

# Industry use of 'better-for-you' features on labels of sugar-containing beverages

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## Abstract

**Objective:** To examine the ways in which sugar-containing beverages are being portrayed as 'better-for-you' (BFY) via features on product labels.

**Design:** Cross-sectional audit of beverage labels.

**Setting:** Adelaide, Australia. Data on beverage labels were collected from seventeen grocery stores during September to November 2016.

**Subjects:** The content of 945 sugar-containing beverages labels were analysed for explicit and implicit features positioning them as healthy or BFY.

**Results:** The mean sugar content of beverages was high at 8.3 g/100 ml and most sugar-containing beverages (87.7%) displayed features that position them as BFY. This was most commonly achieved by indicating the beverages are natural (76.8%), or contain reduced or natural energy/sugar content (48.4%), or through suggesting that they contribute to meeting bodily needs for nutrition (28.9%) or health (15.1%). Features positioning beverages as BFY were more common among certain categories of beverages, namely coconut waters, iced teas, sports drinks and juices.

**Conclusions:** A large proportion of sugar-containing beverages use features on labels that position them as healthy or BFY despite containing high amounts of sugar.

**Keywords**  
Sugar-sweetened beverages  
Marketing  
Advertising  
Food labels  
Health halo

The high global consumption of sugar-containing beverages has gained international public health attention due to its contribution to obesity<sup>(1)</sup> and non-communicable diseases such as type 2 diabetes<sup>(2)</sup>, CVD risk factors<sup>(3)</sup> and tooth decay<sup>(4)</sup>. A number of governments have introduced policies to reduce consumption of sugar-containing beverages through taxation, restrictions on marketing and public awareness campaigns<sup>(5)</sup>. It is therefore unsurprising that consumers are becoming concerned about the adverse health effects of these beverages<sup>(6)</sup>.

Community concern about sugar consumption appears to have led to changes in the marketing of sugar-containing beverages, for example through increased advertising of beverages as 'better-for-you' (BFY)<sup>(6)</sup>. 'Better-for-you' is a term used increasingly by the food and beverage industry in marketing publications and in market reports<sup>(6,7)</sup>. It is starting to appear in public-facing websites (e.g. PepsiCo)<sup>(8)</sup> where 'better-for-you' brands (e.g. Pure Leaf iced teas and Grain Waves) are presented in contrast to 'fun-for-you' brands (e.g. Pepsi and Doritos). The BFY

category is broad and ill-defined<sup>(6,7)</sup>, including both health and nutrition claims and products classified as 'good' ('products that generally are considered wholesome')<sup>(9)</sup>.

In Australia, foods and beverages are required to display a Nutrition Information Panel. Nutrition information labels are common in many countries; however, their relative complexity often results in low usage among sub-populations at the highest risk of developing nutrition-related chronic illnesses<sup>(10)</sup>. Health and nutrition claims are another source of nutritional information provided on food and beverage packages. While it is the manufacturers' decision whether to display health and nutrition claims or not, regulations exist around their use in Australia<sup>(11)</sup>. The use of health and nutrition claims on food and beverage labels is well documented. A number of studies show that consumers believe a product is healthier if it carries a health- or nutrition-related claim<sup>(12–15)</sup> and a recent meta-analysis concluded that health and nutrition claims have a substantial effect on dietary choices<sup>(16)</sup>. However, these studies often do not address broader, unregulated, BFY features on food and beverage labels,

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which has been identified as a limitation of previous research<sup>(17–19)</sup>.

The present study describes the features on sugar-containing beverage labels that position them as BFY, encompassing features that include, but are not limited to, health and nutrition claims. We defined a BFY feature as ‘text or an image on packaging that either claims or implies that a product has health-related benefits or is a healthier option’. This definition includes both claims that directly state a health benefit and broad terms that imply the product may play a role in health or well-being. The display of BFY features on labels may lead consumers to believe these sugar-containing beverages are healthier for them than they would if the labels did not display BFY features; this is known as a ‘health halo’ effect<sup>(20,21)</sup>. Understanding the messaging communicated to consumers through the BFY construct has the potential to provide further insight into trends of sugar-containing beverage consumption, including shifts from soda to other beverage types.

## Methods

### Data collection

During September to November 2016 we conducted an audit of labels on all non-alcoholic/non-dairy packaged beverages in South Australian grocery stores. We selected seventeen stores from leading grocery store chains<sup>(22)</sup>. Stores were purposively sampled from across areas of differing socio-economic status according to the 2011 Socio-Economic Index for Areas score<sup>(23)</sup> to ensure that any potential differences in the availability of beverages in differing socio-economic areas were captured. The method of data collection was based on similar studies of packaged food and beverage label audits<sup>(24–26)</sup>. We photographed the packaging of all non-alcoholic/non-dairy beverages of size 1 litre (34 fl. oz) or less from each store. Multipacks and packages where information was not presented in English were excluded. The study was granted an exemption from Human Research Ethics Committee review.

### Study sample

We recorded product descriptions (product name, flavour and package size). Product duplicates were removed from the sample. Multiple package sizes were also excluded after initial analysis of a subset of products found no difference between features on different sizes of products.

We classified products by beverage type (alcohol substitutes, coconut water (flavoured or plain), concentrates, energy drinks, fruit drinks, iced teas, juices (100% juices separated), soda, sports drinks, flavoured water (still or sparkling) and other (i.e. probiotic drinks); see online supplementary material, Supplemental Table 1 for

definitions) and recorded the sugar content. For the purposes of the present study, beverages were categorised as either sugar-free (<1 g/100 ml) or sugar-containing ( $\geq 1$  g/100 ml). Sugar-containing beverages were further categorised depending on their sugar content as low sugar ( $\geq 1$  and  $\leq 2.5$  g/100 ml), medium sugar ( $> 2.5$  and  $< 5$  g/100 ml), high sugar ( $\geq 5$  and  $< 10$  g/100 ml) and very high sugar ( $\geq 10$  g/100 ml). Low sugar was categorised based on requirements for making a low sugar claim on packages<sup>(11)</sup>. High and very high sugar were categorised based on WHO recommendations<sup>(27)</sup>, with very high sugar aligning with the recommendation of limiting daily free sugar intake to approximately 50 g, and high sugar aligning with the extended recommendation to limit daily free sugar intake to 25 g (calculations based on a standard 500–600 ml ready-to-drink beverage). Free sugar is defined as ‘monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates’<sup>(27)</sup>. For the purposes of the current study, this means simple sugars added to beverages and those naturally present within juice. Products in the final sample were assigned unique identifiers for products and their accompanying images.

### Data analysis

Beverage labels were analysed through content analysis<sup>(28)</sup>. Using the definition of BFY features above, we developed a coding framework for the content analysis (see online supplementary material, Supplemental Table 2). The coding framework was based firstly on health and nutrient content claims, as defined by the Food Standards Australia New Zealand Code on Nutrition Health and Related Claims<sup>(29)</sup>, and secondly on relevant literature on food packaging which has suggested that particular features on packages are perceived to imply health benefits. We conducted an initial analysis to refine categories and capture new codes. Through this process, we identified four new codes (superfoods, goodness, wellness and isotonic/hypotonic). The coding framework was further developed and refined through an iterative process that included coding random sub-samples and discussing any issues among the authors until consensus was reached. Before finalising the framework, an independent researcher was engaged to code a random sub-sample (2.5%) of products and any disagreements or problems with the framework were discussed among the authors until consensus was reached. The final coding framework consisted of thirty-one codes for BFY features which were grouped into eight categories (presented below). Beverage labels were coded by the lead author for the presence or absence of each BFY feature anywhere on the label. At completion, a random sub-sample (10%) of products was coded by an independent researcher and the percentage agreement was calculated (mean percentage

agreement: 94.5%; range: 77–100%). Cohen’s  $\kappa$  and other similar inter-rater reliability tests were not used because the underlying assumptions do not fit our data set. The  $\kappa$  statistic corrects for the percentage agreement due to chance agreement, which is assumed to apply to all observed ratings. However, this assumption is problematic when there is a low likelihood of chance agreement, such as when the prevalence of one outcome is high (e.g. large proportion of zeros due to the absence of a characteristic) as was the case in our data set. The nature of our data set aligns well with circumstances in which percentage agreement is an appropriate measure<sup>(30)</sup>.

**Results**

We identified 1123 unique beverage products, of which 84% (*n* 945) contained sugar. The sugar-containing beverages formed the sample for the subsequent analysis. Only 5.2% (*n* 49) of the sugar-containing beverages were low in sugar. The mean sugar content of beverages was 8.3 (sd 3.2) g/100 ml and ranged from 1.0 to 16.9 g/100 ml (excluding beverages with missing (*n* 4) or non-standardised (*n* 10) reporting of sugar content on labels). Energy drinks had the highest mean sugar content followed by soda and 100% juices, with a large proportion of beverages within these categories containing a high or very high sugar content (100.0, 96.2 and 98.0%, respectively). Although coconut waters and iced teas on average had lower amounts of sugar than other beverage

categories, over a third of beverages within these categories were high in sugar (see Table 1).

Almost all sugar-containing beverages contained BFY features on their labels (96.8%), with 90.5% of packages displaying fruit or vegetable features. When fruit or vegetable features were excluded, BFY features remained on a large proportion of products (87.7%), with a mean of 3.3 (sd 2.6) unique BFY features per product. Most beverages carried at least one BFY feature (see Table 2). Coconut waters carried the highest number of unique BFY features with an average of eight BFY features per product. Although beverages within the soda and energy drink categories had fewer BFY features on packages, at least one BFY feature was still present on over two-thirds of sodas (68.4%) and roughly two-thirds of energy drinks (62.1%).

**Better-for-you features**

*Fruit or vegetables*

The majority (86.3%) of beverages had text referring to fruit or vegetables on their packages and 61.1% had an image of fruit or vegetables (Table 3). Energy drinks were the only type of beverage on which it was rare for images of fruit or vegetables to be displayed (3.4%; see online supplementary material, Supplemental Table 3). Fruit drinks and sparkling flavoured waters commonly displayed the servings or percentage of fruit or vegetables on their labels (52.7 and 40.0%, respectively). Just under a third of beverage labels (29.1%) mentioned ‘superfoods’, with the most common superfoods being coconut (8.7%),

**Table 1** Sugar content of sugary beverages by beverage category: South Australian supermarkets (*n* 17), September–November 2016

Beverage type	No. of beverages ( <i>n</i> 931)*, †	Sugar content (g/100 ml)					
		Mean	sd	Low sugar ( $\geq 1$ and $\leq 2.5$ ) (%) ‡	Medium sugar ( $> 2.5$ and $< 5$ ) (%) ‡	High sugar ( $\geq 5$ and $< 10$ ) (%) ‡	Very high sugar ( $\geq 10$ ) (%) ‡
Energy drink	29	12	1.7	0.0	0.0	6.9	93.1
Soda	132	11	2.0	0.8	3.0	16.7	79.5
Juice, 100 %	293	10	2.2	0.0	2.0	51.9	46.1
Alcohol substitute	25	9	3.5	0.0	16.0	36.0	48.0
Water, flavoured mineral	50	9	2.3	0.0	10.0	54.0	36.0
Fruit drink	91	8	3.6	8.8	17.6	33.0	40.6
Juice (not 100 %)	33	8	3.1	6.1	9.1	63.6	21.2
Concentrate	83	7	2.5	2.4	13.2	68.7	15.7
Sports drink	39	5	1.3	2.6	15.4	82.0	0.0
Coconut water, flavoured	25	5	1.3	0.0	52.0	48.0	0.0
Iced tea	78	4	2.2	24.3	38.5	37.2	0.0
Coconut water, plain	35	4	1.1	8.6	57.1	34.3	0.0
Water, flavoured still	13	3	1.2	53.8	46.2	0.0	0.0
Other (probiotic drinks)	5	2	0.0	100.0	0.0	0.0	0.0

\*Beverages missing sugar content on labels (*n* 4).

†Beverages removed due to unstandardised reporting of sugar content, i.e. concentrates not as mixed with water (*n* 10).

‡Reported as percentage of beverage category.

**Table 2** Better-for-you (BFY) features on sugary beverage labels by beverage category\*,†: South Australian supermarkets (*n* 17), September–November 2016

Beverage type	No. of beverages ( <i>n</i> 945)	Mean no. of BFY features	sd	Minimum no. of BFY features	Maximum no. of BFY features	Presence of at least one BFY feature (%)‡
Coconut water, flavoured	25	8.0	2.8	3	13	100.0
Coconut water, plain	35	7.9	3.0	1	13	100.0
Iced tea	78	5.5	2.3	1	10	100.0
Sports drink	41	5.1	2.1	3	10	100.0
Juice (not 100%)	33	3.9	2.3	0	8	90.9
Juices, 100%	293	3.8	1.8	0	10	97.3
Fruit drink	91	2.7	1.8	0	7	92.3
Water, flavoured still	13	2.3	0.6	1	3	100.0
Water, flavoured mineral	50	1.8	1.6	0	5	80.0
Alcohol substitute	29	1.8	1.5	0	4	79.3
Concentrate	90	1.5	1.4	0	7	67.8
Soda	133	1.2	1.2	0	4	68.4
Energy drink	29	1.0	1.0	0	4	62.1
Other (probiotic drinks)	5	6.0	0.0	6	6	100.0

\*Excluding fruit or vegetable features.

†Reported as the occurrence of any one type of feature.

‡Reported as percentage of beverage category.

berries (6.3%), ginger (6.2%) and green tea/kombucha (5.4%). Superfoods were most frequently included on the labels of coconut waters (100.0% of labels; expected as coconut waters in themselves are considered a superfood), iced teas (59.0%), juices (45.5%) and 100% juices (27.0%).

#### Natural

Three-quarters of beverages (76.8%) contained features that implied they were natural products, by using the term 'natural', 'organic', 'fresh', 'real', 'pure' or 'raw' or by stating an absence of artificial products (i.e. additives, preservatives, colours etc.). All iced teas, over 90% of coconut waters and 100% juices, and over 80% of fruit drinks and juices described their products as natural. Of sodas, 61.7% also included features on labels that described them as natural, with 31.6% using the term 'natural' itself and 32.3% stating an absence of artificial products.

#### Energy and sugar content

Almost half of the sugar-containing beverages (48.4%) referred to the product containing lowered, or natural, energy or sugar content, with 'no added sugars' and 'no concentrates' the most frequently used terms. Coconut waters and 100% juices were the most common types of beverages to carry these features with over 80% of products displaying one or more feature. More specifically, 78.2% of 100% juices and 62.9% of plain coconut waters contained a no added sugar claim and 40.3% of 100% juices and 60.0% of coconut waters (both plain and flavoured) contained a no concentrates claim. Coconut waters also had no/low-fat or cholesterol claims (60.0% plain and 76.0% flavoured). A small number of beverage

packages (7.9%) stated that the product was naturally sweetened or that the sugar was natural or from fruit.

#### Nutrition

Over a quarter of beverages contained features that focused on nutrition (28.9%). This was most commonly achieved through referring to specific nutrients (25.6%) such as 'high in vitamin C'. Although this occurred across beverage types, it was most often used on sports drinks (68.3%) and coconut waters (60.0% flavoured and plain). Beverages also used broad terms such as 'nutritious'/'nourishing' (5.7%) and this was most common on juices (27.3% of juices and 12.3% of 100% juices).

#### Health

Fifteen per cent of beverages contained features that were specifically related to health and well-being. Broad terms such as 'health'/'healthy' were present most often on iced tea packages (32.1%) and coconut waters (28.6% plain and 16.0% flavoured), and terms such as 'wellness'/'well-being' or 'revitalise'/'refresh' were most common on energy drinks (27.6%), alcohol substitutes (24.1%) and juices (24.2%). References to specific health effects (e.g. claims about metabolism, cardiovascular/muscle function, immune system or digestive health) were less common; when present, these were most commonly found on juices (18.2%) and iced teas (12.8%).

#### Goodness

Fifteen per cent of beverages used the term 'goodness' (e.g. 'full of goodness' or 'the goodness of blueberry'). This was most commonly used on juice labels (60.6% of juices

**Table 3** Better-for-you (BFY) features on sugary beverage labels: South Australian supermarkets (*n* 17), September–November 2016

BFY feature category/ code	No. of beverages ( <i>n</i> 945)	Proportion of beverages (%)
Fruit or vegetables	855	90.5
Fruit/vegetables in text	816	86.3
Images of fruit/vegetables	577	61.1
Superfoods	275	29.1
Servings or % fruit/ vegetables	173	18.3
Natural	726	76.8
No artificial products	576	61.0
Natural	316	33.4
Pure or raw	152	16.1
Fresh	119	12.6
Real	115	12.2
Organic	111	11.7
Energy and sugar content	457	48.4
No added sugar	300	31.7
No concentrates	176	18.6
Naturally sweetened/ sugar from fruit	75	7.9
Low kilojoules	51	5.4
No/low fat or cholesterol	42	4.4
Low/reduced sugar or % sugar-free	40	4.2
Unsweetened	3	0.3
Nutrition	273	28.9
Listed specific nutrients	242	25.6
Nutritious or nutritional	54	5.7
Health	143	15.1
Wellness	87	9.2
Health/healthy	72	7.6
Health effects	36	3.8
Goodness	139	14.7
Dietary restrictions	123	13.0
Gluten free	98	10.4
Vegetarian or vegan	51	5.4
Dairy/lactose free	26	2.8
Sport	104	11.0
Hydration or rehydrate	79	8.4
Electrolytes	70	7.4
Sport or exercise	59	6.2
Isotonic or hypotonic	24	2.5
Performance	12	1.3

and 22.2% of 100% juices), iced teas (30.8%) and sparkling flavoured waters (24.0%).

#### Dietary restrictions

A small number of products noted that the beverage was suitable for people with dietary restrictions (13.0%), with gluten free being the most common (10.4%). Flavoured coconut waters were the most likely to indicate that they were suitable for a range of dietary restrictions such as gluten free, vegan and lactose free, with 60.0% containing at least one or more (37.1% in plain coconut waters), followed by iced teas which had 43.6% of products containing one or more feature per package.

#### Sport

Although there were relatively few sporting features on beverage packages across the sample (11.0%), all sports drinks contained sporting features and specifically referenced sport or exercise, with other commonly used

features on sports drinks being electrolytes (100.0%) and hydration (78.0%). In addition, most coconut waters also displayed sporting features on packages (88.0% of flavoured and 77.1% of plain), often through reference to hydration (68.0% of flavoured and 68.6% of plain) and electrolytes (52.0% of flavoured and 45.7% of plain), and less commonly through direct reference to sport or exercise (24.0% of flavoured and 8.6% of plain). Almost one quarter of energy drinks (24.1%) used references to sport.

#### Better-for-you features and sugar content

Most beverages with high or very high sugar content (*n* 759) carried a BFY feature on their label (85.8%; Table 4). Of these beverages with high and very high amounts of sugar, 44.0% displayed a BFY feature related to energy or sugar content. Specifically, 34.3% of beverages with high and very high amounts of sugar displayed a no added sugar claim on the label and 6.7% indicated that the beverage was naturally sweetened or that the sugar was from fruit.

#### Discussion

The current study found BFY features present on 96.8% of sugar-containing beverage labels, with an average of 3.3 unique features per label. These features align products with being natural, emphasise their fruit and vegetable content, emphasise other nutrient contents, favourably position sugar content and suggest functional properties for the beverages. By using these BFY features, beverages may be given a 'health halo'<sup>(20)</sup>.

#### Sugar-containing beverages are positioned as natural

Positioning beverages as natural appears to be at the centre of current BFY advertising, with over three-quarters of beverages in our study displaying natural features on their labels. Advertising products as natural is not new or unusual. Nature is often used to position products as intrinsically good, healthy, fresh and innocent<sup>(31)</sup>. The commodification of nature has previously been documented for bottled water<sup>(32)</sup> and foods<sup>(31)</sup>. Our study shows that manufacturers are positioning sugar-containing beverages in the same way, with coconut waters, iced teas and juices heavily using natural connotations on labels. Using the key word 'natural' was the most direct way this association was achieved with a third of packages doing so.

The frequent presence of fruit and vegetables on sugar-containing beverage labels also associates these beverages with being natural. The Coca-Cola Company has previously reported its efforts to 'capture the natural goodness of fruit and vegetables for beverage use'<sup>(33)</sup>, highlighting the importance of this positioning for advertising beverages. In our study, fruit and vegetables were present on

**Table 4** Better-for-you (BFY) features on sugary beverage labels by sugar content: South Australian supermarkets (*n* 17), September–November 2016

Sugar content (g/100 ml)	No. of beverages ( <i>n</i> 931) <sup>†,‡</sup>	BFY feature category/code (%) <sup>*</sup>										
		Fruit or vegetables	Natural	Energy/ sugar	No added sugar	Naturally sweetened/sugar from fruit	Nutrition	Health	Goodness	Dietary restrictions	Sport	Any BFY features§
Low sugar ( $\geq 1$ and $\leq 2.5$ )	48	97.9	85.4	85.4	27.1	10.4	41.7	39.6	14.6	31.3	8.3	100.0
Medium sugar ( $> 2.5$ and $< 5$ )	124	98.4	87.1	63.7	21.8	15.3	41.1	44.4	15.3	28.2	28.2	99.2
High sugar ( $\geq 5$ and $< 10$ )	405	92.8	77.5	49.4	35.6	10.1	26.4	7.9	19.8	13.1	13.8	89.4
Very high sugar ( $\geq 10$ )	354	85.3	73.2	37.9	32.8	2.8	26.3	9.9	9.3	5.6	2.0	81.6

<sup>\*</sup>Reported as percentage of beverages within sugar category displaying feature category/code.

<sup>†</sup>Beverages missing sugar content on labels (*n* 4).

<sup>‡</sup>Beverages removed due to unstandardised reporting of sugar content, i.e. concentrates not as mixed with water (*n* 10).

<sup>§</sup>Excluding fruit or vegetable category.

labels in a range of ways that appeal to varying levels of consumer consciousness. Fruit or vegetable flavours and images were highly prevalent across beverage types, implicitly associating the beverages with being natural. On the other hand, while listing the servings of fruit and vegetables in a beverage was less prevalent, this more explicitly associated beverages with being natural, and nutritious, equating the consumption of juice to that of whole foods.

Promoting the absence of artificial (non-natural) products on labels was another common way through which beverages were positioned as natural. Claims such as ‘no artificial products, colours or flavours’ can often be, and were, applied across beverage categories, including beverages such as sodas which could otherwise be considered inherently unhealthy.

### ***Sugar-containing beverages are positioned as a source of nutrition***

Altering the nutritional profile of foods and beverages through reformulation and fortification can be used by manufacturers to market products as a source through which nutrition is delivered<sup>(34)</sup>. Reformulation can be used to reduce the nutrients perceived by consumers as ‘bad’ for health and fortification increases the nutrients perceived as ‘good’ for health<sup>(34)</sup>. In our study, both of these strategies were used to promote sugar-containing beverages with labels addressing the sugar and vitamin/mineral content of beverages.

Sugar is a nutrient of increasing concern to consumers<sup>(6,7)</sup>. Our study found that labels address concerns about sugar by favourably positioning the sugar content of beverages, most commonly though ‘no added sugar’ claims which were present on just under a third of labels. Beverages that included ‘no added sugar’ claims on their labels were still high in sugar, specifically free sugar. Notably problematic in this regard is 100% juices, with over three-quarters of the 100% juices in our sample making a ‘no added sugar’ claim, while the mean sugar content of the category was surpassed only by soda and energy drinks.

Fortification of sugar-containing beverages can also be used to draw consumer attention towards positive nutrients rather than high sugar content. As such, the use of fortification positions these non-core (discretionary) products as a source of nutrients. This was evident on a quarter of labels which referred to the nutrient content of beverages, for example through claiming high vitamin and mineral content.

### ***Sugar-containing beverages are positioned as providing functional benefits***

Functionalism extends the concept of fortification from meeting adequate nutrient intake to providing optimal nutrition for enhanced health or bodily functions<sup>(34)</sup>. Functional beverages are often perceived to be novel and technological, invoking science through reference to

physiological functions and health<sup>(35)</sup>. Although functional beverages comprise a relatively small segment of the market, their popularity is increasing<sup>(36)</sup>. Our study found that functionalism was advertised in two ways on beverage labels.

First, sports drink labels promoted functional benefits associated with achieving optimal sporting performance. Sports drink labels advertised electrolytes and the provision of optimal hydration for sporting performance. Scientific terms such as 'isotonic' and 'hypotonic' accompanied this positioning, further illustrating the scientific and functional positioning of these beverages.

Second, coconut waters were positioned as a 'natural' functional beverage, with the labels advertising electrolyte content and hydration. Unlike sports drinks, few coconut water labels made direct reference to sport and exercise. Linking functional benefits with the idea of being natural, coconut waters capitalised on the purported benefits of electrolyte consumption (namely, sporting performance) and appealed to consumers who desire natural products.

### ***Positioning high sugar beverages as better-for-you is misleading to consumers***

Prior research on consumer evaluation of beverages for health purposes is limited and has not explored how beverages are being positioned as healthy<sup>(37)</sup>. However, existing research on positioning foods as healthy or BFY suggests that many advertising features we identified on beverages align with how consumers evaluate a product as healthy. For example, Luomala *et al.* have shown how positioning a food as natural influences consumers' opinions on whether the food is healthy or not<sup>(38)</sup>. Irmak *et al.* found that renaming candy from 'candy chews' to 'fruit chews' can influence the health beliefs, and consumption, of candy<sup>(39)</sup>. Using BFY features on labels may therefore influence consumers' assessment of whether sugar-containing beverages are healthy, or healthier than other options.

Positioning beverages that contain high amounts of free sugar as BFY is potentially misleading. BFY features on labels disregard the source through which the purported benefits are being delivered<sup>(40)</sup> and distract from the harms associated with consuming products high in free sugars<sup>(27)</sup>. For example, advertising that juice contains 'no added sugar' or 'natural' sugar from fruit and vegetables distracts from the high free sugar content of these beverages. Through positioning sugar-containing beverages as BFY, consumers may be influenced to select products they believe are health-promoting, which are in fact potentially harmful when overconsumed.

### ***Public health implications***

Our study has highlighted the ways in which sugar-containing beverages are being advertised as healthy on labels. The predominance of BFY features on these beverages further suggests that consumers are becoming

increasingly concerned about health<sup>(7)</sup>, particularly in regard to sugar consumption from beverages<sup>(6)</sup>. Increased public concern around sugar consumption from beverages is a positive indicator for public health outcomes and it is not surprising that beverage manufacturers are implementing efforts to address this concern. Originally intended for improving public health, reformulation and fortification of foods and beverages has also been adopted by manufacturers and is a common technique used for advertising purposes<sup>(34)</sup>. However, the use of natural ingredients, increased vitamin and minerals and 'functional ingredients', as advertised on sugar-containing beverage labels in our study, does not offset the harms associated with high sugar consumption<sup>(27)</sup> from these beverages. Reformulation that leads to positive public health outcomes in obesity and related non-communicable diseases is likely to occur only through significant reduction in the sugar content of these beverages. Knowledge of the techniques used to position sugar-containing beverages as BFY can inform the development of public messaging that aims to increase community literacy and reduce population overconsumption of free sugars including sugar-containing beverages.

Our study has also highlighted that the positioning of sugar-containing beverages as BFY occurs despite existing regulations that aim to prevent the misleading advertising of unhealthy products as healthy<sup>(29)</sup>. We found that it was most common for implicit BFY features (such as fruit flavours and advertising natural ingredients) to be displayed on sugar-containing beverages. Research has demonstrated that implicit health-related labelling features, such as product titles<sup>(20)</sup> and colour<sup>(21)</sup>, increase consumer perceptions of the healthfulness of discretionary foods. It has further been suggested that implicit features have a stronger effect on consumer health perceptions than explicit nutrition claims through creating a health halo effect<sup>(20)</sup>. The prominence and effect of implicit health- and nutrition-related features, such as the BFY features identified in our study, therefore need to be considered in existing and future regulations, for example through broadening the scope of what is regulated. Such regulations can be further strengthened by restricting the use of all health- and nutrition-related features on labels to non-discretionary foods and beverages. Australia has implemented such restrictions for health claims, with foods and beverages being required to meet a predefined nutrient profile score to be eligible to display health claims<sup>(11)</sup>. These restrictions have not been extended to nutrition claims, which may explain why a quarter of sugar-containing beverages advertised the presence of specific nutrients on labels.

### ***Limitations***

We restricted our study to the labels of water-based sugar-containing beverages, excluding milk-based beverages

which may also be high in added sugar. Milk-based beverages may use different BFY features on their labels that were not identified in our study; analysis of the advertising features on sweetened milk labels would be complementary to our research. We also focused on advertising through labels, which may differ from advertising through other media. Further, while we have defined and measured BFY features on labels, our analysis cannot determine whether these features influence how people evaluate these beverages. The BFY features identified in the present study should be tested in experimental research to explore the effect of these features on consumers' perceptions and consumption of sugar-containing beverages.

## Conclusion

Many sugar-containing beverage labels include features that imply these drinks are healthy, or healthier than alternative beverages. If BFY features lead consumers to believe these beverages are healthy, this may influence consumption, with consequent negative implications for the health of the public. Those working in obesity prevention and public health must find ways to counter and/or prevent the misleading advertising of sugar-containing beverages as healthy.

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## Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/S1368980018002392>

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