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ORIGINAL ARTICLE

Benchmarking the commitments related to population nutrition and obesity prevention of major food companies in New Zealand

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Abstract

Objectives To benchmark comprehensiveness, specificity and transparency of the nutrition-related commitments of major food companies in New Zealand.

Methods We applied the Business Impact Assessment on Obesity and Population Level Nutrition (BIA-Obesity). The largest 25 New Zealand companies in each of the packaged food (n = 15), non-alcoholic beverage (n = 2), supermarket (n = 2) and quick-service restaurant (n = 6) sectors were selected. Publicly available information on commitments was collected through an online search. Representatives from each company were asked to review and/or supplement the information collected. Commitments were then assessed, and recommendations made at the company and sector levels.

Results Overall scores ranged from 0 to 75% across all companies with a median score of 38%. The best-performing domain was 'corporate nutrition strategy' (median score = 55%), and the worst-performing domain was 'product accessibility' (median score = 0%). Twelve out of 25 companies fully engaged with the process.

Conclusions The comprehensiveness, specificity and transparency of company commitments varied but were low overall. In the absence of strong industry commitments, government regulations, such as restrictions on unhealthy food marketing, are urgently needed. Future assessments should incorporate performance measures.

Keywords Food company · Accountability · Population nutrition · Commercial determinants of health · Obesity · Policy

Introduction

The increase in obesity and diet-related non-communicable diseases (NCDs) can be attributed to increasingly unhealthy food environments (Swinburn et al. 2011). A major contributor to unhealthy food environments is the food industry, which has been recognized for its role as a corporate disease vector of the NCD epidemic through the formulation, marketing and sales of unhealthy foods (Moodie et al. 2013).

Awareness of the need to hold the food industry accountable for their actions to improve population nutrition has been increasing (World Health Organization 2016). For example, the Access to Nutrition Index (ATNI) assessed and ranked the top 25 global food and beverage manufacturers on their 'nutrition-related commitments, performance and disclosure' in 2013, 2016 and 2018 (Access to Nutrition Index 2013b, 2016a, 2018a). The latest index identified significant room for improvement, noting an average score of 3.3 out of 10 across all companies in 2018, but also noted that some companies had improved their scores since 2016, in particular in relation to quality of reporting and investments in healthy products (Access to Nutrition Index 2018a). The ATNI, like previous monitoring initiatives (Lang et al. 2006), also noted the benefit of country-level analysis, and this has subsequently been undertaken in India (Access to Nutrition Index 2016b) and the USA (Access to Nutrition Index 2018b). Importantly, ATNI's approach includes strong engagement with investors to accelerate changes in corporate behaviours. To

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date, more than 40 investment firms, collectively managing over USD 3 trillion in assets, have signed the ATNI Investor Statement (Access to Nutrition Index 2013a).

The ATNI analysis, however, is relatively resource intensive. In addition, it does not include quick-service restaurants and supermarkets in its assessment (Sacks and Vandevijvere 2016). Therefore, the International Network for Food and Obesity/NCDs Research Monitoring and Action Support (INFORMAS) (Swinburn et al. 2013) developed the BIA-Obesity (Business Impact Assessment on Obesity and Population Level Nutrition) to assess companies' nutrition-related policies and commitments, disclosure and performance at a country level (Sacks et al. 2013; Sacks and Vanderlee 2017). Unlike ATNI, the BIA-Obesity excludes commitments related to undernutrition and breast milk substitutes and includes separate indicators for supermarkets and quick-service restaurants. The BIA-Obesity includes two phases: phase 1 (evaluation of commitments and disclosure) and phase 2 (evaluation of performance).

In the Pacific region, a previous assessment of publicly available food company policies on food marketing and (re)formulation showed that in Australia and New Zealand, a higher proportion of companies had such commitments compared to Fiji. Existing policies on food marketing to children generally focused on those aged less than 12 years, did not apply to all types of media, and did not provide transparency with respect to the products to which the policies apply. Existing (re)formulation policies mostly focused on salt reduction only (Sacks et al. 2015). A more recent study from Thailand found similar results. While 58% of food companies had some nutrition-related policies in place, most of those commitments were not sufficiently specific and comprehensive (Cetthakrikul et al. 2019).

The aim of this study was to implement phase 1 of the BIA-Obesity and, for the first time, quantitatively assess and benchmark the comprehensiveness, specificity and transparency of the commitments related to nutrition and obesity prevention of food companies in New Zealand. It is anticipated that such an assessment, regularly conducted, may stimulate improvements in the healthiness of New Zealand food environments.

Methods

The BIA-Obesity includes six domains, each of which contains a range of good practice indicators (Sacks and Vanderlee 2017).

The 'corporate strategy' domain (STRAT) assesses each company's strategic commitment to nutrition as part of the company's overall strategy, including the development of specific objectives/targets on obesity and NCDs, and their reporting practices.

The 'product formulation' domain (FORM) aims to improve voluntary industry actions on reformulation, in line with WHO recommendations (World Health Organization 2013). The 'product labelling' domain (LABEL) assesses the extent of implementation of voluntary government-endorsed front-of-pack labelling systems, health and nutrition claims and menu labelling (the latter relating to quick-service restaurants only). Such labelling has been shown to influence food choices (Feunekes et al. 2008) and drive reformulation (Mhurchu et al. 2017; Vyth et al. 2010).

The 'product and brand promotion' domain (PROMO) assesses company policies on marketing to children in both broadcast and non-broadcast media, in line with WHO recommendations to reduce the power and exposure of unhealthy food marketing to children (World Health Organization 2010). Unhealthy food marketing has been shown to affect children's food preferences (Cairns et al. 2013; Boyland et al. 2016). For supermarkets, the domain also includes indicators related to product promotion in catalogues, and the in-store food environment. The 'product accessibility' domain (ACCESS) encompasses food pricing, distribution and availability of healthy versus unhealthy foods. Food price is an important determinant of consumer food choices (French 2003), and food availability has been shown to contribute to the socioeconomic gradient of obesity (Pearce et al. 2007; Vandevijvere et al. 2016).

Finally, the 'relationships with other organizations' domain (RELAT) aims to assess the transparency of a company's corporate political activity, particularly around information and messaging, and constituency building (Mialon et al. 2015). This includes transparency on political donations, research funding and funding and support of nutrition and physical activity programmes.

Selection of companies

Food companies with a combined market share of $> 50\%$ in each of four sectors (packaged food manufacturers, non-alcoholic beverage manufacturers, quick-service restaurants and supermarkets) were selected using the 2016 Euromonitor International market share data for New Zealand (Table 1).

The final selection included 15 packaged food companies with a combined market share of 57.6%, 2 non-alcoholic beverage companies with market shares of 46.7% and 29.7% each, two supermarkets with a combined market share of 71.5% and 6 quick-service restaurants with a combined market share of 51.3%. Importantly, within the BIA-Obesity, supermarkets are scored for both their role as

Table 1 Market share of companies included in the study by sector (packaged food, non-alcoholic beverages, supermarkets and quick-service restaurants), New Zealand, Euromonitor, 2016

Company	Market share (2016) (%)
Packaged food manufacturers	
Fonterra	13.2
Goodman Fielder	12.7
Heinz Wattie's	5.3
Mondelez	4.1
Griffin's Foods	3.1
Unilever	3.1
Nestlé	2.8
Arnotts	2.3
George Weston Foods	2.0
Bluebird Foods	1.9
Heller Tasty	1.8
Sanitarium	1.6
Mars	1.6
Kellogg	1.1
McCain foods	1.0
Non-alcoholic beverages manufacturers	
Coca-Cola	46.7
Frucor Beverages	29.7
Supermarkets	
Foodstuffs	42.2
Countdown	29.3
Quick-service restaurants	
McDonald's	15.7
Restaurant Brands	13.8
Subway	9.0
Burger King	6.7
Domino's	3.4
Pita Pit	2.7

a food manufacturer and their role as a retailer. In some cases, the particular corporate entities selected were adjusted to the country context, to account for the level at which company policy decisions are made and reported (e.g. Progressive Enterprises were evaluated as Countdown).

BIA-Obesity process

The first step in the BIA-Obesity process was to adapt the global methods to the New Zealand context (Sacks and Vanderlee 2017). This involved modifying indicators to suit the regulatory context in New Zealand (e.g. voluntary adoption of the Health Star Rating nutrition labelling system), excluding the indicators that were not applicable because of existing mandatory government regulation (i.e. regulation on health claims that makes voluntary commitments in this area unnecessary), and capturing and incorporating the relevant industry pledges in New Zealand (Healthy Kids Industry Pledge and the Advertising Standards Authority Children and Young People's Advertising Code) (Sacks and Vanderlee 2017).

Publicly available information related to the policies and commitments of selected companies was collected between March and December 2017. This included company websites (national and global), brand websites, company reports (e.g. corporate responsibility reports), industry association websites, government websites, media articles and policy documents. Web pages and online documents were saved using the full-page screenshot Chrome extension, and the relevant information on commitments copied into an Excel spreadsheet for each BIA-Obesity indicator. This information was then used to pre-populate a survey that could be sent to company representatives for review.

A company representative (i.e. Nutrition Manager, Principle Scientist, Corporate Affairs Manager, Sustainable Business Manager or Head of Communications) within each of the 25 selected companies was found through Internet searches and contacted. The contact details of several company representatives were acquired through the Food and Nutrition Manager at the New Zealand Heart Foundation who had previous engagement with the food industry. Some contacts were Australia based, but responsible for trans-Tasman operations that included New Zealand. In some cases, a representative was not found which resulted in an introductory email being sent to a generic customer service email instead.

Introductory emails were sent to these representatives, containing a rationale for the project, a project summary and an invitation to discuss further details with the research team. Companies who were willing to engage were sent a participant information sheet and consent form. The pre-filled BIA-Obesity surveys were then sent to companies for review and/or supplementation with non-public information.

For any supplementary information to be included, company representatives needed to provide clear supporting evidence to the research team. In addition, companies were given the opportunity to sign non-disclosure agreements if desired.

Scoring was completed in Microsoft Excel by AK. Table 2 provides illustrative examples of commitments collected and how they were scored according to the BIA-Obesity. Domain weightings can be found in Online Resource A. The full methods and scoring document can be accessed online (Sacks and Vanderlee 2017). Scores were combined across domains to derive an overall score out of 100.

Table 2 Examples of publicly available commitments and their scoring according to the Business Impact Assessment on Obesity and Population Level Nutrition (BIA-Obesity), New Zealand, 2017

Domain	Indicator	Example commitment	Scoring criteria	Score
STRAT	Does the company have an overarching commitment to improving population nutrition and health articulated in strategic documents (e.g. mission statement, strategies or overarching policies)?	"According to the World Health Organization (WHO), worldwide obesity has more than doubled since 1980. At the same time, hunger and malnutrition remain two of the world's most serious health problems. And with the world's population expected to surge to 9.7 billion by 2050, according to the United Nations, the private food industry will need to make nutritious food available in greater quantities and at affordable prices"	10: Yes, a national-level commitment, publicly available 7.5: Yes, a global-level commitment, publicly available 5: Yes, a national- or global-level commitment, but not publicly available 0: No clear commitments to improving population nutrition and health	10
FORM	Has the company set a target/targets or taken significant action to reduce/reach lower levels of salt/sodium in products?	"Reduce our use of salt, sugar and fat without compromising quality and taste"	10: Set SMART targets in all key categories/subcategories, published 5: Targets (not necessarily SMART) set or significant action taken in some key products/subcategories/not published 2.5: General commitment to reducing levels of salt/sodium in products (published or disclosed to INFORMAS team) 0: No target	2.5
LABEL	Does the company have a published commitment to rolling out the government-endorsed Health Star Rating System?	"At the end of June 2016, we had rolled out the Health Star Rating on 394 products. This roll-out will be completed within the Government's five-year timeframe, by December 2018. We report the roll-out of Health Star Rating every quarter to MPI. We will report our annual progress in our CSR report"	10: Yes, with implementation plan across all product categories (published or unpublished) 7.5: Yes, with implementation plan across a selection of product categories (published or unpublished) 5: Yes, but with no specific implementation plan (published or unpublished) 0: No	10
PROMO	Does the company commit to only advertise or display 'healthy' sides and 'healthy' drinks in children's combination meals in restaurants (for example, on menus and menu boards or in advertisements in restaurants)?	"For around 10 years we have only shown the healthier choices (Grilled Chicken Snack Wrap, water and apple slices) in our Happy Meal advertising"	10: Yes, commits to only advertising both healthy sides and healthy drinks for children's meals or does not advertise children's meals 5: Yes, commits to only advertising either healthy sides or health drinks 0: No/no information available	10
ACCESS	Does the company's policy position support WHO's position on fiscal policies to make healthier foods relatively cheaper and unhealthy foods relatively more expensive?	"It's our view you can't tax or regulate your way to a healthy lifestyle. Kiwis should have the right to decide what the best drink choice is for them and their families and the evidence shows the majority of people are already doing just this"	10: Strong support for taxes on unhealthy foods, broadly defined 0: No details available − 10: Strongly opposed (e.g. opposes all measures in this area)	− 10
ACCESS	Does the company make a clear and specific commitment to decrease the availability of unhealthy products in specific settings?	"We do not directly supply any school in New Zealand with full sugar carbonated beverages or energy drinks"	10: Yes, published and clear commitment over a range of key settings (including remote communities, schools, hospitals and community events) 7.5: Yes, not published and clear commitment over a range of key settings (including remote communities, schools, hospitals and community events) 5: Clear commitment for some specific settings (e.g. schools, remote communities, community events or hospitals) 2.5: Some commitment applicable to some specific settings (e.g. schools, remote communities, hospitals, community events) 0: No commitment/no information	5

Table 2 (continued)

Domain	Indicator	Example commitment	Scoring criteria	Score
RELAT	Does the company publish its membership/support for/ownership of industry associations, think tanks, interest groups, community organizations or other organizations that lobby in relation to population nutrition and/or obesity and NCD issues?	"Countdown is a member of Business NEW ZEALAND, Retail NEW ZEALAND, the Committee for Auckland, the Packaging Forum, the NEW ZEALAND Business & Parliament Trust, the Nutrition Foundation, and Business and Community Shares (BACS). We also have regular dialogue and engagement with many other industry organisations on issues of mutual interest, like Federated Farmers, Horticulture New Zealand and Consumer NEW ZEALAND"	10: Yes, information on national-level activity is publicly available OR active declaration/policy stating no activity in this area (either publicly available or disclosed to INFORMAS team) 5: Yes, information is available, but is not consolidated and easy to locate OR information is available at the global level only OR comprehensive information about their activities in the area provided to the project team 0: No information available/provided n/a: No activity in this area (subtract 10 from overall possible score for this section)	10

Companies were twice sent individualized scorecards for review (final versions in Online Resource B) and were also invited to an online seminar in November 2017, which presented key findings and provided the opportunity for in-person feedback. For companies that did not engage with the BIA-Obesity, only publicly available information was used to perform the scoring. The scorecards also contained key strengths and recommendations tailored to each individual company.

Data analysis

Five companies (two manufacturers, two quick-service restaurants and one supermarket) were independently scored by EL, and inter-rater reliability was calculated using Agreestat2015.6. Where discrepancies arose, these were discussed and a final score agreed upon. A Mann–Whitney test was conducted to compare the scores of companies that engaged with those that did not engage in the process. A Spearman rank coefficient was calculated for correlation between BIA-Obesity scores and market shares of food companies. A p value of < 0.05 was considered statistically significant.

Ethics approval for this research was obtained from the University of Auckland Human Participants Ethics Committee (UAHPEC), reference number 018597. Informed consent for providing additional (non-public) information was obtained from company representatives through a participant information sheet and consent form.

Results

Twelve out of 25 companies fully engaged in the BIA-Obesity process. Seven companies actively declined to participate in the research; the remainder did not respond to attempts to involve them (Fig. 1). The Gwet AC1 inter-rater reliability coefficient for all indicators across the five companies independently scored by two researchers was 0.91 (95% CI 0.87–0.94).

The overall BIA-Obesity scores ranged from 0% (Goodman Fielder) to 75% (Nestlé) (Fig. 2). The median score across all sectors was 38%. Within sectors, the median scores were 47% for packaged food and non-alcoholic beverage manufacturers, 44% for supermarkets and 9% for quick-service restaurants. There was no significant correlation between New Zealand market share and BIA-Obesity score (data not shown). The median score of companies that fully engaged (median score = 48%) was significantly higher than the median score of companies who did not engage with the tool and process (median score = 12%) ($p \leq 0.001$).

For domain-specific results by company see Online Resource C.

Corporate strategy (STRAT)

The STRAT domain was the highest performing domain in the assessment. The median score was 55% across all sectors, and the range of scores was 0–100%. Within each sector, the median score was 63% for packaged food and non-alcoholic beverage manufacturers, 70% for supermarkets and 25% for quick-service restaurants.

Most companies (19/25) had an overarching commitment to improve population nutrition articulated in strategic documents. However, only few companies recognized international (i.e. the United Nations Sustainable Development Goals or the World Health Organization Global NCD Action Plan) priorities within their corporate nutrition strategy. In addition, few companies published annual national reports detailing their progress against their objectives and targets.

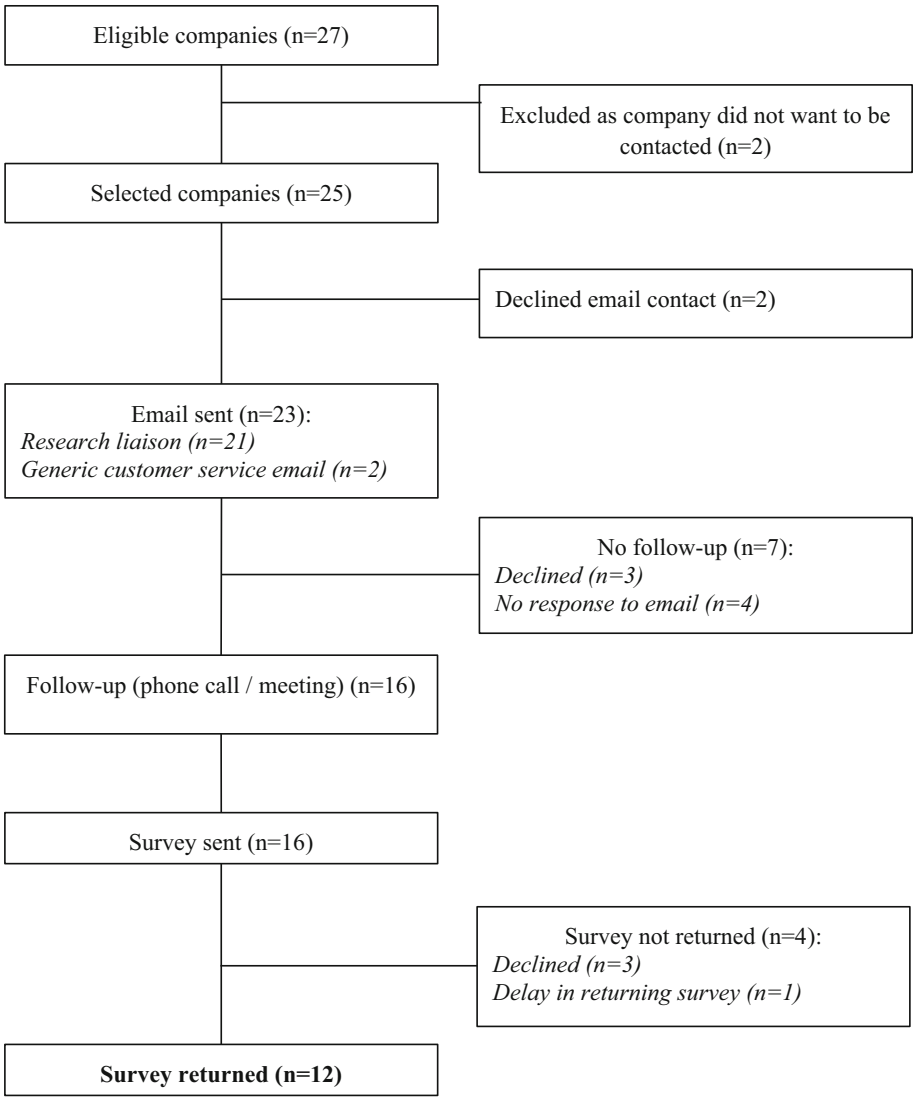

Fig. 1 Participant flow diagram showing the levels of engagement of the selected companies, New Zealand, 2017

Key recommendations for companies included: (1) identifying population nutrition as a priority focus area, with relevant objectives, targets and appropriate resourcing; (2) including regular reporting against objectives and targets; and (3) linking the Key Performance Indicators of senior managers to nutrition targets in the corporate strategy.

Relationships with other organizations (RELAT)

The median score was 38% across all sectors, while the range of scores was 0–100%. Within each sector the median scores were 44% for packaged food and non-alcoholic beverage manufacturers, 59% for supermarkets and 19% for quick-service restaurants.

Most companies (21/25) had adopted some transparency around relationships with other organizations. Three companies obtained the maximum score for this domain and declared relationships, support for research and political donations (if any) on their national website.

Key recommendations for companies to improve transparency in this domain included: (1) publishing all national relationships and funding for external research on their New Zealand website, and (2) disclosing all political donations in real time, or committing to not make political donations.

Product formulation (FORM)

The median score was 34% across all sectors, while the range of scores was 0–89%. Within each sector the median scores were 37% for packaged food and non-alcoholic beverage manufacturers, 61% for supermarkets and 8% for quick-service restaurants.

Most companies (20/25) had some commitments on product reformulation, most frequently for sodium

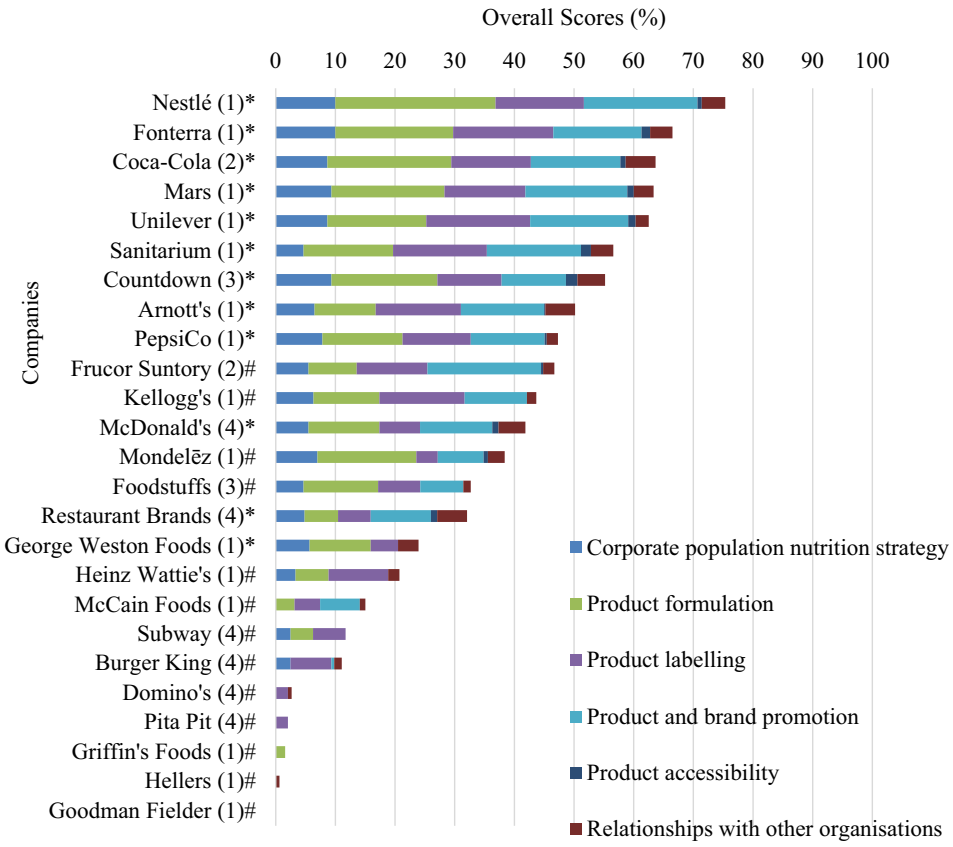

Fig. 2 Business Impact Assessment on Obesity and Population Level Nutrition (BIA-Obesity) overall scores, New Zealand, 2017

* Full engagement

\# Assessment based on publicly available information only

(1) Packaged food manufacturers, (2) Non-alcoholic beverage manufacturers, (3) Supermarkets, (4) Quick service restaurants

reduction. No companies obtained the maximum score for this domain. Nine out of 17 packaged food and beverage manufacturers had targets in relation to reducing portion sizes, while only one out of six quick-service restaurants had such targets.

Key recommendations for companies to improve their food reformulation commitments included: (1) committing to SMART (specific, measurable, achievable, relevant, time-bound) targets on sodium, sugar, saturated fat and trans fat reduction across the product portfolio, and (2) using the Health Star Rating system to guide efforts on product development and reformulation.

Product labelling (LABEL)

The median score was 47% across all sectors, while the range of scores was 0–87%. Within each sector the median scores were 57% for packaged food and non-alcoholic beverage manufacturers, 59% for supermarkets and 36% for quick-service restaurants.

Most companies (22/25) had some commitments on product labelling, most frequently in relation to the implementation of the voluntary Health Star Rating front-of-pack labelling system or providing information on nutritional composition of products online. No companies obtained the maximum score for this domain. Only one quick-service restaurant committed to display kilojoule information on menu boards. None of the companies routinely labelled added sugars or artificially produced trans fats on products.

Key recommendations for companies to improve commitments on product labelling included: (1) supporting the implementation of regulations by government on added sugar labelling on food products; (2) committing to provide calorie labelling for foods and meals on-site (quick-service restaurants) or Health Star Rating shelf tags in-store (supermarkets); and (3) committing to labelling products with nutrition claims only when products are healthy (i.e. meet the Food Standards Australia New Zealand Nutrient Profiling Scoring Criterion.

Product and brand promotion (PROMO)

The median score was 35% across all sectors, while the range of scores was 0–63%. Within each sector the median scores were 35% for packaged food and non-alcoholic beverage manufacturers, 36% for supermarkets and 1% for quick-service restaurants.

Eight out of 25 companies had no commitments in this domain, and no company obtained the maximum score for this domain. Almost half of the companies (11/25) committed to implement the Advertising Standards Authority (ASA) 'Children and Young People's Advertising Code'.

One supermarket committed to increase promotions for healthy products on the front page of their catalogue, and one quick-service restaurant chain committed to remove toys from children's meals.

Key recommendations included: (1) developing a marketing policy that applies to children up to the age of 18 years across broadcast and non-broadcast media and (2) eliminating the use of promotion techniques (e.g. cartoon characters, interactive games) with strong appeal to children on 'unhealthy' food products.

Product accessibility (ACCESS)

Only half of the companies had any commitments related to product accessibility. The range of scores for this domain was 0–33%. Existing commitments mainly related to removing sugary drinks from schools, increasing healthier food products in their portfolio, or providing free fruits for children in-store.

Key recommendations included: (1) supporting evidence-informed government policies such as a tax on sugar-sweetened beverages; (2) making a commitment to increase the proportion of healthy food products in the overall company portfolio; (3) limiting price promotions (particularly 'buy-one-get-one-free' and 'buy two and save') on 'less healthy' products; (4) introducing universal healthy checkouts (with no confectionery or sugar-sweetened beverages) across all stores nationally; and (5) committing not to provide free refills for caloric soft drinks.

Discussion

This study was the first of its kind to quantitatively assess the nutrition-related commitments of major food companies in New Zealand. The project achieved a significant level of engagement with companies in the New Zealand food industry, with almost half of all companies comprehensively engaging with the assessment process.

Food industry performance in relation to nutrition-related policies and commitments was highly varied, which provides support for the overall appropriateness of the BIA-Obesity as a tool to benchmark food industry commitments, as it successfully differentiates between companies according to the comprehensiveness, specificity and transparency of their nutrition-related commitments in a range of domains.

Overall, company scores were low across domains, indicating substantial opportunity for improvement.

The scores are similar to the results of the latest Access to Nutrition Index, which demonstrated scores for companies at the global level ranging from 0 to 6.8 on a 10-point scale (Access to Nutrition Index 2018a). New Zealand food and beverage manufacturers had a similar median BIA-Obesity score compared to those in Australia (Sacks and Robinson 2018a) (47% vs. 50%, respectively) but a higher median score compared to those in Canada (Vanderlee et al. 2019) (47% vs. 27%). Quick-service restaurants scored better overall in Australia (median score of 27% vs. 9% in New Zealand) (Sacks and Robinson 2018b). Supermarkets are too difficult to compare as only few are included in the assessments (Sacks et al. 2018).

The best-performing BIA-Obesity domain was 'corporate strategy'. This suggests that many companies have acknowledged their role in improving population nutrition, although fewer regularly report their progress against specific commitments in this area. The worst-performing domain was 'product accessibility'. This may reflect the difficulty in making accessibility commitments, due to the range of stakeholders involved in determining price and availability.

In New Zealand, company commitments are influenced by several national-level factors. For example, the Healthy Kids Industry Pledge is an initiative by the New Zealand Ministry of Health to address childhood obesity through partnership with the food industry (Ministry of Health 2017). Several companies and industry associations have signed on to this pledge, but the commitments are vague and provide little accountability. The Health Star Rating system is a government-endorsed interpretive labelling scheme, which has been adopted by several companies in New Zealand (National Institute for Health Innovation 2016); however, this is still a voluntary scheme with many large companies yet to implement the system, and overall uptake lagging behind Australia (National Institute for Health Innovation 2016; Jones et al. 2018). Finally, the ASA 'Children and Young People's Advertising Code' (Advertising Standards Authority 2017) is an industry code that appears to have encouraged companies to make commitments in the 'product and brand promotion' domain. However, the Code itself does not score maximum points under the BIA-Obesity, which suggests that it may be too

lenient on companies. It can be seen that, while some national progress has been made, the strength and degree of accountability regarding these overarching commitments remains low.

New Zealand is predominantly relying on voluntary actions by the food industry to improve food environments. In the absence of stronger industry commitments, regulatory actions are urgently needed to improve food environments, as recommended on repeated occasions by a wide range of experts (Vandevijvere et al. 2015, 2018).

The process of engagement with companies as part of this study resulted in more detailed policy information being provided to the research team and significantly improved company scores in comparison with those companies that were scored based on publicly available information only. However, the companies that engaged with the research process were also those that already performed well based on publicly available information only. This appears to indicate that companies that are taking more action to improve population nutrition are more likely to engage in discussions about the issue. Repeated assessments will provide insight into the extent to which accountability processes, such as BIA-Obesity, can successfully engage diverse companies over time. Although twelve companies returned a completed survey, this compares unfavourably with the first iteration of the Access to Nutrition Index in which 18 of the 25 selected companies engaged with the research team (Access to Nutrition Index 2013b). There might be several reasons for the lower engagement, including the time burden involved with completing the BIA-Obesity survey, a lack of trust from the food industry or a lack of nutrition-related commitments within those companies who chose not to engage.

This study has several limitations. Firstly, the BIA-Obesity only assesses company commitments and not performance in relation to those commitments. The absence of this information in the current phase limits the ability of these results to assess a company's actual contribution towards creating healthier food environments. Future phases of the BIA-Obesity will consider incorporating an assessment of the healthiness of a company's actual product portfolio. The latest global ATNI showed that only 32% of the products assessed achieved a Health Star Rating higher than 3.5, and only 14% met the nutritional standards to be marketed to children using the WHO EURO nutrient profiling criteria. It also showed a significant variation between countries, which indicates that country-level analysis of product profile would be beneficial (Access to Nutrition Index 2018a).

A recent Australian report also comprehensively assessed and benchmarked the healthiness of food company product portfolios using the Health Star Rating (Neal et al. 2019). Another Australian study assessed the rigour of self-substantiation of food–health relationships highlighted in health claims between 2013 and 2017. There were sixty-seven relationships notified by thirty-eight food companies. Of these, thirty-three relationships (52%) from twenty companies were deemed to have sufficient published evidence (Wellard-Cole et al. 2019).

In addition, evidence is increasing that companies are influencing public policies and opinion through a wide range of strategies, such as influencing health organizations, communities and the media, manipulation of the evidence base and discursive strategies seeking to frame the dominant narrative in their favour, among others (Ulucanlar et al. 2016; Mialon et al. 2015). In New Zealand, some research revealed the role of the alcohol and food industry attempting to smear the reputation of key public health advocates (Connor and Kypri 2018; Casswell 2018; Swinburn and Moore 2014). A recent article discusses the structured approach to public health advocacy taken in relation to the implementation of the Health Star Ratings in Australia and New Zealand as an example on how to influence government despite opposition from commercial interests (Moore et al. 2019).

Conclusion

New Zealand is predominantly relying on voluntary actions by the food industry to improve food environments. This study demonstrated that food industry performance in relation to nutrition-related policies and commitments was varied, but low overall. Companies need to set SMART commitments across a range of domains related to population nutrition and obesity, and transparently disclose these commitments. In the absence of stronger industry commitments, government regulations, such as restrictions on unhealthy food marketing, are urgently needed. Future assessments should incorporate measures of company performance using independently developed metrics.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Auckland Human Participants Ethics Committee (UAHPEC) (reference number Ref. 018597) and with the 1964

Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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