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What foods are hypermarkets promoting? A content Analysis of hypermarket flyers in Malaysia

S ZAHARY NUR FAIQAH EZRYN[1], GARY SACKS[2] and MOHD JAMIL SAMEEHA[1]*

[1]Nutritional Sciences Program, Center for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abd Aziz, Kuala Lumpur, Malaysia.
[2]Deakin University, Global Centre for Preventive Health and Nutrition (GLOBE), Geelong, Australia.

Abstract

Hypermarkets use marketing strategies that influence food choices and consumer buying behavior. This study aimed to identify the prevalence of promotions for 'healthy' and 'unhealthy' foods (on the front page vs the entire flyers) in hypermarket flyers in Malaysia and compare the healthiness of food products advertised during festive and non-festive seasons. The top three hypermarket chains (by market share) operating in Malaysia were selected and online flyers were collected for 16 weeks from January to August 2020 (n=23 flyers with 3559 food products). Food products were categorized into four categories: 'core' (healthy), 'discretionary' (unhealthy), 'alcohol', and 'other', and 24 sub-categories, based on the Australian Guide to Healthy Eating (AGTHE). The Chi-square for Goodness of Fit test was used to determine the relationship between the number of promotions for all 4 categories and between food products advertised during festive and non-festive seasons. The result showed that promotion of the 4 food categories was only significant in the entire flyers ($\chi2=17.762$, $p<0.001$), with 'discretionary' (48.7%) being the highest food advertised. Food and drinks that were promoted more during the festive compared to the non-festive season in the entire flyers were 'discretionary' food (49.3% vs 47.8%, $\chi2=40.852$, $p<0.001$) and alcohol (6.7% vs 3.9%, $\chi2=28.846$, $p<0.001$). The study highlights the dominance of unhealthy food products in hypermarket flyers in Malaysia. As part of efforts to address unhealthy diets and obesity prevalence in Malaysia, an increased focus on addressing the marketing of unhealthy foods in food retail settings is warranted.

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CONTACT Mohd Jamil Sameeha sameeha@ukm.edu.my Nutritional Sciences Program, Center for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abd Aziz, Kuala Lumpur, Malaysia.

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Abbreviations:
AGTHE: Australian Guide to Healthy Eating,
ABS: Australian Bureau of Statistics,
SPSS: Statistical Package for the Social Sciences

Introduction

An unhealthy diet is one of the major modifiable risk factors for many chronic diseases, such as cardiovascular diseases, cancer, diabetes, and obesity. A total of 2.5 billion adults aged 18 years and older were overweight, including over 890 million adults who were living with obesity.[1] In Malaysia, a 2023 National Health and Morbidity Survey data showed that the prevalence of overweight and obesity has increased to 54.4%[2] compared to 50.1% in 2019.[3]

The change in dietary patterns to one that is high in fat and sugar, but low in fiber, contributes to the increasing prevalence of overweight and obesity among Malaysians.[4] The characteristics of retail food environments have an important influence on purchasing behavior and food consumption.[5] In Malaysia, as in many other countries, up until recently, most food was bought from 'traditional' retailers, such as night markets and small stores. In recent years, there has been a shift to increased food purchases from so-called 'modern' retailers, such as hypermarkets and supermarkets.[6] Hypermarket formats are now more frequently visited by consumers than other store formats reportedly[7] because hypermarkets are more convenient, and offer a wide range of food products from packaged foods to fresh foods under one roof,[8] typically at lower prices than other store formats.[9]

Hypermarkets commonly use a wide range of marketing techniques, including flyers showcasing products that are 'on special'. The products advertised in the flyers are typically positioned in strategic places in the hypermarket as part of an effort to attract customers and increase sales.[10] Evidence shows that supermarket marketing through flyers is very effective. For example, one study found that products featured in promotional flyers with a 15% discount showed an increase in sales by 173%,[11] although this increase in sales varied in terms of brands, products, and stores.[12] Previous research from 12 countries (Canada, Australia, India, Hong Kong, Malaysia, Philippines, New Zealand, South Africa, Singapore, Sweden, United States of America, United Kingdom) showed that hypermarket flyers promote more unhealthy food than healthy food.[13] In this study, specifically for Malaysia, the result found that 'discretionary' (unhealthy) food (48.0%) was promoted more promoted than 'core' (healthy) food (25.2%) in the entire flyers. Contrastingly, on the front page of the flyers, 'core' food (36.7%) was promoted slightly more than 'discretionary' food (26.7%).[13] However, there is no evidence of how these results may vary by chain and season in the Malaysian context, as only one hypermarket chain was included in the study, which was conducted during a non-festive season.

This study aimed to build on previous research to identify the prevalence of promotions for 'healthy' and 'unhealthy' foods in flyers from multiple hypermarket chains in Malaysia and compare the healthiness of food products advertised during festive and non-festive seasons. In this study, a hypermarket is characterized as a retail outlet with a selling space exceeding 2,500 square meters, primarily focused on food, beverages, and groceries. Additionally, hypermarkets offer a variety of non-grocery products and are commonly located in designated areas or act as the main store in shopping centers.[14]

Materials and Methods

Study Design

This was a content analysis study. The promotion of healthy and unhealthy foods on the front page and in the entire flyers was assessed based on a protocol on food retail developed by the international INFORMAS network.[13]

Hypermarket Selection

The largest three hypermarket chains operating in Malaysia were selected based on 2020 market share data from the Ministry of Domestic Trade and Consumer Affairs statistical report.[15] Three chains were selected: Tesco (now called Lotus's), Giant hypermarkets, and Aeon Big hypermarkets.

Flyers Collection

Flyers from the three included hypermarkets (*Tesco, Giant, Aeon Big*) were collected through their company websites over 16 weeks from January to August 2020 (n = 23 flyers with 3559 food products). The hard copy flyers for all hypermarkets were also collected for 8 weeks, and they were found to be the same as the online version.

The January-August period was selected due to 8 weeks of festive season (Chinese New Year and Independence Day) and another 8 weeks of non-festive season in Malaysia. For the festive season, most retailers started selling festive items way in advance and flyers were collected in January 2020 (Chinese New Year) and August 2020 (Independence Day). For the non-festive season, flyers were collected in selected weeks in February, March, April, and July 2020 (a total of 8 weeks). Non-festive season collection was extended up to 4 months due to the COVID-19 pandemic, causing the distribution of flyers to be inconsistent. Previously, before the pandemic, flyers were issued every two or four weeks.

Data Collection

Based on the flyers, the name of the hypermarket, and dates of the flyers' promotion start and end (month) were recorded in Microsoft Excel. For products included in the flyer, product name, description, and brand were recorded and categorized based on location (front page or rest of the flyer ('entire flyer'), and were then coded and analyzed.

Coding

The total number of food products on the front page and in the entire flyers were calculated according to 4 main categories ('core', 'discretionary', 'alcohol', and 'other') and 24 sub-categories (Table 1). Categorization was conducted based on the description of 'core' and 'discretionary' foods by referring to the Australian Guide to Healthy Eating (AGTHE) 2014 and the description of 'discretionary' foods published by the Australian Bureau of Statistics (ABS) 2013 (Table 1).[13] The Australian version of the food category was used as Malaysia does not have a specific 'core' and 'discretionary' food category. Food coding was done by one researcher. Cohen's Kappa intra-rater reliability test was used to measure the reliability to assess whether there were differences in food coding when done at different times. Any discrepancies were resolved through a discussion with the corresponding author. Advise and opinion were sought from the co-researcher when issues arose in food coding. The Cohen's Kappa test result was 1.00 (very good).

Table 1: Categorization of food products with examples according to AGTHE and ABS

4 main categories	Sub-categories	Included
Core	Fruits	Fresh, canned, dried, fruit juices, pre-packaged fruit mixes
	Vegetables	Fresh, canned (baked beans), frozen, pickled vegetables, pre-packaged vegetable mixes, vegetable-only soup (tomato /pumpkin soup), tomato puree and pastes, vegetable juices, olives, sundried tomatoes
	Dairy and alternatives	Milk (fresh and long-life), soy and other milk alternatives, all yogurt (added fruit & full fat), cheese, cream cheese, cultured milk, custards, breakfast cereal beverages
	Meat and alternatives	Fresh/frozen/roasted, beef, lamb, pork, chicken, veal, mince, crumbed raw fillets, fish, canned fish (tuna), smoked fish, seafood products, tofu, eggs
	Grains	Rice, lentils, chickpeas, flour, pasta (fresh and dried), oats, bread (fruit bread), bread rolls, crumpets, English muffins, flat bread (pita), instant noodles, canned spaghetti, breakfast cereals (<30 g/100 g sugar or <35 g/100 g sugar if includes fruit), savory biscuits (energy <1800 KJ/100 g), rye, corn, and rice-based biscuits, raw nuts and seeds, unsalted nuts, plain popcorn

4 main categories	Sub-categories	Included
	Water	Unflavoured mineral water, sparkling water
	Fruit juice	100% fruit juice
Discretionary	Fats and oils	Butter, margarines, alternative spreads, oils
	Processed meats	Sausages, rissoles, hamburgers, bacon, processed delicatessen
	meat	(salami, ham), dried meats
	Jams	
	Confectionery & chocolate	Blocks, bars, chocolate-coated products, lollies, chocolate toppings
	Chips	Potato crisps, corn chips, other crisps
	Desserts & ice-creams	Cake, cake mixes, sweet biscuits, slices, scones, canned fruit in syrup, frozen yogurt, sweet bread (buns, scrolls), pastries (croissants), doughnuts, icy poles
	Unhealthy ready meals	Chicken nuggets, garlic bread, pizza, dumplings, spring rolls, crumbed/fried/battered meats, frozen or ready-to-eat chips and wedges, ready-to-eat meat products in sauce, meat pies, sausage rolls, ready-to-eat burgers, kiev, schnitzel
	Other snacks	Breakfast cereals (>30 g/100 g sugar or >35 g/100 g sugar if includes fruit), savory biscuits (energy >1800 KJ/100 g), dips, salted roasted nuts, muesli bars, snack bars, salted and flavoured popcorn
	Soft drinks	Full-sugar soft drinks
	Soft drinks diet	Diet, sugar-free soft drinks
	Energy drinks	Energy drinks
	Fruit drink	Fruit flavoured drinks
	Cordial	Pre-prepared syrups and concentrate
	Other drinks	Flavored milk, flavored mineral waters, vitamin waters, sports drinks, electrolyte drinks
	Discretionary-other	Cream, pastry sheets, sugar, condensed milk, icing sugar
Alcohol	Alcohol	Beers, wines, spirits, alcoholic mixers
Other	Other	Products that could not be classified into any other category, tea, coffee, milk powder, natural sweeteners, chewing gum, mixed

4 main categories	Sub-categories	Included
		dishes (ingredients from multiple categories that did not fall predominately under one sub-category), ready-to-eat and frozen meals that could not be classified as unhealthy (weight control meals), stock powder and liquid, salad dressing, sauces, vinegar, salt, breakfast spreads, mayonnaise, herbs and spices, protein powders, infant food products, mixed salads with dressing

Most of the food products were classified based on product type, for example, fruits and vegetables were classified as 'core', whereas confectionery and chocolate were classified as 'discretionary', without detailed analysis of the nutrient profile of individual products. However, in some cases, the ABS classification was used to differentiate between 'core' and 'discretionary' foods. For example, the categorization of breakfast cereals was according to the sugar content. If breakfast cereals contained less than 30g sugar per 100g without added fruit or less than 35g sugar per 100g with added fruit, breakfast cereals were classified as 'core'. If sugar content was above this limit, breakfast cereals were classified as 'discretionary'. In addition, the categorization of savory biscuits was according to the energy content. If savory biscuits contained less than 1800kJ of energy per 100g, they were classified as 'core'. If energy content was above this limit, they were classified as discretionary.[13]

All advertised products were counted separately unless there were multiple products advertised together (e.g., when a range of different flavored biscuits from the same supplier were featured in the same picture on the flyer). In cases where multiple products of the same category were advertised, but in different sizes or flavors in one picture, these were counted as a single product (e.g. oatmeal instant / quick cook counted as a single product). Products that did not display a price alongside their advertisement were not considered in the count (e.g. pictures of products were used in recipe promotions). Furthermore, for beverage products, such as milk, if the product description on the flyers stated 'assorted flavors', the product was classified as other drinks (discretionary). If there was no description of the flavors, milk was classified according to the product name (e.g. low-fat milk or chocolate milk) based on the picture. Thus, low-fat milk was classified as 'dairy and alternatives' ('core'). Chocolate milk, on the other hand, was classified as 'other drinks' ('discretionary'). Malted drinks in the form of three-in-one sachet, boxed, or packed (powders) were classified as 'other drinks' ('discretionary') due to their high sugar content.

All efforts were made to minimize the number of products classified as 'other' category (e.g. spices). The infant formula was excluded from the analysis, as per previous analyses.[13]

Statistical Analysis

The total number of food products on the front page and in the entire flyer, and the percentage of 4 major categories and each sub-category were calculated. The Chi-square for Goodness of Fit test was used to determine the relationship between: (i) the promotion of 4 food categories on the front page and the entire flyers; and (ii) the promotion of 'core' and 'discretionary' foods during festive versus non-festive season in the entire flyers. It's assumed that every observation in the dataset is independent. All analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 25. Statistical significance was set at $p<0.001$ and $p<0.05$.

Results

A total of 23 flyers from 3 hypermarkets were analyzed. This comprised 8 flyers for *Giant*, 8 flyers for Tesco (now called Lotus's in Malaysia), and 7 flyers for *Aeon Big*. A total of 3559 (60%) food products were included in these flyers, out of a total of 5931 food and non-food products advertised on these flyers. Non-food products were excluded from this study. Giant hypermarket had the highest mean number of food products per flyer (n=212) while the Tesco hypermarket had the lowest mean number of food products per flyer (n=93).

The frequency and percentage of food advertised in the 23 flyers were classified into 4 major categories (Table 2). Overall, front and entire pages advertised a higher proportion of 'discretionary' foods than 'core' foods. On the front page, a total of 59.8% of 'discretionary' foods were advertised, while for the entire flyer, 48.7% of the advertised foods were 'discretionary' foods.

For the products advertised on the front page of flyers, the sub-category with the highest percentage of food products advertised as 'other drinks' (e.g. flavored milk, high sugary beverages, malt drinks, electrolyte drinks) (25.5%), followed by 'grains' (19.6%). For the entire flyer, the category with the highest percentage of food products advertised was 'other' (e.g tea, coffee, milk powder, salad dressing, vinegar, mayonnaise, salt, sauces, breakfast spreads) (17.5%), followed by 'other drinks' (10.3%).

Table 2: Products advertised on the front and entire pages of flyers (n=23) from the three largest hypermarket chains in Malaysia, classified into 4 major and 24 sub-categories from January to August 2020

Food category and sub-category	Front page n (%)	Entire pages n (%)
Core	**32 (31.4)**	**1010 (28.4)**
Fruits	0 (0.0)	95 (2.7)
Vegetables	1 (1.0)	166 (4.7)
Dairy and alternatives	9 (8.8)	178 (5.0)
Meat and alternatives	1 (1.0)	189 (5.3)
Grains	20 (19.6)	361 (10.1)
Water	0 (0.0)	15 (0.4)
Fruit juice	0 (0.0)	5 (0.1)
Discretionary	**61 (59.8)**	**1732 (48.7)**
Fats and oils	7 (6.9)	166 (4.7)
Processed meat	0 (0.0)	34 (1.0)
Jams	0 (0.0)	8 (0.2)
Confectionery and chocolate	5 (4.9)	134 (3.8)
Chips	2 (2.0)	123 (3.5)
Desserts and ice-creams	6 (5.9)	291 (8.2)
Unhealthy ready meals	6 (5.9)	297 (8.3)
Other snacks	8 (7.8)	104 (2.9)
Soft drinks	2 (2.0)	58 (1.6)
Soft drinks diet	0 (0.0)	0 (0.0)
Energy drinks	0 (0.0)	3 (0.1)
Fruit drink	0 (0.0)	54 (1.5)
Cordial	0 (0.0)	13 (0.4)
Other drinks	26 (25.5)	367 (10.3)
Discretionary-other (e.g. pastry sheets, condensed milk)	0 (0.0)	81 (2.3)
Alcohol	**0 (0.0)**	**195 (5.5)**
Other	**9 (8.8)**	**622 (17.5)**
Total	102 (100.0)	3559 (100.0)

Based on Table 3 below, the result showed that promotion of the 4 food categories was only significant ($p<0.001$) in the entire pages ($\chi 2=17.762$, $p<0.001$) of flyers, with 'discretionary' (48.7%) being the highest food advertised.

Table 3: The promotion of 4 food categories on the front and entire pages of flyers (n=23) from the three largest hypermarket chains in Malaysia, from January to August 2020

Food Category	Front page			Entire pages		
	n (%)	χ2	p-value	n (%)	χ2	p-value
Core	32 (31.4)	0.757	0.685	1010 (28.4)	17.762	<0.001**
Discretionary	61 (59.8)			1732 (48.7)		
Alcohol	0 (0.0)			195 (5.5)		
Other	9 (8.8)			622 (17.5)		
Total	102 (100)			3559 (100)		

**p<0.001

Table 4: Products advertised on the entire pages of flyers (n=23) from the three largest hypermarket chains in Malaysia, classified between festive and non-festive seasons, January to August 2020

Food category and sub-category	Festive	Non-festive	χ2	p-value
	n (%)	n (%)		
Core	**551(27.2)**	**459 (29.9)**	**8.380**	**0.004***
Fruits	45 (2.2)	50 (3.3)	0.263	0.608
Vegetables	100 (4.9)	66 (4.3)	6.964	0.008*
Dairy and alternatives	97 (4.8)	81 (5.3)	1.438	0.230
Meat and alternatives	101 (5.0)	88 (5.7)	0.894	0.344
Grains	198 (9.8)	163 (10.6)	3.393	0.065
Water	7 (0.3)	8 (0.5)	0.670	0.796
Fruit juice	2 (0.1)	3 (0.2)	0.200	0.655
Discretionary	**999 (49.3)**	**733 (47.8)**	**40.852**	**<0.001****
Fats and oils	86 (4.2)	80 (5.2)	0.217	0.641
Processed meat	23 (1.1)	11 (0.7)	4.235	0.040*
Jams	5 (0.2)	3 (0.2)	0.500	0.480
Confectionery and chocolate	79 (3.9)	55 (3.6)	4.299	0.038*
Chips	66 (3.3)	57 (3.7)	0.659	0.417
Desserts and ice-creams	175 (8.6)	116 (7.6)	11.962	0.001*
Unhealthy ready meals	180 (8.9)	117 (7.6)	13.364	<0.001**
Other snacks	67 (3.3)	37 (2.4)	8.654	0.003*
Soft drinks	39 (1.9)	19 (1.2)	6.897	0.009*
Soft drinks diet	0 (0.0)	0 (0.0)	-	-
Energy drinks	1 (0.0)	2 (0.1)	0.333	0.564
Fruit drink	36 (1.8)	18 (1.2)	6.000	0.014*
Cordial	8 (0.4)	5 (0.3)	0.692	0.405
Other drinks	192 (9.5)	175 (11.4)	0.787	0.375
Discretionary-other	43 (2.1)	38 (2.5)	0.309	0.579
Alcohol	**135 (6.7)**	**60 (3.9)**	**28.846**	**<0.001****
Other	**341 (16.8)**	**281 (18.3)**	**5.788**	**0.016***
Total	2026 (100.0)	1533 (100.0)		

*p<0.05 **p<0.001

Table 4 above shows the products advertised in the entire pages of flyers (n=23) during the festive versus non-festive season. The results showed that 'core' food and 'other' were advertised more during the non-festive compared to the festive season (29.9% vs 27.2%, $\chi2=8.380$, $p=0.004$ for 'core' food and 18.3% vs 16.8%, $\chi2=5.788$, $p=0.016$ for 'other'), while 'discretionary' food and 'alcohol' were promoted more during the festive season compared to the non-festive season (49.3% vs 47.8%, $\chi2=40.852$, $p<0.001$ for discretionary and 6.7% vs 3.9%, $\chi2=28.846$, $p<0.001$ for alcohol) in the entire flyers, and all were statistically significant.

However, under 'core' food, 'vegetables' seem to be promoted more during the festive season compared to the non-festive season (4.9% vs 4.3%, $\chi2=6.964$, $p=0.008$). Under 'discretionary' foods, products such as 'processed meat' (1.1% vs 0.7%, $\chi2=4.235$, $p=0.040$), 'confectionery and chocolate' (3.9% vs 3.6%, $\chi2=4.299$, $p=0.038$), 'dessert and ice-creams' (8.6% vs 7.6%, $\chi2=11.962$, $p=0.001$), 'unhealthy ready meals' (8.9% vs 7.6%, $\chi2=13.364$, $p<0.001$), 'other snacks' (3.3% vs 2.4%, $\chi2=8.654$, $p=0.003$), soft drinks (1.9% vs 1.2%, $\chi2=6.897$, $p=0.009$) and 'fruit drink' (1.8% vs 1.2%, $\chi2=6.000$, $p=0.014$) were promoted more during the festive compared to the non-festive season on the entire pages of hypermarket flyers in Malaysia.

Discussion

This 2020 study found that flyers from the three largest hypermarket chains in Malaysia advertised more 'discretionary' food than 'core' food. Overall, the most commonly advertised sub-category of 'discretionary' food on the front page, in the entire flyers, and promoted during both festive and non-festive seasons was 'other drinks' (e.g. flavored milk, high sugary beverages, malt drinks, electrolyte drinks).

The findings are consistent with previous studies where 'discretionary' food was highly promoted compared to 'core' food on the front page of grocery stores' flyers in South Africa (58.0%) and supermarkets in Australia (53.4%).[13] However, an international comparison of the content of supermarket catalogs/circulars in 2015 found that supermarkets in Canada (63.7%), New Zealand (71.4%), and Sweden (69.4%) advertised more 'core' food than 'discretionary' food on the front page of flyers.[13]

In terms of food categories, food products often advertised on the front page in different countries such as the US and Brazil were mainly ultra-processed foods [16,17] and sugary drinks.[16,18] In one US study in 2013, processed foods (84%) and sugary drinks (59%) were the two highest food products advertised on the front page of flyers, while baked products, breakfast cereals, cereal grains, and pasta products were only 15% of advertised products, and a combination of fruits and vegetables were only 16%.[16]

Based on Table 2, for the entire flyer, our study found that almost half (48.7%) of the food products promoted were 'discretionary' food while 'core' food only recorded 28.4%. This finding is in line with past research where 'discretionary' food was promoted more than 'core' food in 12 countries except for the Philippines and India.[13] The top 6 highest countries were Australia (41.2%), Hong Kong (61.7%), Malaysia (48.0%), South Africa (41.0%), United Kingdom (48.0%) and United States (48.3%). In supermarket flyers in Australia,[5] 'core' food was found to be less promoted (34.2%) compared to 'discretionary' food (43.3%) while 'alcohol' was promoted 8.5% and 'other' was promoted 14.0%. Moreover, the majority of 'discretionary' food (66.7%) was promoted compared to 'core' food (29.7%) on supermarket flyers in the Netherlands although the categorization of 'core' and 'discretionary' foods was different from this study method, whereby Dutch 'Guidelines for Food Choice 2011' was used.[18] In Brazil, ultra-processed foods (e.g. flavored yogurt, sugary drinks such as juices and sodas, sugary foods such as biscuits, chocolates, cereals, granola bars, cakes, and ice cream) showed the highest (63%) food advertised on supermarket flyers.[17] Energy-dense and nutrient-poor foods such as sweets, snacks, soft drinks, biscuits, cakes, sauces, ice cream, and desserts have dominated the food product advertisements in supermarket flyers which have proven to be the main driver of weight gain among consumers.[19]

There are several key strengths of this study. Previous research on the healthiness of Malaysia's food retail marketing environment was limited to one

hypermarket only and relied only on five flyers,[13] whereas this study included 3 different hypermarkets and 23 flyers, and compared food products in flyers during festive and non-festive seasons. The study also had important limitations. We focused only on food promotion on flyers in hypermarkets. Other food promotions in the hypermarket, such as in-store advertisements and price promotions, were not measured. While previous work has identified that the flyers are used to shape the products promoted in-store, future work could look more closely at in-store promotions, including the positioning (e.g. near checkouts, end of an aisle, island display) of advertised products. Future studies could also investigate the type of promotions (e.g. buy one get one free, 30% off) and the magnitude of price promotions on different food categories. While intra-rater reliability was tested and found to be strong, future work should aim to use two coders and apply the inter-rater reliability, and be more specific about product classification. The unavailability of a suitable food categorization scheme for Malaysia meant that this study used the food categorization of Australia. The classification scheme did not fully reflect the availability of food products in Malaysian hypermarkets. Future work could use other food classification systems, e.g. nutrient profiling models from WHO specific to the region. Nevertheless, this study provided baseline data for future studies looking at food promotion used among retailers in this country.

Conclusion

This study demonstrated that food products advertised on some hypermarket flyers in Malaysia are dominated by 'discretionary' foods. Efforts to improve population diets in Malaysia need to include a focus on restricting the marketing of unhealthy foods, including in hypermarkets and other retailers. Efforts to encourage food retailers in Malaysia to increase the promotion of healthy foods, and minimize the promotion of unhealthy foods, are likely to be beneficial to population health. However, implementing these changes would need a collaborative effort, between the government and the retail sector. Incentives such as tax relief could work to shift retailers' perspective on promoting more healthier food and this would eventually change consumer's food purchases and eating habits over time.

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Conflict of Interest

The author(s) do not have any conflict of interest.

Data Availability Statement

The datasets generated and analysed during the current study are available from the author on reasonable request.

Ethics Statement

This research did not involve human participants, animal subjects, or any material that requires ethical approval.

Informed Consent Statement

This study did not involve human participants, and therefore, informed consent was not required.

Clinical Trial Registration

This research does not involve any clinical trials.

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Author Contributions

- **Nur Faiqah Ezryn S Zahary:** Conceptualization, Data Collection, Interpretation, Analysis, Writing – Original Draft.
- **Gary Sacks:** Resources, Reviewing, Editing
- **Sameeha Mohd Jamil:** Conceptualization, Supervision, Reviewing, Editing.

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