



Conference on ‘Food and nutrition: Pathways to a sustainable future’ Symposium one: Building ethical food systems

Is it ethical to advertise unhealthy foods to children?

E. Boyland 

Department of Psychology, Institute of Population Health, University of Liverpool, Eleanor Rathbone Building, Bedford Street South, Liverpool, L69 7ZA, UK

The marketing of foods and non-alcoholic beverages (hereafter: food) high in fats, salt and/or sugar (HFSS) has been strongly implicated in the rising levels of childhood obesity worldwide. Multiple ethical concerns arise from the practice of exposing children to such marketing and efforts to monitor and restrict it through regulatory policies. There is considerable evidence that exposure to powerful food marketing messages affects children’s food behaviours in ways that are detrimental to good dietary health. Children are particularly vulnerable to being exploited and deceived by food marketing messages based on their cognitive and developmental immaturity. HFSS food marketing also affects numerous child rights enshrined within the UN Convention on the Rights of the Child (of which the UK is a signatory) including the right to the enjoyment of the highest attainable standard of health. The debate has become somewhat polarised between the public health community’s evidence-based assertion that all marketing is inherently exploitative and the rebuttal from food and marketing industry stakeholders that provided the marketing is ‘accurate and truthful’ and there is no ethical need to regulate. This polarisation is reflected in the complexity of policymaking decisions regarding the rationale for mandatory government-led policies or industry self-regulation. There are also ethical considerations inherent in the monitoring of children’s food marketing exposure, particularly in the digital sphere, by researchers for the purposes of informing policy design, scope and implementation. This review paper will explore the latest evidence on these issues and consider the implications for public health research, policy, and practice.

Advertising: Food: Ethics: Children: Health

The prevention and control of non-communicable diseases (NCD) is a global public health priority⁽¹⁾. Children and adolescents are substantially impacted by NCD; around a third of the EU population aged 15 years or older currently lives with an NCD⁽²⁾ and these diseases accounted for almost 40% of total deaths in adolescents (aged 10–24 years) in the EU in 2019⁽³⁾. As a result, approximately €700 billion is spent annually on treating NCD in the European region⁽²⁾. NCD are often driven by modifiable lifestyle risk factors, such as an unhealthy diet, leading

to overweight and obesity, raised blood pressure and blood glucose, and abnormal blood lipids⁽⁴⁾.

Globally, the prevalence of overweight and obesity in children increased more than fourfold between 1975 and 2016, from 4 to 18%⁽⁵⁾. More than 340 million children and adolescents (5–19 years) were living with overweight or obesity in 2016, and this has continued to rise in low- and middle-income countries while there had (pre-coronavirus disease 19) been signs of plateauing (at a high level) in higher income countries⁽⁵⁾. The coronavirus

Abbreviations: CRC, the UN Convention on the Rights of the Child; NCD, non-communicable diseases.
Corresponding author: Emma Boyland, email boyland@liverpool.ac.uk



disease-19 pandemic appears to have contributed to further increases in childhood overweight and obesity. In England, for example, obesity prevalence increased from 9.9% in 2019/20 to 14.4% in 2020/21 for 4–5 years old children, and from 21.0 to 25.5% for those aged 10–11 years⁽⁶⁾. This may reflect factors such as increases in screen time, changes in accessibility of foods and restrictions over the use of public spaces during the pandemic⁽⁷⁾.

Numerous prevention policies have been proposed and implemented in the drive to reduce obesity and premature mortality from NCD (as well as their impact on psychological outcomes and quality of life). These include measures targeting the marketing of unhealthy food⁽³⁾ – particularly that to which children are exposed⁽⁸⁾. In support of this, the WHO recommends that member states use robust policies to limit such marketing activity⁽⁹⁾. This reflects the accumulation, in recent decades, of considerable evidence demonstrating links between children's exposure to unhealthy food marketing and both the behavioural effects that are detrimental to good dietary health⁽¹⁰⁾ and contribute to the development of obesity⁽¹¹⁾.

However, the food and advertising industries and the public health community often have different perspectives in terms of the evidence supporting the impact of marketing on children, the acceptability of marketing unhealthy foods to this demographic and the need for, and utility of, policy action⁽¹²⁾. Associated challenges in the design and implementation of restrictive food marketing policies⁽¹³⁾, as well as the development of methods to evaluate their impact on key indicators⁽¹⁴⁾, have highlighted the multiple ethical issues inherent in the practice of exposing children to unhealthy food marketing and efforts to monitor and restrict it.

The aim of this review paper is to explain and dissect the contemporary evidence on these ethical issues and explore the implications for public health research, policy, and practice. In so doing, the terms 'child' or 'children' are used to cover all children and adolescents under age 18 years, consistent with the UN Convention on the Rights of the Child (CRC)⁽¹⁵⁾ and the WHO ECHO Commission report⁽¹⁶⁾. Furthermore, many of the ethical issues discussed apply to food *marketing* (activity intended to promote the consumption of particular products and services) not just food *advertising* (one type of marketing activity)⁽¹⁷⁾. Therefore, both activities are considered where relevant, but it is recognised that the two terms are not synonymous.

Evidence of harm

The impact of food marketing on dietary behaviour and its antecedents is a function of both exposure to the marketing (the reach and frequency of the marketing message) and its persuasive power (the creative content of the marketing)⁽¹⁸⁾. There is considerable evidence that children are exposed to vast quantities of food marketing across multiple media and settings including television⁽¹⁹⁾ digital media⁽²⁰⁾, cinemas⁽²¹⁾, sports⁽²²⁾, outdoors⁽²³⁾ and even in schools⁽²⁴⁾. This marketing

predominantly promotes foods that contribute to unhealthy diets, with proportions of unhealthy food advertisements typically ranging from 50 to greater than 90% of all food advertising⁽¹⁰⁾. Globally, the most frequently marketed food categories include fast-food, sugar-sweetened beverages, chocolate and confectionery, sugary breakfast cereals and snack foods^(10,19). There is some evidence of ethnic and socio-economic inequalities in levels of exposure to food marketing and the nature of the foods promoted, such that children from minority or disadvantaged backgrounds are disproportionately exposed to unhealthy food advertising^(23,25).

Studies also demonstrate that the food marketing to which children are exposed uses a variety of creative strategies that are likely to appeal to, and resonate, with child audiences. These include promotional characters, celebrity endorsements, branding, visual imagery, novel designs, animation, dynamic elements and special effects⁽¹⁰⁾ as well as digital engagement tactics, events, games and incentives⁽²⁶⁾. Other features unique to digital media such as 'geo-tags' (the addition of geographical identification metadata to media files such as photos) and interactivity are also increasingly commonplace in marketing targeted at children⁽²⁷⁾.

The first peer-reviewed evidence of the effects of food advertising on eating behaviour in children emerged from the US in the late 1970s and early 1980s^(28,29). Since then, these findings have been corroborated and effects further characterised in studies captured within multiple large-scale systematic reviews and meta-analyses^(30–35). The most recent global evidence review, conducted to inform updated WHO global guidelines on restrictive food marketing policies, found that food marketing was associated with significant increases in children's food intake, choice and preference towards advertised/unhealthy foods as well as purchase requests by children to caregivers⁽³⁶⁾. Specific marketing techniques, such as promotional characters, have also been found to have significant effects on taste preference for unhealthy products, food liking and snack choice⁽³⁷⁾. Some analyses have also found a moderating effect of BMI, such that children living with overweight or obesity consumed significantly more kilocalories following food advertisement exposure relative to those of a healthy weight⁽³³⁾. Evidence for socio-economic differences in the impact of food marketing is more equivocal⁽²⁵⁾.

Based on a systematic review of the evidence, largely for the effects of television advertising, Kelly *et al.*⁽³⁸⁾ proposed a hierarchical model to indicate the ways in which food marketing affects a range of outcomes pertinent to diet and health. The model posits that there is a sequential (although recurrent and reinforcing) set of effects of food marketing exposure on intermediate outcomes (such as purchase and consumption) and, later, weight-related outcomes. Longer term outcomes can potentially be mediated by both the direct (brand awareness) and indirect (brand attitudes) effects of marketing⁽³⁸⁾. The validity of the model has been supported by analyses of cross-sectional data which have shown indirect associations between commercial television exposure and children's BMI via purchasing and with

consumption via purchase requests⁽³⁹⁾. Importantly, the model discredits the notion that there is a simple, direct link between exposure to food marketing and the development of obesity. However, subsequent studies have demonstrated that children's additional energy consumption following food marketing (relative to non-food marketing) is not compensated for at subsequent eating occasions and, as such, would logically contribute to weight gain over time⁽⁴⁰⁾. The evidence for a relationship between food marketing and obesity also meets established epidemiological criteria for causality⁽¹¹⁾.

Based on an effect size for the impact of food marketing on short-term food consumption in children⁽³⁰⁾, Brown *et al.*⁽⁴¹⁾ were able to demonstrate, through modelling, that introducing restrictions on unhealthy food advertising on television in Australia (a 21-30 h 'watershed') would reduce children's energy intake by an average of 115 kJ/d (approximately 115.06 kJ (27.5 kcal)) and BMI by approximately 0.35 kg/m² with greater benefits from the most disadvantaged children. Similarly, a 21-00 h watershed for unhealthy food advertising on television in the UK is predicted to decrease energy intake by an average of 38.07 kJ (9.1 kcal) daily which could reduce the number of UK children with overweight (including obesity) by 3.6 %⁽⁴²⁾.

Unique vulnerability of children

Children are thought to be particularly vulnerable to the effects of food marketing. This vulnerability stems from several different factors, outlined below.

First, young people live in a media-saturated environment of which most channels are commercial (i.e. carry marketing)⁽¹⁷⁾. Children are avid users of media, and rapidly uptake new media forms. In 2020, nearly all UK children (5–15 years) went online (mostly via laptops, tablets and mobile phones), 56 % watched live TV and almost all (96 %) watched TV programmes via video-on-demand services⁽⁴³⁾. In the UK, use of social media apps, video-sharing platforms and live streaming platforms is already established in many children aged 5–7 years and grows rapidly between the ages of 5 and 15 years⁽⁴³⁾.

Secondly, while using these media, children are heavily targeted by food marketers because they spend substantial amounts of their own money annually, influence the spending of even more via household food purchases and are adult consumers of the future⁽¹⁷⁾. Investment in marketing that reaches children is an investment in brand awareness, recognition, preference and loyalty which are all believed to precede or drive purchase behaviour⁽⁴⁴⁾.

Thirdly, children may be more readily deceived and exploited by food marketing based on their neurocognitive and developmental immaturity. Communications research in the 1970s focused on children's ability to recognise the selling and persuasive intent of marketing messages. That is, studies sought to understand the age at which children are able to recognise that the ultimate goal of advertising (from the perspective of the marketer)

is to achieve product sales, and that the marketing message may enhance positive characteristics or attributes of a product and withhold negative ones in order to be persuasive⁽⁴⁵⁾. This research posited that possessing such cognitive abilities would confer an ability to resist the marketing and be therefore inoculated from any harmful effects. However, this rationale has several limitations for understanding food marketing in the modern environment. Much of the evidence on advertisement recognition stems from research using television advertisements that can be far more readily distinguished from other television content (i.e. programming) even by young children than even simple digital marketing can⁽⁴⁶⁾. Social media influencer marketing further blurs the boundaries between food marketing and entertainment content⁽⁴⁷⁾ and exploits children's trust and the parasocial relationships they develop with online personalities⁽⁴⁸⁾. Also, it is increasingly clear that food marketing does not operate through conscious, rational arguments and persuasion but rather by subconscious routes and implying (exaggerated) emotional or social benefits from consumption⁽⁴⁹⁾. A more recent framework for understanding children's vulnerability, the food marketing defense model, incorporates the emotional component of marketing and dispels the idea that recognition and understanding alone are sufficient for protection, positing that cognitive resources and a motivation to resist are also required⁽⁴⁵⁾. This resistance would therefore be challenging for all children (including adolescents) given the levels of exposure and the use of powerful, salient and persuasive techniques they experience (outlined in the previous section), particularly at a time when their neurological development is incomplete (so they are vulnerable to 'risky' decisions) and they are seeking to establish their social identities and desiring conformity and acceptance from peers^(50,51).

Limiting children's screen time to reduce risk of harm to this vulnerable group may appear to be a pragmatic solution for concerned parents, but is it ethical to restrict children's access to the opportunities and benefits the internet offers? The internet offers unrivalled opportunities for learning, civic participation, creativity and communication⁽⁵²⁾ so facilitating children's access and engagement with this media could be considered essential for their growth and development in the digital era. However, there is a responsibility of States to ensure that this participation is possible without harming their health.

Child rights

High in fats, salt and/or sugar marketing affects numerous child rights enshrined within the UN CRC including the right to the enjoyment of the highest attainable standard of health, the right to adequate food and the right to privacy⁽⁵³⁾. The CRC recognises the unique sensitivities of children and that they have a need for special protection. Importantly, governments that ratify the convention (such as the UK) are legally bound to uphold the commitments enshrined in this international human



rights treaty. In addition, the UN Guiding Principles on Business and Human Rights assert that particular attention should be paid to the rights and needs of groups or populations that may be at elevated risk of becoming vulnerable or marginalised⁽⁵⁴⁾. Given their developing neuro-cognitive and social capacities (as described earlier), it is logical to interpret that children might be such a group⁽⁵³⁾.

The ways in which unhealthy food marketing negatively affects rights to health and food have been fully explored elsewhere^(13,20). In brief, Article 24 of the CRC⁽⁵³⁾ requires that ‘States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health’ and that they ‘take appropriate measures to diminish infant and child mortality [and] to combat disease and malnutrition, through, inter alia, the provision of adequate and nutritious foods’. In light of the substantial evidence linking unhealthy food marketing to poorer diet and health outcomes (summarised in a previous section of this paper), it can be argued that States, as part of their duty to respect, protect and fulfil children’s rights under the CRC, should restrict such marketing in order to reduce these negative impacts on children’s health⁽¹³⁾.

It has also been asserted that food marketing through digital media has substantially amplified the harms to children’s wellbeing and raised new issues of rights violations surrounding privacy and freedom from exploitation⁽⁵⁵⁾. Article 16 of the CRC⁽⁵³⁾ states that ‘no child shall be subjected to arbitrary or unlawful interference with his or her privacy’ and that ‘the child has the right to the protection of law against such interference’. Human rights apply online as offline, and therefore in the modern era this article can be understood to include a right to the protection of personal data⁽⁵⁵⁾. The digital advertising ecosystem is built on the extraction of personal data and the use of these data to deliver personalised and micro-targeted marketing^(20,55) that is highly effective and impactful^(20,56). Article 36 of the CRC⁽⁵³⁾ requires that States ‘protect children from ‘all other forms of exploitation’ (i.e. those not covered by other CRC articles). It has been argued that food marketing is inherently exploitative and manipulative⁽⁴⁵⁾ as it seeks to manipulate emotion and bypass rational decision-making⁽⁴⁹⁾. Digital food marketing, in particular, can be said to be exploitative of young people’s incredulity due to its use of highly salient creative content⁽¹⁰⁾, and the embedded, immersive and interactive ways in which the marketing is delivered⁽²⁰⁾ that often are ‘under the radar’ or beyond consumers’ awareness⁽⁵⁵⁾.

Because of the multiple ways in which food marketing and child rights intersect, it has been proposed that a ‘child rights-based’ approach to the regulation of unhealthy food marketing offers a powerful and universally applicable way to consider children as rights holders who are central to any policy discourse’ (p. 30)⁽⁵³⁾.

The ‘responsible’ food industry and the self-regulation of advertising

WHO and other leading health organisations⁽⁵⁷⁾ have long asserted that, based on the afore-mentioned

evidence of harm and of child rights violations, there is a clear need for robust and effective restriction of the unhealthy food marketing to which young people are exposed⁽⁵⁸⁾. The original ‘set of recommendations on the marketing of food and non-alcoholic beverages to children’ noted that States should ‘identify the most suitable policy approach’ (p. 14)⁽⁵⁸⁾. Evaluation of progress in implementing these recommendations noted that as of 2018, just 54% of the countries in the WHO European region had taken steps to limit the marketing of unhealthy foods and a majority of those steps reflected industry self-regulatory approaches⁽¹³⁾. Substantial evidence has accrued in recent years to demonstrate that mandatory or ‘government-led’ policies are more effective than industry self-regulation^(8,59,60). For example, in a recent global evidence review, mandatory policies (v. no policy) were associated with a greater proportion of desirable (for public health) than undesirable effects on exposure, power, purchasing and unintended consequences whereas the opposite was found for industry voluntary measures⁽⁸⁾. Even the enforcing agencies have sometimes identified the lack of effectiveness of these measures. Evaluations of the UK’s Advertising Standards Authority’s advertising code that covers online food advertising, conducted by the Advertising Standards Authority themselves using automated ‘avatars’ to trawl the web using data profiles mimicking children, identified 947 code breaches in 2 weeks on child-focused YouTube channels in 2018⁽⁶¹⁾ with further breaches found in a 2020 follow-up⁽⁶²⁾.

Industry-derived or co-regulatory codes often place emphasis on ensuring marketing communications are ‘legal, decent, honest and truthful’⁽⁶³⁾ or do not ‘mislead consumers’⁽⁶⁴⁾ suggesting a belief that it is possible for food marketing to children to be decent and to not mislead if it is constructed in a particular way. Related to this, an analysis of a public–private partnership launched in 2011 between the UK Government, industry and other organisations in the areas of food, alcohol, physical activity and health at work known as the ‘public health responsibility deal’ is illuminating in what it reflects about the integrity of industry commitment to meaningful change. The analysis by Knai *et al.* found that the most effective strategies to improve diet (including restrictions on marketing) were not reflected in the pledges made by the industries involved in the deal. Rather, most of the pledges were offers to provide information, raise awareness and communicate with consumers – actions that are known to have limited to no effect on positive behaviour change⁽⁶⁵⁾. It was noted that ‘both the production and uptake of pledges by Responsibility Deal partners were largely driven by the interests of partners themselves, enabling these wider [alcohol, food, etc] systems to resist change’ (p. 1)⁽⁶⁵⁾.

The underpinning reasons for the preference from food and advertising industries for self-regulation above mandatory policies are therefore apparent in terms of the likely (lack of) impact on business models and revenue. There are also additional benefits to being involved in such schemes including avoiding or delaying government intervention and reaping the reputational benefits of involvement⁽⁶⁶⁾.

Ethics of monitoring children's exposure to digital marketing for public health research

Monitoring children's exposure to digital marketing is challenging⁽²⁰⁾, but multiple methodologies have emerged in recent years^(14,67) that are beginning to yield hugely informative data on the extent and nature of this exposure^(68–70). There are also ethical considerations inherent in conducting this monitoring for the purposes of informing policy design. These have been discussed extensively elsewhere^(14,71) and are summarised briefly here.

Under the EU General Data Protection Regulations, participants have certain rights in relation to the processing of their personal data for research purposes that researchers should be aware of, including a right to be informed and notice requirements. Whether or not internet data should be considered public or private, and therefore the extent to which it is reasonable for a researcher to process it without users' consent or awareness, is a challenging and contentious issue⁽⁷¹⁾. For example, even if social media data are legally public according to the terms of the platform it relates to, users may have reasonable expectations of privacy that may reflect the settings they have applied to their account and the requirement for sign-in. Even if one user consents to research participation, there are also ethical issues inherent in the concurrent collection of data from others in their networks who did not consent⁽⁷¹⁾. Monitoring digital food marketing exposure may also yield data on sensitive topics, e.g. young people's engagement with content on eating disorders or alcohol. Further, it is possible that researchers could uncover evidence of criminal activity or other safeguarding concerns that may require them to breach confidentiality conditions by informing the relevant authorities. Security procedures in data processing (including storage, management and sharing) must be fundamental to digital monitoring involving children, as must the information participants (and their gatekeepers) are provided with, their understanding of that information (age-appropriate provision should be made) and the processes used to determine if they have a genuine willingness to participate that has been indicated free from coercion⁽⁷¹⁾.

Conclusions

This paper has explored the latest evidence on the intersection between ethics and food marketing to children and adolescents, and considered the implications for public health research, policy and practice. Ethical issues arise from the substantial evidence that food marketing has detrimental effects on children's dietary and overall health, that they are uniquely vulnerable to manipulation by food marketing and that they have relevant rights enshrined in the UN CRC that States have a duty to respect, protect and fulfil, including the right to health and freedom from exploitation. There is a strong case for young people (including adolescents) to be protected through implementation of robust, government-led policies to restrict their exposure to unhealthy food

marketing and its persuasive power. This is arguably a more ethical solution than requiring parents or other caregivers to limit screen time and therefore deny young people the opportunity to access information and participate in digital communications for their intellectual and social development. Researchers seeking to monitor children's exposure to digital food marketing must also ensure that ethical considerations are paramount to protect children and ensure the benefits of the research outweigh the harms.

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