Supersize the label

The effect of prominent calorie-labelling on sales

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Abstract:

Calorie-labelling has been suggested as an anti-obesity measure but evidence on its impact is scarce and formatting guidance not well-defined. This study tested the impact of prominent calorie-labelling on sales of the labelled items. Prominent calorie labels were posted in front of two popular items for a period of a month. Sales were recorded for two consecutive months, prior to and during labelling. Muffins sales (the higher calorie-item) fell by 30% while sales of scones rose by 4%, a significant difference (X^2 = 10.258, p=0.0014). Calorie-labelling is effective when noticed. Wider-adoption of calorie-labelling for all food-business and strengthening legislation with formatting guidelines should be the next step in public health policy.

Introduction:

Obesity prevalence has been increasing along with more meals eaten out of home[1]. Food is high in calories, fat, and sodium in both chain[2] and independent[3] restaurants. Calorie-labelling has been proposed as an obesity-prevention measure, now compulsory for larger chains under the US Affordable-Care-Act[4], and voluntary under the UK 'Responsibility-Deal'[5]. Current evidence shows that calorie-labelling, overall, does not lead to any reduction in calories bought/chosen. However, the labels used to date have been small and noticed only by a 30% minority: those consumers who notice calorie-labels choose meals and snacks with 124 fewer kcal /purchase[6]. Guidance in the US Affordable-Care-Act on calorie labelling formatting state that caloric value should be the same font size as the price or the food name whichever is the smallest. The present study examined the effect of prominent calorie-labels on sales of specific very popular food items.

Calorie-labelling in catering outlets: a natural experiment

Prominent, colourful, laminated calorie-labels, size 29×26 cm (**Appendix 1**) were posted for two popular sweet coffee-house food-items with large a calorie-difference (scone=145-160kcal, muffin=492-576kcal), displayed in adjacent baskets at the cash-point in an independent café in spring 2014. The independent café was based within the library of a large university in the UK. Customers included university students and staff. Customers had direct access to the items that were calorie-labelled while other food items on sale where placed at the back of the café and customers had to ask the staff to fetch them for them. Calorie-labels were posted for four weeks, directly in front of those items. Chi-square tests were used (SPSS 21, Chicago) to test for differences in sales data, provided by the caterers, for four-week periods before and during calorie-labelling, in March and April 2014.

During the April four-week calorie-labelling period, which included the Easter holiday break, total sales of all food-items fell by 23% (**Table 1**). Sales of muffins and scones, combined, fell similarly by 24%. However, when analysed separately, sales of muffins (the higher calorie-item) fell by 30% while sales of scones rose by 4%, a significant difference ($X^2 = 10.258$, $p=0.0014$).

The effect of supersizing the calorie-labelling label

Given its epidemic status, there is urgent need for effective anti-obesity measures. Calorie-labelling received strong opposition from restaurant associations when first suggested as a tool against obesity. The present study provides evidence that prominent calorie-labelling can 'nudge' customers towards less calorific choices between comparable items. Total sales of all food-items fell 23-24% from March to April. Even if it is tempting to suggest that our calorie-labelling activity had raised awareness and prompted reductions in all foods perceived as 'fattening', the Easter break which occurred during our intervention could also been a reason for observing a total reduction of 23-24% of the sales of all food items in the café. However, when we analysed separately the calorie-labelled items, there was clearly an effect from calorie-labelling, with a striking 30% downward shift in sales of the higher-calorie muffins while the lower-calorie scones were essentially unchanged. This finding adds to results from a controlled trial which reported a 30% reduction in sales of high-calorie items with similarly prominent calorie-labels in intervention sites[7]. The key appears to be prominence and visibility of labels. Currently, where calorie-labelling is required the information must be presented in the same font size as the price. We used labels with a font size almost ten-fold larger than is currently used in chain restaurants, and in a very prominent position adjacent to the items. This principle also pertains to generating behavioural change among smokers. The cigarette pack is the most cost-

effective communication medium for health-messages, provided that a large font, covering >30% of the package area is used[8].

We cannot claim from our results that choices to avoid higher-calorie muffins, in favour of scones, were all made by customers with weight problems. However with 60-70% of all adults overweight or obese in US and Europe, it seems reasonable to propose that this very low-cost intervention should be applied widely as part of anti-obesity strategies[9] and work with catering facilities to overcome any obstacles that might discourage them from posting calorie information and tackle any inequalities[10,11]. Calorie-labelling seems to be effective when noticed. Wider adoption of calorie-labelling for all food business and strengthening legislation with guidelines on formatting should be the next step in public health policy.

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Table 1: Monthly sales before and during the calorie-labelling period (Data collected in 2014 and analysed in 2014)

	Before Calorie-labelling	**During Calorie-labelling**	**Change (%)**
All sweet food items	5941	4564	-23
Muffins & Scones combined	863	654	-24
Muffins	704	489*	-30
Scones	159	165*	+4

* muffins vs scones $X^2 = 10.258$, $p=0.0014$

Appendix

Figure 1: Sample of the calorie-label used for labelling the muffins and scones during the intervention (April 2004).

Highlights

- Obesity prevention is the next rational step in tackling the obesity epidemic
- Prominent calorie-labelling could help customers to choose lower calorie food items
- Calorie-labelling seems to be effective when noticed
- Calorie-labelling should be part of anti-obesity strategies along with guidelines on its formatting