Appetite 58 (2012) 227–233

Contents lists available at SciVerse ScienceDirect

Appetite

journal homepage: www.elsevier.com/locate/appet

Research report

Availability and accessibility of healthier options and nutrition information at New Zealand fast food restaurants ☆

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ARTICLE INFO

Article history:
Received 13 July 2011
Received in revised form 4 October 2011
Accepted 10 October 2011
Available online 13 October 2011

Keywords:
Healthy option
Nutrition information
Fast foods
Food labelling

ABSTRACT

The aim of this study was to assess the availability of healthier options and nutrition information at major New Zealand fast food chains. A cross-sectional survey was undertaken at 24 fast food stores (two from each of 12 major chains) using on-site visits, telephone calls, and website searches. Of available products, only 234/1126 (21%) were healthier options. Healthier options were generally cheaper and lower in energy, total fat, saturated fat, sugar, and sodium per serve than their regular counterparts. Regular options were commonly high in sugar or sodium per serve (mean sugar content of beverages = 56 g (11 teaspoons) and sodium content of burgers and pasta = 1095 mg and 1172 mg, respectively). Nutrition information was available at 11/12 (92%) restaurant chains (range = 0% at Tank Juice to 99% at Domino's Pizza). However, <1% of this information was available at the point-of-purchase. Therefore, there is huge potential for improving nutrition in the New Zealand fast food restaurant setting. Implications of these findings for policy and food industry include: consideration of mandatory menu labelling, increasing the percentage of healthier options available, and improving the nutrient content of regular options at New Zealand fast food restaurants.

Introduction

Poor diet is a risk factor for many of the leading causes of death in high income countries (Ezzati, Lopez, Rodgers, Vander Hoorn, & Murray, 2002). Therefore, governments internationally are urgently seeking strategies to improve population nutrition. In New Zealand, 11,000 deaths (40%) each year can be attributed to the joint effects of high cholesterol, high blood pressure, obesity, and inadequate fruit and vegetable intake (Stefanogiannis et al., 2005). These nutrition-related risk factors account for 70% or more of stroke and heart disease mortality and more than 80% of diabetes deaths (Stefanogiannis et al., 2005).

Food consumed away-from-the-home provides an increasing proportion of population diets globally, and provision of healthier options and nutrition information at restaurants is one potential strategy available to improve population health. New Zealanders currently purchase almost one third (32%) of their food from restaurants and ready-to-eat outlets, with this proportion of food spending increasing almost 10% over the past 3 years (2007–2010) (Statistics New Zealand, 2010). Compared with food consumed in the home, away-from-home food is generally energy dense and high in total and saturated fat (Allder, 2008; Eskin & Hermanson, 2004; Rosenheck, 2008; Smith et al., 2009; Wootan & Osborn, 2006). Moreover, frequent fast food eaters (i.e. those who eat fast food more than twice a week) are more likely to be overweight or obese than those who consume fast food only occasionally (Harnack et al., 2008).

No research has been undertaken in New Zealand assessing the availability of healthier options or nutrition information in restaurants. However, New Zealanders appear to be frequent label readers, with 82% of a weighted sample ($n = 1525$) of New Zealand supermarket shoppers reporting using nutrition labels on at least some occasions (Gorton, Ni Mhurchu, Chen, & Dixon, 2009); this compares with 48% of Americans who report using food labels to help them make healthier food choices (Krukowski, Harvey-Berino, Kolodinsky, Narsana, & DeSisto, 2006).

In 2008, the Preventative Health Taskforce in Australia and the UK government each recommended the reshaping of industry supply and consumer demand towards healthier products by increasing availability and access to healthier food (Preventative Health Taskforce, 2008), and making it easier for consumers to make healthier choices and be informed about eating outside of the home (The Strategy Unit, 2008). Nonetheless, despite research indicating that consumers feel fast food manufacturers are

☆ *Acknowledgements:* AC was supported by a Health Research Council of New Zealand summer studentship at the University of Auckland. HE holds a Heart Foundation of New Zealand Research Fellowship (Grant # 1463). CNM holds the Heart Foundation of New Zealand Senior Fellowship (Grant # 1380). The authors thank participating fast food stores.

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doi:10.1016/j.appet.2011.10.006

ethically required to provide a wide range of food choices, including healthy options (Schroder & McEachern, 2005), a recent Australian study found only 2.5% (n = 26) of fast food patrons (n = 1025) who purchased a main lunch meal at McDonalds or Subway over a 2 month period purchased a 'nutritionally' promoted item (Dietitians Association of Australia, 2011). This is in contrast to recent media in the United States reporting that purchases of healthier meals at fast food restaurants are on the rise (Horovitz, 2011).

Findings from international empirical research regarding the effectiveness of nutrition information to help consumers make healthier food purchases are mixed. A number of studies have investigated the effects of menu labelling on the food purchases of adults, with most indicating provision of nutrition information leads to a lower intent to purchase high energy items (Burton & Creyer, 2004; Burton, Creyer, Kees, & Huggins, 2006; Gerend, 2009; Kozup, Creyer, & Burton, 2003; Yamamoto, Yamamoto, Yamamoto, & Yamamoto, 2005). However, other studies have found that providing energy information on fast food menus has no effect on the energy composition of meals ordered, and may in fact lead to higher energy intake among certain population subgroups (Aron, Evans, & Mela, 1995; Harnack et al., 2008; Vadiveloo, Dixon, & Elbel, 2011).

Despite a lack of robust empirical evidence for the effectiveness of menu labelling, public health advocates generally consider this strategy an important component of a multi-faceted approach to improving obesity and population nutrition globally. As such, the Food and Drug Administration in the United States recently proposed that chain restaurants with 20 or more locations, along with bakeries, grocery stores, convenience stores, and coffee chains clearly post the calorie count for each item provided on their menus (United States Department of Health and Human Services, 2010). A similar Bill is currently being considered in the UK (Fast Casual Insights for Innovative Restaurants, 2010). However, in New Zealand, there has been no national strategy or consistent message regarding menu labelling until a recent (2011) review of food labelling law and policy commissioned by the Australia and New Zealand Food Regulation Ministerial Council (Blewett, Goddard, Pettigrew, Reynolds, & Yeatman, 2011). This review recommends the provision of nutrition information on menus/menu boards in chain service outlets that have standardised menu items, and on vending machines. There is currently a lack of context for this recommendation – no data exist on the frequency of menu labelling in New Zealand restaurants, nor on the availability of healthier options. The latter is particularly important; should menu labelling be enforced in New Zealand, consumers wishing to choose a healthier option based on information provided need to know whether such options exist. The aim of this study was to determine the availability and accessibility of healthier options and nutrition information at major New Zealand fast food restaurant chains.

Methods

Identification of major fast food chains

Fast food chains with 20 or more establishments nationwide were identified through the Franchise Association of New Zealand (Franchise Association of New Zealand, 2011) and Yellow Pages websites (a telephone directory of New Zealand businesses categorised according to the product or service provided) (Yellow Pages, 2011). Fast food chains were defined as: "*eating places where convenience food is purchased in self-service or carry out eating venues without wait service*" (Rosenheck, 2008). A 'hat-pick' method was used to randomly select two stores from each eligible fast food chain (within the wider Auckland area of New Zealand) for inclusion; two stores were deemed both feasible for data collection and acceptable as a representation of each restaurant chain. A cross-sectional survey was undertaken at each selected fast food store to collect data on the availability of healthier options and nutrition information.

Methods for the cross-sectional survey

Data were collected between December 2010 and January 2011 through on-site visits to each of the individual stores selected for inclusion in the study. Prior to on-site visits, telephone calls and website searches were undertaken to assess whether (or not) fast food chains claimed to provide healthier options and/or nutrient information.

In-store visits were undertaken at a range of times across the day (i.e. both morning and afternoon). This was because some stores had a breakfast menu that was only available until mid-morning. In such cases, one store visit was undertaken during breakfast hours and the second store visit was completed during normal menu hours (usually after 10am). This ensured that data were collected for all products available for sale at each fast food chain. Permission to collect data was obtained from store managers on arrival at each site. Data were collected manually onto a standardised data collection sheet. The following information was collected for all food and drink products for sale at each store: product name, healthier option (yes/no), availability of nutrition information (yes/no), format of available nutrition information (e.g. company website, pamphlet, tray liner/serviette, poster, food packaging, or menu board), serving size (g/mL), price ($NZ), and nutrient composition. Where the same product was available in multiple sizes, data for all product sizes were collected, although data for the standard/regular size were included in the analysis. Healthier options were defined as those promoted by the fast food store as 'healthier', 'lite', or similar, or as having a smaller portion size.

Product categorisation and statistical analysis

Data were entered directly from collection sheets onto a Microsoft Excel 2010 spreadsheet. Prior to analysis, products were categorised into 11 food groups based on a fast food categorisation system used for a similar study in Australia (Dunford, Webster, Barzi, & Neal, 2010): beverages (tea, coffee, juice, shakes, and soft-drinks), breakfast (muffins, pastries, waffles, bagels, and omelettes), burgers (warm bread bun with vegetarian or meat option), chicken (nuggets, chicken pieces, and wraps), desserts (ice-cream, cheesecake, chocolate, and hot puddings), pasta, pizza, salads, sandwiches (cold bread roll with vegetarian or meat option), seafood (e.g. crumbed fish), sides (fries, garlic bread, onion rings, coleslaw) and others (pies and single additions such as avocado, bacon, and cheese). Data were analysed in SPSS (version 19, 2010, IBM Corporation, NY). Nutrient values were assessed for normality by exploring the spread of the data and comparing estimates of central tendency (mean and median). A descriptive analysis was undertaken to determine: availability of healthier options (by chain and food category); price of healthier vs. regular options (per serving); nutrient composition of healthier vs. regular options (energy, total fat, saturated fat, sugar, and sodium per serve by food category); availability of nutrition information by chain and food group); and format of available nutrition information (e.g. tray liner, website etc.).

Results

Thirteen fast food chains were initially identified for inclusion. However, one (a sushi bar) declined to take part, and thus the remaining 12 chains (24 individual stores) were included in the

Table 1
Number of products (n = 1126) and availability of nutrition information (n = 608) at 12 major New Zealand fast food chains (by chain and food category).

Fast food chain	Food category												Total (n)	Nutrition information (n (%))
	Beverages (n = 267)	Breakfast (n = 57)	Burgers (n = 60)	Chicken (n = 62)	Desserts (n = 90)	Others (n = 18)	Pasta (n = 9)	Pizza (n = 445)	Salads (n = 23)	Sandwiches (n = 46)	Seafood (n = 6)	Sides (n = 43)		
Burger Fuel	14	–	15	6	2	–	–	–	–	–	–	3	40	10 (25)
Burger King	15	4	16	7	5	–	–	–	3	–	–	6	56	18 (32)
Burger Wisconsin	11	–	13	9	–	1	–	–	–	1	2	6	43	5 (12)
Domino's	7	–	–	–	4	–	4	140	–	7	–	5	167	166 (99)
Hell Pizza	15	–	–	1	6	–	5	64	5	–	–	11	107	29 (27)
KFC	20	–	7	11	3	–	–	–	3	–	–	4	48	39 (81)
McDonald's	21	11	9	17	8	–	–	–	2	–	1	2	71	59 (84)
Muffin Break	48	24	–	3	38	6	–	–	2	9	–	–	130	44 (34)
Pizza Hut	17	–	–	–	4	–	–	241	–	–	–	4	266	129 (48)
Starbucks	45	10	–	1	15	6	–	–	–	1	–	–	78	33 (42)
Subway	15	7	–	7	5	5	–	–	8	28	3	2	80	76 (95)
Tank Juice	40	–	–	–	–	–	–	–	–	–	–	–	40	0 (0)
Total	267	57	60	62	90	18	9	445	23	46	6	43	1126	608 (54)

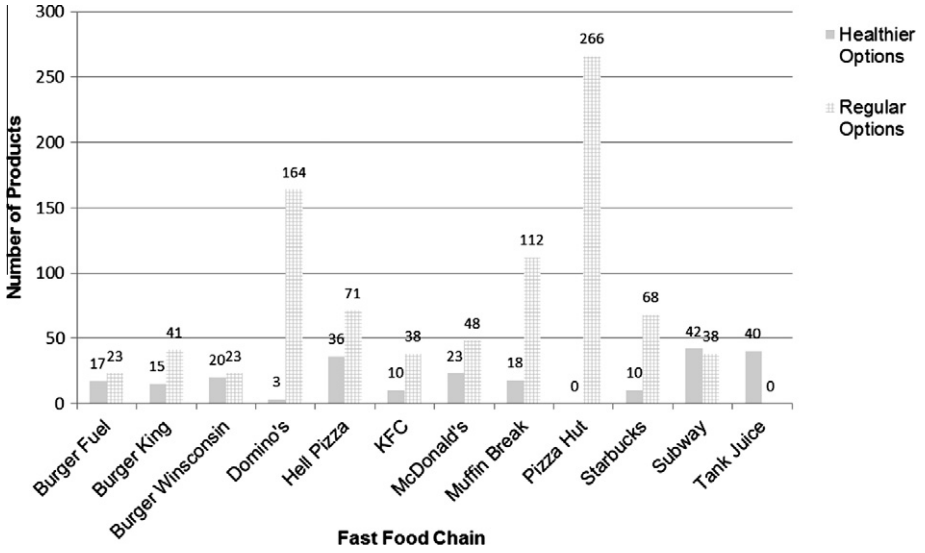

Fig. 1. Availability of healthier and regular options by fast food chain (n = 1126).

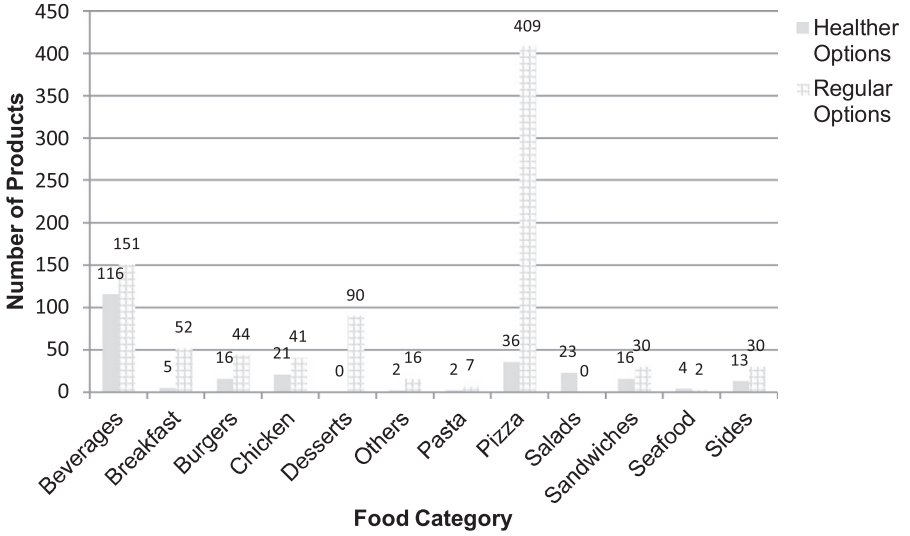

Fig. 2. Availability of healthier and regular options by food group (n = 1126).

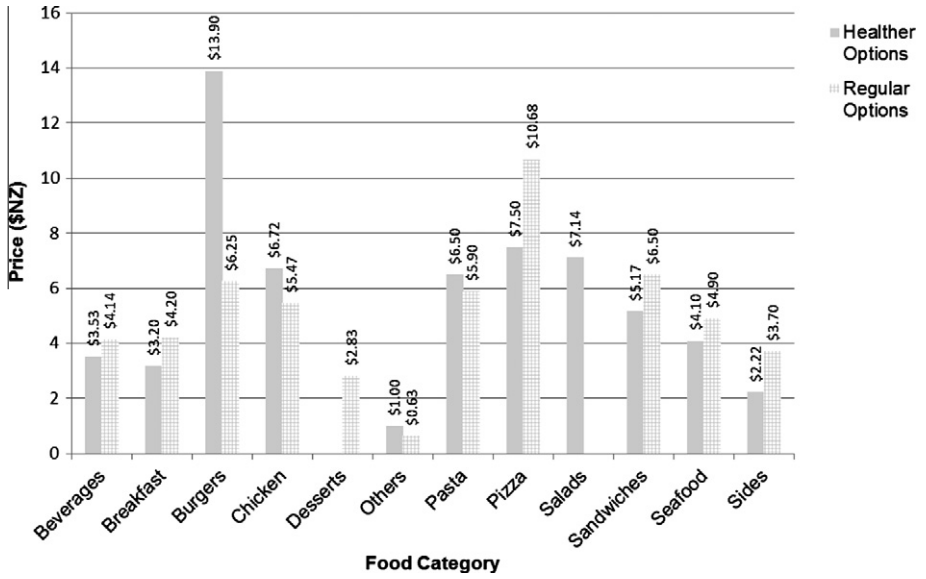

Fig. 3. Price per serve of healthier compared with regular options by food group ($n = 1126$).

current study (Table 1). Data were collected for a total of 1126 products across 12 food categories (Table 1). The number of products per category ranged from six for seafood to 445 for pizza.

Availability of healthier options

Similar products were promoted as healthier options across the two stores representing each fast food chain, although this was not necessarily the case across different outlets (particularly for beverages where low fat or diet options were not necessarily promoted as healthier). Of all products available in New Zealand fast food stores, only 234/1126 (21%) were healthier options. Fewer healthier compared with regular options were available at all fast food chains (Fig. 1; range from 0 at Pizza Hut to 42 at Subway). Examples of healthier options available for sale included: salads, low fat smoothies, small or healthier versions of burgers, wraps, and chicken nuggets (for example, Weight Watchers endorsed products at McDonalds and low fat sandwiches).

Fewer healthier compared with regular options were available in each fast food category (Fig. 2; range from zero for desserts to 116 for beverages). Categories with the least number of healthier options available were: breakfast, pasta, and seafood ($n = 5$, 2, and 4, respectively).

Price of healthier vs. regular options

With the exception of burgers, chicken, pasta, and others, healthier options were on average cheaper (per serve) than their regular counterparts (Fig. 3). However, there were no healthier options available in the desserts category. In contrast, no regular options were available in the salads category. An analysis of price per 100 g revealed similar findings: with the exception of beverages and breakfast items, healthier options were on average cheaper or of similar cost compared with their regular counterparts (data available on request).

Nutrient content of healthier vs. regular options

Nutrient information data were available for 608 (54%) of products (Table 1). Data for these 608 products are presented per serve in Table 2 to give an accurate representation of nutrients purchased per sitting and per consumer. However, more detailed data are available from the corresponding author on request. Data were found to be normally distributed for all nutrients and thus means and standard deviations are presented.

Energy content

For all food categories where healthier and regular options were available, healthier options were on average lower in energy (kJ per serve) than corresponding regular options (Table 2). For breakfast and side items, healthier options contained approximately half the energy content (kJ) of similar regular items (780 compared with 1490 kJ per serve and 614 compared with 1200 kJ per serve, respectively). The difference in energy content between healthier and regular options for all other food categories ranged from 23 kJ per serve to 2221 kJ per serve.

Total fat content

Overall, healthier options contained noticeably less total fat (per serve) than similar regular options (Table 2). Healthier breakfast items contained a mean (SD) of 2 (2) g total fat per serve compared with 15 (7) g for similar regular breakfast items. Healthier sandwiches contained approximately one quarter of the total fat content of regular 'sandwiches' items ((mean (SD)) = 5 (3) g and 17 (8) g per serve, respectively).

Saturated fat content

With the exception of seafood, for all food categories where healthier and regular options were available, healthier options on average contained substantially less saturated fat per serve than regular options (Table 2). The difference in saturated fat content between healthier and regular options ranged from <1 g per serve for others to 6 g per serve for sandwiches. Regular pasta, burgers and desserts had the highest mean (SD) saturated fat content per serve (12 (7) g (pasta), 11 (5) g (burgers), and 9 (7) g (desserts). Healthier beverages and others contained the lowest saturated fat per serve (<1 g).

Sugar content

Where comparisons were possible, sugar content varied between healthier and regular options ranging from 0 g per serve for healthier chicken to 44 g per serve for beverages. Mean (SD) sugar content was lower for healthier compared with regular options in some food categories (i.e. beverages, 12 (15) g/serve

Table 2
Nutrient content of products available at 12 major New Zealand fast food chains ($n = 608$)[b].

Food group[a]	Beverages ($n = 149$)		Breakfast ($n = 28$)		Burgers ($n = 17$)		Chicken ($n = 38$)		Desserts ($n = 29$)		Others ($n = 5$)		Pasta ($n = 4$)		Pizza ($n = 268$)		Salads ($n = 12$)		Sandwiches ($n = 35$)		Seafood ($n = 4$)		Sides ($n = 19$)	
	H	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*	*H*	*L*
Energy (kJ)	251 (312)	1229 (714)	780 (380)	1489 (619)	n/a	2221 (712)	1278 (434)	1743 (687)	n/a	1414 (797)	197	177 (12)	n/a	2360 (80)	n/a -	783 (144)	480 (206)	1801 (554)	1072 (290)	1801 (554)	1205 (247)	1390 (14)	613 (460)	1197 (896)
Total fat (g)	<1 (1)	8 (10)	2 (2)	15 (7)	n/a	28 (12)	10 (7)	20 (10)	n/a	16 (12)	4	3 (<1)	n/a	26 (5)	n/a	7 (2)	3 (2)	n/a	5 (3)	17 (8)	11 (6)	9 (<1)	7 (7)	19 (10)
Saturated fat (g)	<1 (1)	6 (7)	1 (1)	5 (3)	n/a	11 (5)	2 (<1)	6 (3)	n/a	9 (7)	<1	2 (<1)	n/a	12 (7)	n/a	4 (1)	1 (1)	n/a	2 (1)	8 (5)	3 (<1)	3 (<1)	1 (1)	6 (6)
Sugar (g)	12 (15)	56 (44)	21 (16)	17 (18)	n/a	7 (2)	7 (6)	7 (6)	n/a	32 (21)	0	<1 (2)	n/a	11 (4)	n/a	3 (1)	6 (4)	n/a	5 (2)	7 (3)	4 (1)	9 (2)	9 (9)	3 (3)
Sodium (mg)	51 (71)	12 (91)	112 (87)	499 (253)	n/a	1095 (303)	628 (310)	958 (360)	n/a	125 (988)	<1	195 (10)	n/a	1172 (443)	n/a	451 (109)	405 (229)	n/a	723 (209)	173 (526)	590 (81)	796 (39)	154 (166)	469 (414)

[a] Mean (SD); n/a (no products available in this category); *H* = healthier, *L* = less healthy.
[b] Nutrient data were only available for 608/1126 products included in the study.

vs. 56 (44) g/serve, sandwiches 5 (2) g/serve vs. 7 (4) g/serve, and seafood 4 (1) g/serve vs. 9 (2) g/serve; Table 2) but similar to regular options for other food categories (i.e. chicken, 7 (6) g/serve for both healthier and regular items; and Breakfast, 21 (16) g/serve vs. 17 (18) g/serve, respectively).

Sodium content

With the exception of sandwiches, the mean (SD) sodium content of healthier food products was lower than for regular products (Table 2). The 'breakfast' food category contained the biggest difference in sodium content between healthier and regular options (mean (SD) = 111 (87) mg/serve vs. 500 (254) mg/serve, respectively), while the seafood category contained the smallest difference (mean (SD) = 590 (81) mg/serve, vs. 790 (39) mg/serve, respectively).

Availability of nutrition information

All fast food chains except Tank Juice provided nutrition information for at least some of their product range (range = 0% for Tank Juice to 99% of products for Domino's; Fig. 4). Nutrition information was available for the majority of products available at KFC, McDonald's, and Subway (81%, 84%, and 95%, respectively). In contrast, nutrition information was available for 25% or fewer products at Burger Fuel (25%), Burger Wisconsin (12%), and Tank Juice (0%). Nutrition information was available for slightly more regular compared with healthier options (60% vs. 43%, respectively).

Format of available nutrition information

Of all available nutrition information, 64% was presented on company websites, 17% on food packaging, 8% on the tray liner or serviettes, 8% on in-store pamphlets, and <1% on the menu board.

Discussion

This study found huge potential for improving nutrition in the New Zealand fast food restaurant context. Although healthier options are available, they only comprise approximately one in five of all products offered across all major fast food chains and food categories. Nevertheless, healthier options that were available were on average cheaper and nutritionally healthier than their regular counterparts (per serve). Overall, availability of nutrition information was good, although the majority (99%) of information provided was not presented at the point-of-purchase and thus unlikely to play a role in fast food purchasing decisions (Pulos & Leng, 2010). Furthermore, evidence suggests that restaurant patrons rarely refer to nutrition information available on company websites or on wall posters and pamphlets provided in store (Dumanovsky, Huang, Bassett, & Silver, 2010; Pulos & Leng, 2010).

An important strength of this study is that it encompassed all major fast food restaurants (with 20 or more establishments), and thus the findings should be broadly generalizable to the fast food setting in New Zealand. However, the cross-sectional survey design was limited in that it relied on information at one particular point in time (December 2010–January 2011). Furthermore, only two stores from each major fast food chain within the wider Auckland area of New Zealand were visited, and collected information may not have been representative of all stores of that particular chain nationwide. However, it is unlikely that the findings would have differed significantly should a larger number of stores have been surveyed over a longer period of time.

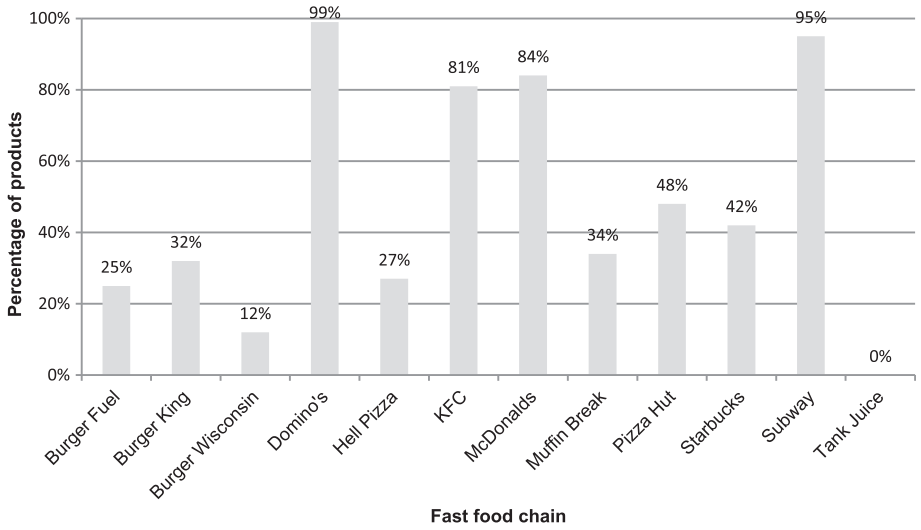

Fig. 4. Availability of nutrition information by fast food chain (n = 1126).

A notable limitation of this study is that one major chain with a potentially large number of healthy options (a sushi bar) declined to take part. Should data from this chain have been included in this study, the number of healthier options available at New Zealand fast food restaurants would likely have been greater. Nonetheless, this was only one of 13 major fast food chains and thus any effect on findings would have minor implications for real-world consumer food choices. Another potential limitation is the subjective definition used for healthier options i.e. those promoted as such by fast food manufacturers. Although these data demonstrate promoted healthier options are in fact healthier than their regular counterparts, a more objective definition of healthy (for example, as determined using a nutrient profiling model) may have altered study findings (particularly for beverages where low fat and diet options were not always promoted as healthier choices). Finally, where the same product was available in multiple sizes, the standard/regular size was included in the analysis. This was unlikely to have substantially affected the proportion of healthier options available. However, inclusion of large package sizes in the price analysis may have affected the findings because large products are often relatively cheaper than their smaller counterparts.

The findings of this study are consistent with those of others assessing the availability of healthier options and nutrient content at fast food restaurants (Dunford et al., 2010; Saelens, Glanz, Sallis, & Frank, 2007). For example, in the United States, a survey of the nutrition environment of 102 fast food restaurants was undertaken in 2004 (Saelens et al., 2007). This study found a small proportion of healthy entrees and main dish salads on the menu were healthier options (9% and 3%, respectively). Small portion sizes were available for 2% of products. In contrast to the findings of the current study, healthier entrées were more expensive than their less healthy counterparts. However, similar to current study findings (<1%), nutrition information was provided on the menu-board for only 7% of products. In Australia, Dunford and colleagues (2010) completed a systematic survey of Australian fast food menu products in 2009. Nine of 15 fast food chains that provided nutrition information on their websites were included (n = 584 products). The authors found the majority of fast food products did not meet UK Food Standards Agency nutrient criteria for healthy options (Food Standards Agency, 2007), and there was substantial variation in nutrient levels between similar products (at least two fold variations were found for all product categories in energy, total fat, saturated fat, and sugar) (Dunford et al., 2010). Finally, a survey of the nutritional content and cost of menu items available at major fast food chains (n = 15) in the United States was undertaken by the Yale Rudd Centre for Food Policy in 2010 (Yale Rudd Center for Food Policy and Obesity, 2010). Across all fast food chains, only 7% of menu items available were found to be designated healthier options, and although a chicken salad was more expensive than other main dishes, consistent with the current research, healthier options within food categories were generally cheaper than their regular counterparts.

The findings of this study set the context for potential policy and positive action by New Zealand fast food manufacturers. Although healthier cost-effective options were found to be available at most fast food chains and for most food groups, the number of healthy options available overall is small (21%). Furthermore, although nutrition information was found to be widely available, it is generally not presented at the point-of-purchase. There needs to be policy changes made in how fast food outlets present nutrition information. Mandatory food labelling on standardised menus and menu boards needs to be implemented, with information easy to read and informative. Furthermore, the range of healthier options needs to increase so consumers have a variety of choices available to them and existing regular options should be reformulated to improve their nutrient composition. Future studies including a greater number of fast food stores and addressing the availability of healthier options and nutrition information across high vs. low levels of deprivation would be useful for addressing health inequalities.

Author contributions

AC was responsible for collecting and analysing the data, interpreting the results, and drafting the manuscript; HE and CNM were responsible for the conception and design of the study and for reviewing the manuscript.

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