annual sales of Pepsi-Co brands, whose brands are mostly ultra-processed packaged snacks and soft drinks, amounted to \$US 63.5 billion, and its profits to \$US 10.8 billion. (50). In each of Brazil, India, Mexico and Russia, one of the two market leaders in total packaged foods is transnational, and Nestlé is always one of the top three (51).

Since the 1980s, ‘neo-liberal’ economic policies and trade agreements formulated and enacted by global organisations supported by the most powerful governments have favoured transnational corporations. These policies and agreements have deregulated industry, promoted capital flow, opened countries to foreign investment, enabled transnationals to take over domestic companies, and constrained national governments from introducing statutory policies to limit consumption of ultra-processed foods (52). Meanwhile, increases in disposable income have made ultra-processed foods affordable for more people.

The transnational food corporations mount colossal mass-marketing campaigns, co-opt policy makers and health professionals, and lobby politicians and public officials to oppose public regulation. They fund and promote biased research, media stories and ‘infomercials’, and press citizens to oppose public health regulation of their industry (52). They fund, fund and control organisations, some seemingly independent, that represent their joint interests, notably based in Washington DC, Geneva or Brussels (53-55). One declares ‘Our member companies represent the global leaders of the food and non-alcoholic beverage industry. We employ more than 3 million people worldwide and had combined annual revenues in 2016 of over USD 410 billion’ (50).

The first and foremost loyalty of corporations is to their financiers and their shareholders. The profitability of ultra-processed food corporations depends on products being formulated from the cheapest ingredients. They successfully influence policymakers to subsidize crops they process, such as maize (corn) and soy, rather than healthier foods. Therefore, their interests are unavoidably in conflict with those of public health. They compete for market share, but they all have an overall strategy in common. To adapt the slogan sung in an old Coca-Cola advertisement, they want to “teach the world to snack” and thus displace freshly prepared dishes and meals, and build loyalty to their brands – in the case of Nestlé, from cradle to grave.

The mistaken ‘solution’

One standard response of transnational corporations to evidence that their products are causing the obesity pandemic is product reformulation. This strategy is now even supported by some policy-makers outside industry. This is not a solution. Changing one problematic ingredient for another, such as less fat but more sugar, **or** sugar replaced by artificial sweeteners, does not make ultra-processed foods healthy. Reformulated ‘premium’ ultra-processed lines ‘enriched’ with micronutrients and fibre sold with

health claims at higher prices could prove to be comparably more profitable, but would remain unhealthy products. A detailed analysis of the limits of product reformulation of ultra-processed foods has been published elsewhere (56).

In 2014, a *Lancet* Action Group on Non-Communicable Diseases (52) examined reformulation, stating: ‘The case for reformulation is most apparent in high-income countries where markets might be saturated with ultra-processed products... [Here]... consumers might prefer the new product without consuming more ultra-processed products... Nonetheless, in such countries, the main emphasis on and support of national governments and the public health community should be promotion of healthy meals, dishes, and foods’.

Also: ‘In low-income countries, benefits are less obvious, and the dangers are very apparent. In such countries, consumption of ultra-processed products is low. These countries are therefore the prime targets of transnational corporations. If they reformulate, advertise, and promote some of their less unhealthy products as healthy – e.g., sodium-reduced (but still high energy-dense) packaged snacks or artificially sweetened (but still nutrient-devoid) soft drinks – the overall consumption of ultra-processed products is likely to increase, which would undermine long-established dietary patterns based on fresh or minimally processed foods. In low-income countries, the reformulation of ultra-processed food and drink products is similar to the tactics of the tobacco industry in the introduction of filtered cigarettes and low-tar cigarettes’.

The conclusion of *The Lancet* Action Group was: ‘The reformulation approach is a damage-limitation exercise, to avoid evidence-based approaches such as the restriction of availability and of advertising, and pricing policies designed to promote healthy food’.

The rational solution

What to do? It is often said that food is not like tobacco or alcohol, in that food is necessary for life. This is true. But there is no need to consume ultra-processed products, which in this respect are therefore similar to tobacco and alcohol. So the solution becomes obvious. International agencies and governments, encouraged by public interest civil society organisations and social movements, and supported by public health authorities, should design and implement statutory including fiscal public policies and actions, designed to control and reduce the manufacture, sale, promotion, availability and consumption of ultra-processed products, similar to those used to control and reduce use of tobacco and consumption of alcoholic drinks. The collaboration of government departments and international and national organisations responsible for social, cultural, agricultural, financial and environmental regulations and other public action, as well as those of health, will be essential. Actions should include regularly updated estimates of the financial and other costs of the personal, social, cultural, and environmental impacts of ultra-processed foods, and of the corresponding

financial and other benefits of methods that encourage healthy food and freshly prepared meals.

Rational policies and actions agreed globally and applied nationally will promote sustainable and equitable agriculture, manufacture, distribution, retailing and catering. All subsidies and other incentives to grow crops solely or mostly used as ingredients in ultra-processed food, or as feed for animals mostly destined to be used in ultra-processed food, should be removed, and destruction of forests and other environmentally valuable land to grow such crops or to rear animals should be prohibited.

Taxes should be levied at two stages. The first tax should be on ingredients exclusively used by ultra-processed food manufacturers, in particular cosmetic additives. The second tax should be on the product as sold to consumers. The levels of taxation should be calculated to generate revenue equivalent to a substantial percentage of the profits currently made by the corporations.

The tax revenues gained should be sequestered and be sufficient to fund programmes designed to support production and consumption of healthy food, to improve public health, and to monitor progress. Much of the revenues should be used to support local co-operative and family farmers and small traders, to make unprocessed and minimally processed food more available and affordable, to ensure healthy meals in schools, hospitals and prisons, and to subsidize or otherwise lower or stabilise the retail prices of unprocessed and minimally processed foods so as to be affordable by vulnerable communities and families.

All advertising and promotion of ultra-processed products should be prohibited, and their labels should include prominent warnings. Special consideration needs to be given to institutional food. No ultra-processed food should be available in any form at workplaces, schools, hospitals and prisons, and no outlets selling ultra-processed food should be allowed within convenient walking distance of schools. Household economy and food preparation and cooking should be taught in all schools.

In summary, with ultra-processed food products, lessons should be learned from what has worked best to ensure tobacco control and reduction of smoking. Concerted action by international agencies and national governments, backed by professional and public interest organisations and citizen action groups, is needed. We support the proposal for a Framework Convention on Food Systems, as recommended by the 2019 Lancet Commission in what it identifies as the global syndemic of obesity, undernutrition, and climate change (57)

It is not just Big Tobacco anymore. Public health must also contend with Big Food, Big Soda, and Big Alcohol. All of these industries fear regulation, and protect themselves by using the same tactics. ... These... include front groups, lobbies, promises of self-regulation, lawsuits, and industry-funded research that confuses the evidence and keeps the public in doubt... This is formidable opposition. Market power readily translates into political power. Few

governments prioritize health over big business...Not one single country has managed to turn around its obesity epidemic in all age groups. This is not a failure of individual will-power. This is a failure of political will to take on big business.

(Margaret Chan, former Director General of WHO) (58).

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