HEALTHINESS ASSESSMENT IN THE UK OUT OF HOME SECTOR

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Action on Salt Action on Sugar

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About Us

Action on Salt and Action on Sugar is a registered charity dedicated to reducing dietary salt, sugar and calorie consumption to improve the health of populations in the UK and worldwide.

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EXECUTIVE SUMMARY

Background: Despite the growing influence of the out of home (OOH) food and drink sector on the population's diet, reporting on OOH product healthiness remains scarce and inconsistent. The aim of this project was to identify, and reach consensus on, the features that a model or metric should have to suitably assess the healthiness of OOH products, based on UK data.

Methods: A subset of healthiness assessment approaches was selected from government-endorsed nutrient profile models and metrics based on stakeholder consultations (via interviews, focus groups, and workshops). Each approach was used to classify the 10 best-selling menu items of 19 of the 20 largest OOH companies in the UK as either 'healthier' or 'less healthy'. Two workshops were carried out with non-governmental organisation representatives, experts, and key opinion leaders to inform the research and build consensus on a set of recommended features for OOH healthiness assessment.

Results: Based on stakeholder input, a composite score and various sets of absolute cut-offs for calories and/or nutrients of concern (e.g., total fat, saturated fat, total sugars, salt) were used either in isolation or combined one with another. The proportion of 'healthier' items across all best-sellers analysed (n=190) ranged from 22-54% depending on the approach used. In general, using the composite score on its own resulted in a more lenient assessment and thus a greater share of 'healthier' menu items. Using absolute cut-offs for calories and/or nutrients of concern consistently resulted in more stringent assessments and thus smaller proportions of menu items considered 'healthier'.

Discussion: Overall, according to most assessment approaches, the majority of the best-selling menu items in the UK OOH sector were deemed 'less healthy'. From this first exploratory work using UK data, we derived an initial set of features that we recommend for a robust approach to assessing product healthiness in the OOH sector in any country or region, namely: using absolute 'per serve' cut-offs for calories and nutrients of concern (e.g., saturated fat, total fat, total sugars, salt; potentially also free sugars), and accounting for the provision of 'beneficial' elements (e.g., fruits, vegetables, and nuts; potentially also fibre and protein content). We also issue recommendations intended to guide further work that is required to improve data availability and accessibility as well as healthiness reporting. There is an urgent need to incentivise OOH companies to offer, and/or shift their sales towards, healthier products.

BACKGROUND

Less healthy diets are among the leading risk factors for the global burden of disease, largely driven by their association with cardiovascular diseases, type 2 diabetes, and cancer (1).

The out of home (OOH) sector (defined here to include quick service restaurants, full-service restaurants, pubs & bars, and coffee & sandwich shops) is a rapidly expanding sector (2). OOH foods are generally sold in larger portion sizes than their retail equivalents and tend to have a less healthy nutrient profile, e.g. higher in calories, saturated fats, sugar, and/or salt (2).

Reporting on health and nutrition in the OOH sector is scarce and inconsistent, making it difficult to set standards for product healthiness in the sector and to independently monitor any progress made (3).

The aim of this project was to identify, and reach consensus on, an initial set of features that would make for a suitable approach to healthiness assessment in the OOH sector, using the UK as a case study.

METHODS

Overview of methodology

First, a shortlist of approaches to healthiness assessment was made from government-endorsed models and metrics, which had initially been identified via a scoping review and expert consultations. The shortlisting process was informed by interviews and focus groups with industry stakeholders and a workshop with non-industry stakeholders.

In the primary analysis ('bestsellers analysis'), each of the shortlisted approaches was used to classify the 10 best-selling menu items of the largest 20 OOH companies in the UK as either 'healthier' or 'less healthy'. The primary outcome was the proportion of 'healthier' items among each company's bestsellers.

In the secondary analysis ('full menu analysis'), the shortlisted approaches were applied to all menu items of a subsample of 3 OOH companies, selected for their greater data availability.

From the above findings and further stakeholder consultations, an initial set of features for a robust healthiness assessment in the OOH sector was identified. Non-governmental organisations (NGO) representatives, experts, and key opinion leaders were engaged with throughout the project via workshops to build consensus on the recommended features.

Further methodological details for each step can be found below.

Shortlisting of approaches to nutrient profiling

Nutrient profile models and metrics meeting the following inclusion criteria were identified in a scoping review: 1) developed or endorsed by a governmental or intergovernmental organisation, 2) allow for product-level assessment, and 3) have publicly available nutrition criteria.

Stakeholders of each of the following types were identified in a brainstorming session: OOH food industry, NGOs, governmental departments, academia, and key opinion leaders. Each potential stakeholder was ranked based on relevance, level of influence, and level of interest with regards to nutrient profiling in the UK OOH sector; those ranking highest within each category were invited for consultation first. Industry and non-industry stakeholders were consulted separately.

Industry stakeholders were consulted using 3 semi-structured interviews (with representatives from large companies: quick-service restaurant, full-service restaurant, and food delivery platform) to explore and better understand the general challenges in nutrient profiling for the OOH sector. Once a shortlist of nutrient profiling approaches was available, 2 focus group discussions were carried out with representatives from large companies (quick-service restaurants, full-service restaurants, coffee & sandwich shops, and a representative from a food delivery platform) to explore their perception of the selected approaches and potential implementation challenges, with regards to which approach would have the best chance of influencing meaningful changes in the OOH sector over the long term.

Non-industry stakeholders were consulted in a workshop, which centered on discussing the general strengths and weaknesses of different healthiness assessment methods, namely: composite scores vs cut-offs for calories and/or nutrients of concern (e.g., total fat, saturated fat, sugars, salt) vs classification based on food processing level.

Bestsellers analysis

The 10 best-selling menu items of the largest 20 OOH companies in the UK by revenue were identified via direct request (preferred method), delivery platform data analysis, or internet searches.

Nutrition data for each best-selling menu item were extracted from each company's website between September 2023 and March 2024. Missing data were obtained as follows: serving weights by weighing the purchased item with a calibrated scale, fibre content with a well-established UK food composition table (4), and the percentage of fruit, vegetable, and nut from direct weighing, ingredients lists (when available), or company website product pictures.

Full menu analysis

Three OOH companies were selected based on their more transparent provision of nutrition data per 100g (or provision of nutrition data per serve alongside serving weights, which allowed for the conversion to per 100g nutrition data).

Nutrition data for all their menu items was extracted between September and October 2023. For customisable menu items, only what was assumed to be the most commonly ordered version was included; for example, the inclusion criteria for coffee beverages available in different sizes and choice of milk were standardised across companies, so that only the nutrition information corresponding to a medium size beverage with semi-skimmed milk was extracted. To reflect 'real-world' conditions, no missing data were estimated or imputed in the full menu analysis, and as such only models that could be applied with the existing data were used.

Both the bestsellers and full menu analyses included both foods and drink, and all model outputs were dichotomised to obtain a binary 'healthier' vs 'less healthy' classification at the product level.

Recommended features for OOH healthiness assessment

Non-industry stakeholders invited to the first workshop were convened again for a second workshop. The second workshop centered on discussing how well each of the shortlisted approaches could address or mitigate the challenges identified in the first workshop.

From the analysis findings and stakeholder consultations, a set of recommended features for OOH healthiness assessment was derived.

RESULTS

Shortlisting of approaches to nutrient profiling

In the industry interviews, the interviewees (n=3) took the view that OOH consumption was an occasional 'treat', with customers perceived to already know what to order (thus limiting opportunities to influence choice). Nevertheless, some interviewees saw health as an opportunity for growth through more frequent visits or orders. Perceived challenges with healthiness assessment included the lack of standard definition for healthiness in the sector, the incoherence of a single item-level approach for a sector that sells meals or bundles, as well as the cost and expertise required to obtain nutrient composition information and applying any nutrient profiling model (especially for small to medium sized enterprises [SMEs]) and the need to justify these costs internally. Composite scores like the UK Nutrient Profile Model 2004/5 (UK NPM) were viewed favourably for their holistic assessment, but their lack of portion size consideration was seen as an issue for side or shared dishes. In general, nutrient profile models were seen as a one-size-fits-all approach bound to come with exceptions and anomalies.

Non-industry stakeholders (n=24) found composite scores (e.g., UK NPM) and cut-offs for calories and/or nutrients of concern more suitable than a classification based on food processing level, due to the perceived lack of academic consensus and conclusive evidence around processing level-based classification system such as NOVA (5), as well as concerns around health inequity implications and potential misinterpretation when using such a classification system. Perceived merits of composite scores included their alignment with a total diet approach; however, there were concerns about their complexity (especially for SMEs) and lack of portion size consideration. Cut-offs for calories and/or nutrients of concern were generally seen as more transparent, harder to 'game' (i.e., adding beneficial ingredients without removing nutrients of concern), able to account for portion size, and simpler, but represented a less holistic view of healthiness, as products low in fat, salt, and sugar do not necessarily confer nutritional benefits. More generally, participants found it important to use a model or metric that was developed based on local (in this case, UK) nutritional guidelines, as opposed to a model or metric based on another country or region's guidelines. There were also general concerns around the accuracy and reliability of OOH nutrition data, as well as about the outdated sugar-related criteria used in UK models & metrics. Gradient or continuous healthiness assessment outputs were generally perceived to encourage reformulation more than binary outputs.

Based on these initial consultations, the following models and metrics were shortlisted from a total of 90 candidate models:

- The UK Nutrient Profile Model 2004/5 (UK NPM) (6): a composite score where points are allocated based on the energy; saturated fat; total sugars; sodium; protein; % fruit, vegetable and nut; and fibre content in 100g of a food or drink. Products are deemed 'less healthy' or 'healthier' based on whether their overall score is above or below a given threshold (4 for foods, 1 for drinks).

- The Multiple Traffic Light Label (MTL) (7): a voluntary front-of-pack labelling scheme for pre-packaged foods and drinks in the UK. It provides a set of absolute cut-offs per 100g/ml of product and per portion (when a portion exceeds 100g for foods or 150ml for drinks) to colour code total fat, saturated fat, total sugars, and salt as 'green' (low amount), 'amber' (medium) or 'red' (high). One set of cut-offs applies to all foods, and another applies to all drinks. In the original form of the MTL, each nutrient is considered in isolation; in our analyses however, the MTL output was dichotomised so that any menu item with any nutrient colour coded as 'red' was deemed 'less healthy'.

- The UK voluntary targets/guidelines for sugar, salt and calories (8) and the Soft Drinks Industry Levy (SDIL) standard rate cut-off (9) (UK targets/guidelines/levy): the targets/guidelines are incrementally lower cut-offs set by the UK Government to reduce the amount of sugar, salt, and calories in the foods and drinks that contribute most to their intakes in children and adults. Though there are three types of targets/guidelines (maximum, simple average, and sales-weighted average), only the maximum targets/guidelines were used as our analyses were conducted at the product level. Targets/guidelines are set for either 100g/ml or a serving of product. The SDIL is a UK levy applied on sugar-sweetened beverages when their sugar content exceeds 5 g/100ml. In our analyses, any product exceeding any applicable sugar, salt, or calorie target/guidelines or subject to the SDIL was deemed 'less healthy'.

The shortlisted models were used in isolation or combined, as follows:

1. UK NPM
2. UK NPM and UK targets/guidelines/levy
3. UK NPM and MTL
4. MTL
5. MTL and UK targets/guidelines/levy

When two models/metrics were used together, a product was only considered 'healthier' if it was deemed so by both models; otherwise, it was considered 'less healthy'. The UK targets/guidelines/levy were not applied on their own as they apply to specific product categories and therefore would not necessarily cover the full range of products included in the analyses.

The ensuing two focus group discussions (with n=4 and n=6 industry representatives, respectively) suggested that the OOH industry in the UK is already familiar with the UK NPM, MTL, and UK targets/guidelines/levy, since reporting on health-related metrics is already taking place internally in most businesses. The more holistic nature of the UK NPM was viewed positively as it would enable businesses to showcase 'beneficial' nutrients such as fibre.

Though the 'occasional treat' narrative persisted, one participant noted that businesses have a responsibility for health as OOH consumption is becoming more frequent. The participants recognised the value of combining the UK NPM with an additional model/metric such as the UK targets/guidelines/levy, to help overcome the limitations of the UK NPM. They were also interested in sales-weighted reporting, a gradient or continuous output (to incentivise reformulation and showcase progress), and a bespoke approach for the different sub-sectors of the OOH industry. They also insisted on a level playing field, i.e. a mandatory approach that also applies to SMEs. Concern was raised around the amount of reporting required, the difficulties caused by customisation and seasonal menu items, and the use of ranking and 'naming and shaming', which was said to be demoralising and making it harder to convince internal stakeholders that talking about health is 'the right thing to do'.

Bestsellers analysis

The 20 OOH companies estimated to have the largest revenue in the UK were the following (listed in alphabetical order): Beefeater Grill, Brewers Fayre, Burger King, Caffe Nero, Costa, Domino's Pizza, Greggs, Harvester, KFC, McDonalds, Miller & Carter, Nando's, Papa John's, Pizza Express, Pizza Hut Restaurant, Pret A Manger, Starbucks Coffee, Subway, Toby Carvery and Wetherspoon.

Of the above 20 OOH companies, 10 (50%) did not provide either 'per 100g' nutrition information nor serving weights, 9 (45%) did not provide fibre content information, and 10 (50%) did not provide ingredients lists on their websites. Only 3 companies (15%) publicly disclosed all the nutrition information required to use the UK NPM (Appendix 1).

Fourteen companies (70%) provided the list of their top 10 best-selling menu items upon request. Bestsellers were approximated for the 6 remaining companies, using either delivery platform data or internet searches (Appendix 2).

Bestsellers in quick-service restaurants mainly consisted of pizzas, burgers, sandwiches, battered chicken, sides such as fries or bread with additions, and hot beverages. In full-service restaurants, they mainly consisted of pizzas, steaks, chicken, sides dishes, and cold beverages. In pubs and bars, they were mainly steaks, chicken (grilled or battered), battered fish, burgers, breakfast or brunch plates, and side dishes. In coffee & sandwich shops, bestsellers mainly consisted of hot beverages, sandwiches and pies (e.g., pasties, rolls).

One company was excluded from the analyses because the majority of its best-selling menu items were defined not as specific dishes, but as access to a buffet displaying a selection of dishes. We were unable to determine what dishes customers were most likely to select and in what quantities, and thus could not determine the nutrient composition of this company's best-selling menu items.

Overall, the proportion of 'healthier' items across the best-sellers of the remaining 19 companies (n=190 best-selling menu items) ranged from 22% to 54% depending on the approach to healthiness assessment used (Table 1).

Table 1. Bestsellers analyses: proportion of 'healthier' items, by healthiness assessment approach.
Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.

Shortlisted approaches	Percentage of 'healthier' items among bestsellers (n=190)
UK NPM	54%
UK NPM and UK targets/guidelines/levy	43%
UK NPM and MTL	22%
MTL	25%
MTL and UK targets/guidelines/levy	23%

The companies were then split into four sub-sectors: quick service restaurants, full-service restaurants, pubs & bars, and coffee & sandwich shops.

Figure 1 shows the proportion of menu items deemed 'healthier' according to each of the shortlisted approaches, by industry sub-sector.

Company-level results can be found in Appendix 2.

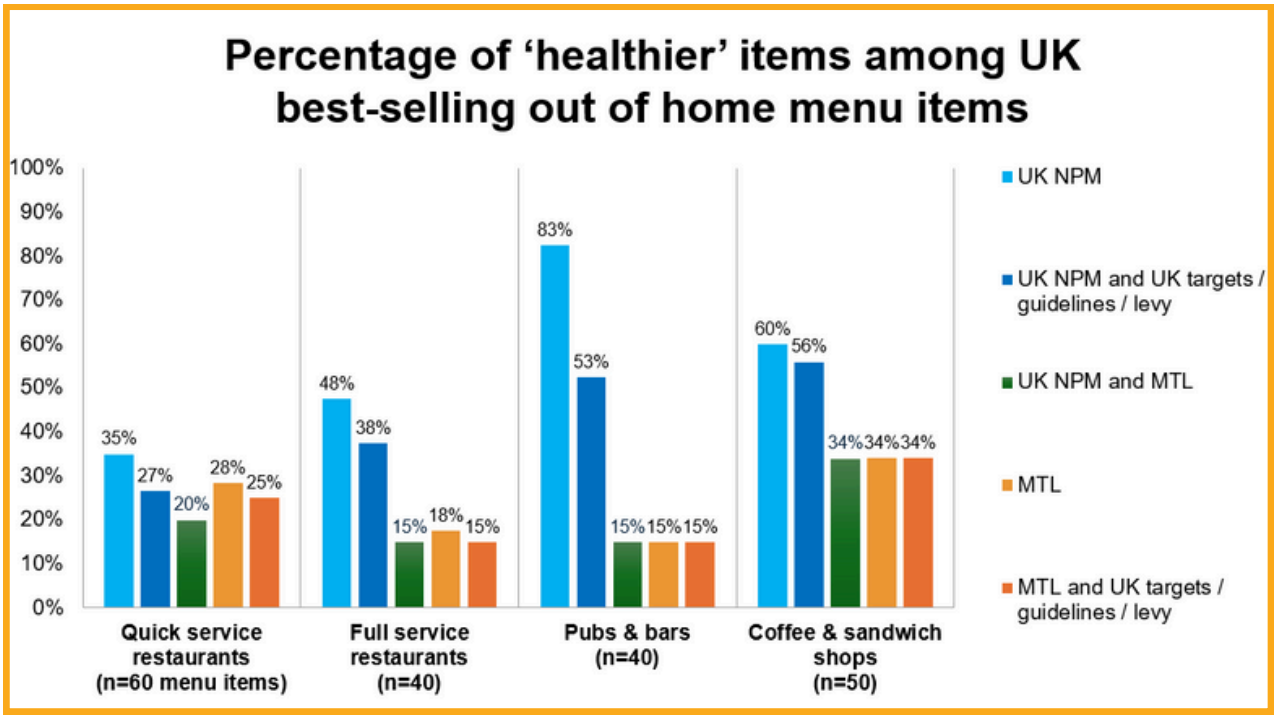

Figure 1. Bestsellers analysis: proportion of 'healthier' items, by healthiness assessment approach and by industry sector. *Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.*

In general, the UK NPM (when used on its own) classified more menu items as 'healthier' compared with the MTL (when used on its own). Combining the UK NPM with the UK targets/guidelines/levy brought the proportion of 'healthier' items down, but only to a limited extent in most sub-sectors; in contrast, combining the UK NPM with the MTL resulted in one of the most stringent approaches to healthiness assessment. Combining the MTL with the UK targets/guidelines/levy made little difference compared with an assessment based on the MTL only.

The gap between the assessment using UK NPM vs the MTL was widest in pubs & bars, where best-selling menu items were often served in larger portion sizes. Large portion sizes are better accounted for in the MTL (and the UK targets/guidelines/levy when they are set for a serve rather than for 100g/ml of product), but not in the UK NPM.

In contrast with the other sub-sectors, similar proportions of 'healthier' items were found for all approaches in quick service restaurants. This is likely to be due to the 'itemisation' prevalent in this sub-sector, whereby menu items consist of individual meal components that can be ordered separately. Itemisation leads to smaller serving sizes when each item is considered in isolation (as done in our analyses).

Worked examples of product healthiness assessment using each of the approaches are shown on page 12.

Full menu analysis

A total of 650 menu items were analysed (Table 2). Due to missing data on fibre content and/or ingredients list, it was not possible to use the UK NPM in the full menu analysis.

Combining the MTL with the UK targets/guidelines/levy resulted in lower proportions of items deemed 'healthier', though the difference made was not substantial.

A direct comparison between the bestsellers vs full menu analyses was not made due to the different types of products included in each analysis, making such a comparison difficult to interpret.

Table 2. Full menu analysis: proportion of 'healthier' items, by healthiness assessment approach and by company. Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.

Company	Number of unique menu items	Percentage of 'healthier' items in full menus				
		UK NPM	UK NPM and UK targets / guidelines / levy	UK NPM and MTL	MTL	MTL and UK targets / guidelines / levy
Costa	122	Insufficient data	Insufficient data	Insufficient data	33%	30%
Greggs	265	Insufficient data	Insufficient data	Insufficient data	45%	44%
Pizza Express	263	Insufficient data	Insufficient data	Insufficient data	23%	21%

Example 1: Costa's Latte. *Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.*

	UK NPM	UK NPM and UK targets / guidelines / levy	UK NPM and MTL	MTL	MTL and UK targets / guidelines / levy
Small (226ml)	Healthier	Healthier	Healthier	Healthier	Healthier
Medium (364ml)	Healthier	Healthier	Less healthy	Less healthy	Less healthy
Large (472ml)	Healthier	Healthier	Less healthy	Less healthy	Less healthy

Costa's Latte (made with semi-skimmed milk) is available in 3 sizes. All sizes would be deemed 'healthier' by the UK NPM, since its algorithm only considers nutrition information per 100g and is thus insensitive to changes in portion sizes.

In contrast, the MTL has a separate set of cut-offs for portion sizes greater than 100g (for foods) or 150ml (for drinks). In this case, the portion cut-offs for saturated fat and total sugars would be exceeded at larger sizes.

All sizes would also be deemed 'healthier' by the UK targets/guidelines/levy, where only a calorie content guideline would apply (there is no salt or sugar target/guideline for such a product). The maximum calorie content guideline for OOH milk-based drinks is 300 kcal per serve, which is not exceeded at any product size in this case.

Example 2: Nando's chicken-based menu items. *Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.*

	UK NPM	UK NPM and UK targets / guidelines / levy	UK NPM and MTL	MTL	MTL and UK targets / guidelines / levy
Nando's ½ Chicken (444g)	Healthier	Healthier	Less healthy	Less healthy	Less healthy
Nando's 10 Chicken Wings (467g)	Healthier	Less healthy	Less healthy	Less healthy	Less healthy

While both products would be deemed 'healthier' according to the UK NPM, they exceeded the MTL portion cut-offs for total fat and saturated fat (as well as salt for the 10 Chicken Wings).

Nando's ½ Chicken achieved both the applicable maximum salt target and calorie guideline, but the 10 Chicken Wings exceeded the applicable maximum salt target. No sugar guideline was applicable for these products.

Development of recommendations

To inform our recommendations for OOH healthiness assessment, non-industry stakeholders were reconvened in a workshop to discuss the following challenges:

- Complexity: concerns that a model or metric perceived as too complex may not be acceptable for the OOH industry
- Binary vs gradient output reporting: concerns that a binary outcome (e.g., healthier/less healthy, pass/fail) would not provide enough of an incentive for companies to make their products healthier
- 'Gameability': concerns that a model or metric can be gamed via the addition of 'beneficial' ingredients (rather than the removal of nutrients of concern)

Complexity was viewed as the greatest implementation challenge. Though it was hard to predict how complexity would be handled by different business types, in general, larger companies were perceived to possess sufficient internal resources to manage complexity (especially if already abiding by existing models or metrics).

With regards to binary vs gradient output reporting, a distinction was made between product- vs portfolio-level reporting. For example, a binary output at the product level (e.g., 'healthier'/'less healthy') could be required to obtain a gradient/continuous measure at the portfolio level (e.g., % 'healthier' items). No clear preference emerged for binary vs gradient output reporting at the product or portfolio level.

Participants challenged the framing of 'gameability' as an issue and the use of such a term (given its negative connotations), since 'gaming' a product to improve its nutrient profile would ultimately result in an improved product formulation.

There was a general preference for using established models or metrics that align with existing policies. Some participants also called for the reporting of detailed nutrition information for all menu items and the identification of the products driving most sales.

Given the wider issues uncovered in this work, we expanded the scope of our recommendations so as to cover not only the features recommended for a suitable healthiness assessment for the OOH, but also data availability and accessibility as well as healthiness reporting.

RECOMMENDATIONS

Based on stakeholder consultations and our analyses, we developed recommendations around the following three areas:

1. Improve nutrition data availability and accessibility
2. Develop a standardised measure of healthiness that takes into account portion size
3. Implement mandatory reporting programmes

This section details the recommendations formulated for each area.

1. Nutrition Data Availability

Issue: This research explored the availability and accessibility to nutrition information by the OOH sector. There was a lack of consistent and standardised display of nutrition information on menus, online, on pack and at point of sale across the out of home sector (Appendix Table 1).
Recommendation 1.1: More progressive companies, that care about their customers' health, should agree amongst themselves on a standardised way to display nutrition information on menus, online, on pack and at point-of-sale material until government requirements are established.
Recommendation 1.2: Governments should set a standardised requirement for the display of nutrition information on menus, online, on pack and at point of sale for the OOH sector.

- The minimum nutrition information companies must be required to disclose should include content of calories and nutrients of concern (e.g. fat, saturated fat, salt and sugar) per serve alongside serving weight, as is required for the front of pack Multiple Traffic Light Label (7).
- The ideal nutrition information companies should be required to disclose to allow for assessment against more complex nutrient profile models should include the mandatory requirements on the back of pack in the EU Food Information for Consumers regulation (10) alongside fibre content and percentage of fruits, vegetables and nuts and any other information needed to use the healthiness assessment method of choice.

2. Healthiness assessment

In setting up a metric to assess healthiness of products sold by the OOH sector, a set of features should be considered to address or mitigate key issues identified. The features are listed hierarchically in Table 3 and explained further below.

Table 3. Matrix of recommended features for healthiness assessment in the OOH sector, by order of importance (most important feature at the top). *Abbreviations: OOH = out of home.*

Issues to be addressed	Recommended features	
	Should have	Could have
Large portion sizes and excess consumption of calories	Absolute cut-off for calorie content per serve *e.g., UK maximum calorie guidelines for the OOH sector*	
Large portion sizes and excess consumption of nutrients of concern	Absolute cut-offs for the content of nutrients of concern per serve, such as saturated fat, total fat, total sugars, and salt *e.g. portion cut-offs in UK Multiple Traffic Light Labelling*	Absolute cut-off for free sugars content per serve
Perceived lack of holistic assessment	Measure for 'beneficial' elements such as fruit, vegetable, and nut content	Measure for fibre content (per 100g and/or per serve)
		Measure for protein content (per 100g and/or per serve)

Issue: Portion sizes tend to be larger in the OOH sector, yet composite scores such as the UK NPM do not account for excess calories in large portions.
Recommendation 2.1: Set and enforce absolute cut-offs for calorie content per serve, specific to different categories of foods and drinks.

Issue: Larger portion sizes result in excess consumption of nutrients of concern, yet composite scores such as the UK NPM do not account for portion size.
Recommendation 2.2: Set and enforce absolute cut-offs for saturated fat, total fat, total sugars, and salt per serve. Absolute cut-offs for free sugars per serve (based on national or World Health Organization guidelines for free sugars (11)) would bring further alignment with current public health goals.

Issue: Perception that product healthiness is not merely the absence of nutrients of concern, but also the provision of 'beneficial' nutrients that convey health benefits.
Recommendation 2.3: Include a measure for 'beneficial' elements such as content in fruits, vegetables, and nuts. Capturing fibre and protein content may make for an even more holistic assessment.

Further considerations: The use of models or metrics developed by governments or intergovernmental organisations is recommended. Combining multiple models or metrics may be necessary to ensure the presence of all recommended features. Any adjustment or combining of existing models or metrics should be carefully considered and reported transparently to maintain credibility and alignment with public health goals.

Of the five approaches used in our analyses, the approach where the UK NPM is used in conjunction with the UK targets/guidelines/levy would be the one that includes most recommended features. At the time of writing, none of the approaches in their current form considered free sugars content. In the UK, the inclusion of free sugars was considered as part of the 2018 consultation to update the UK NPM (12); however, as of August 2024, the UK NPM has not yet been revised.

Table 4. Evaluation of nutrient profile models against the recommended features for healthiness assessment in the OOH sector. *Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off.*

	UK NPM	UK NPM and UK targets / guidelines / levy	UK NPM and MTL	MTL	MTL and UK targets / guidelines / levy
Absolute cut-off for calorie content per serve		✓			✓
Absolute cut-offs for the content of nutrients of concern per serve, such as saturated fat, total fat, total sugars, and salt		✓	✓	✓	✓
Absolute cut-off for free sugars content per serve					
Measure for 'beneficial' elements such as fruit, vegetable, and nut content	✓	✓	✓		
Measure for fibre content (per 100g and/or per serve)	✓	✓	✓		
Measure for protein content (per 100g and/or per serve)	✓	✓	✓		

3. Healthiness Reporting

Issue: Lack of consistent and transparent reporting on the healthiness of OOH company best-selling products and portfolios.
Recommendation 3.1: Companies should be transparent about the healthiness of their portfolio by sharing the proportion of healthier products sales in their portfolio and among their best-sellers. This can provide valuable insights into consumer preferences, trends and healthiness of company portfolios to stakeholders.
Recommendation 3.2: Governments and regulatory bodies should require OOH companies to report in a standardised way the healthiness of their portfolios via a mandatory food data reporting programme (such as the Food Data Transparency Partnership in the UK, which is still under consultation at the time of writing).

DISCUSSION

Summary of findings and recommendations

In this first exploratory work, we compared the performance of different approaches to healthiness assessment for the OOH sector, using data collected from the largest OOH companies operating in the UK.

Different healthiness assessment approaches resulted in widely different results. This was mostly due to how well a model or metric could account for portion sizes (e.g., composite scores such as the UK NPM typically do not account for portion sizes, whereas absolute 'per serve' cut-offs for calories and nutrients of concern would), and the lack of standardisation of the unit of analysis (i.e., assessment at menu item vs meal level).

From our analyses and from stakeholder consultations, we derived an initial set of features that we recommend for a robust healthiness assessment for the OOH sector, namely: using absolute 'per serve' cut-offs for the content of calories and nutrients of concern (e.g., saturated fat, total fat, total sugars, salt; potentially also free sugars), and accounting for the provision of 'beneficial' elements (e.g., fruits, vegetables, and nuts; potentially also fibre and protein content).

Absolute 'per serve' cut-offs would serve the dual purpose of helping to prevent the promotion of products containing excessive amounts of calorie or nutrients of concern as 'healthy', and to incentivise reformulation efforts by companies.

Whether to include a measure for protein needs balanced consideration of local needs (e.g., protein intake may need to be encouraged in some low- and middle-income settings) and wider environmental implications. It is noteworthy that in the case of the UK NPM, protein was originally included as a proxy for iron, calcium, and omega-3 fatty acids content, rather than as a 'beneficial' nutrient per se (12).

Implementation considerations

Our recommendations aim to guide the development of a comprehensive and evidence-based approach to assessing the healthiness of food and drink in the OOH sector. The matrix presentation provides a structured framework for an approach to healthiness assessment that is simple yet holistic, and that incentivises progress in improving product offering.

As it is unlikely that a single model or metric includes all the recommended features on its own, we would encourage exploring the combination of multiple models/metrics, as we have done in this work.
For our recommendations to be implementable, there is also a need for data availability and reporting; we also issue recommendations for both areas.

It is likely that most large OOH companies already possess the financial resources and expertise to implement most of our recommendations, as the large company representatives who took part in our focus groups discussions revealed that reporting on health-related metrics are already taking place internally.

Industry stakeholders also called for levelling the playing field with mandatory measures. As part of the development process towards mandated healthiness reporting for the OOH, our recommendations could be tested in large companies first. Further work would be needed to assess how these could then be extended to SMEs.

Avenues for future work

Further work is needed in the following areas:

- Data availability: serving weight, fibre content, and ingredients list information were in most cases not publicly disclosed, yet they are required for any model or metric based on 'per 100g' information and for a more holistic assessment of healthiness. While we were able to manually estimate missing data in this project, this was resource-intensive and would not be scalable. Our recommendations around nutrition data availability are intended to guide the work required to improve nutrition declaration in the OOH sector.

- Data accuracy: there may be heterogeneity in the methods used to determine nutritional composition between companies, and it is likely that the nutritional composition of the same menu item varies more in companies where food production is less centralised or standardised. Further research is needed to assess the accuracy of nutrition data in the sector, accounting for product customisation and fast-changing menus (e.g., seasonal or limited-edition items).

- Definition of a 'meal': this issue is two-fold. First is the inconsistency of what constitutes a menu item: in some companies, menu items consisted of multi-component meals (e.g., full English breakfast), whereas in others they consisted of single-component items that are likely to be combined with other items (e.g., French fries). Second is the suggested portion sizes, which are often unrealistic; for example, different companies suggest that similarly sized pizzas serve different numbers of people. Should absolute cut-offs for calories and nutrients be implemented, it is likely that companies would

use itemisation and/or smaller suggested serving sizes to 'pass' healthiness assessments. Further work is needed to explore ways to define and standardise what is likely to be consumed on a single occasion, and any implications this may have for healthiness assessment and reporting.

- Best-sellers identification: our analyses focussed on the best-selling menu items as they are by definition the most consumed items, so that any improvement in their healthiness would achieve a greater impact. In the absence of sales data linkage, we have mostly relied on confidential company self-reporting. Further work is needed to standardise the way best-selling menu items are defined and identified.

- Food processing levels: our analyses did not include any classification system based on food processing levels (e.g., NOVA classification) as stakeholders did not perceive this approach to be suitable for healthiness assessment in the OOH sector. Further research is needed to consider the inclusion of a marker for processing levels to provide deeper insights into the overall healthiness of food and drink products.

- Extension to SMEs: large companies may generally be subjected to more governmental measures than SMEs (e.g. mandatory calorie labelling in the UK); however, industry stakeholders found it important to level the playing field with a mandatory approach that would include SMEs. Further work would be required to assess the feasibility and cost-effectiveness of extending our recommendations to SMEs relative to their market share and thus potential impact on population health.

- Unintended consequences: it is possible that any given approach chosen to assess healthiness may incentivise companies to change their product formulation, price, and/or marketing strategy in a way that could produce unintended consequences. Further research is needed to identify what these consequences could be, who would most likely be most affected by them, and determine whether the potential benefits of implementing a given approach to healthiness assessment would outweigh the risk of unintended consequences at the population level.

Conclusion

Given the growing influence of the OOH sector on people's diets worldwide, there is an urgent need to develop and enforce policy measures to incentivise OOH companies to offer, and/or shift their sales towards, healthier products. However little research exists to inform the development of such initiatives. Using data from the foods and drinks dominating the UK OOH market, we have conducted exploratory analyses and consulted industry and non-industry stakeholders to identify features that a suitable approach healthiness assessment should have.

As a result of this work, we issue three initial sets of recommendations for nutrition data availability, healthiness assessment, and healthiness reporting. Our recommendations are intended for international use to guide policy development worldwide to improve OOH food environments.

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APPENDICES

Appendix 1. Availability of nutrition data relevant to healthiness assessment models and metrics, by company. *A tick indicates the presence of information on the company website or online PDF menus as of March 2024. We assessed the availability of nutrition information pertinent to product healthiness assessment models and metrics, encompassing data that generally exceeds the legal requirements for OOH companies.*

Company	Serving weight	Ingredients list	Content per 100 g/ml						Fibre content (per 100g/ml or per serve)	Added sugar content (per 100g/ml or per serve)
			Energy	Total fat	Saturated fat	Total sugars	Protein	Salt		
Beefeater Grill										
Brewers Fayre										
Burger King			✓	✓	✓	✓	✓	✓		
Caffe Nero	✓*	✓*	✓	✓	✓	✓	✓	✓	✓	
Costa	✓	✓*	✓	✓	✓	✓	✓	✓		
Domino's Pizza		✓	✓	✓	✓	✓	✓	✓	✓	
Greggs	✓		✓	✓	✓	✓	✓	✓	✓	
Harvester										
KFC		✓								
McDonalds		✓							✓	
Miller & Carter										
Nando's									✓	
Papa John's	✓		✓	✓	✓	✓	✓	✓	✓	
Pizza Express		✓	✓	✓	✓	✓	✓	✓	✓	
Pizza Hut Restaurant	✓	✓								
Pret A Manger		✓	✓	✓	✓	✓	✓	✓	✓	
Starbucks Coffee		✓							✓	
Subway	✓								✓	
Toby Carvery										
Wetherspoon		✓							✓	

**Found for foods only and not for drinks.*

Appendix 2. Bestsellers analysis: proportion of 'healthier' items, by healthiness assessment approach and by company. *Abbreviations: MTL = Multiple Traffic Light Label; UK NPM = UK Nutrient Profile Model 2004/5; UK targets/guidelines/levy = UK Government-set sugar, salt, calorie reduction targets/guidelines & Soft Drinks Industry Levy standard rate cut-off*

Company	Sub-sector	Number of best-selling items	Bestsellers identification method	Percentage of 'healthier' items among bestsellers				
				UK NPM	UK NPM and UK targets/ guidelines / levy	MTL	MTL and UK targets/ guidelines/ levy	UK NPM and MTL
Beefeater Grill	Pubs & bars	10	Self-report	90%	50%	10%	10%	10%
Brewers Fayre	Pubs & bars	10	Self-report	80%	70%	10%	10%	10%
Burger King	Quick service restaurants	10	Delivery platform data	30%	20%	10%	10%	10%
Caffe Nero	Coffee & sandwich shops	10	Delivery platform data	50%	50%	30%	30%	30%
Costa	Coffee & sandwich shops	10	Self-report	90%	90%	60%	60%	60%
Domino's Pizza	Quick service restaurants	10	Self-report	20%	0%	30%	10%	10%
Greggs	Coffee & sandwich shops	10	Self-report	30%	30%	30%	30%	30%
Harvester	Pubs & bars	10	Self-report	90%	50%	30%	30%	30%
KFC	Quick service restaurants	10	Delivery platform data	40%	40%	50%	50%	30%
McDonalds	Quick service restaurants	10	Self-report	50%	50%	50%	50%	40%
Miller & Carter	Full-service restaurants	10	Self-report	60%	50%	20%	20%	20%
Nando's	Full-service restaurants	10	Internet searches	60%	40%	20%	20%	20%
Papa John's	Quick service restaurants	10	Delivery platform data	0%	0%	0%	0%	0%
Pizza Express	Full-service restaurants	10	Self-report	20%	20%	30%	20%	20%
Pizza Hut Restaurant	Full-service restaurants	10	Self-report	50%	40%	0%	0%	0%
Pret A Manger	Quick service restaurants	10	Self-report	70%	50%	30%	30%	30%
Starbucks Coffee	Coffee & sandwich shops	10	Delivery platform data	30%	30%	20%	20%	20%
Subway	Coffee & sandwich shops	10	Self-report	100%	90%	30%	30%	30%
Toby Carvery*	Pubs & bars	0	Self-report	N/A	N/A	N/A	N/A	N/A
Wetherspoon	Pubs & bars	10	Self-report	70%	40%	10%	10%	10%

**Toby Carvery was excluded from the analyses as most of its sales consisted of buffet-style consumption.*

Action on Salt Action on Sugar