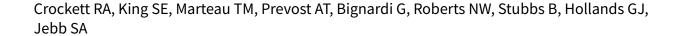


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Nutritional labelling for healthier food or non-alcoholic drink purchasing and consumption (Review)



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[Intervention Review]

Nutritional labelling for healthier food or non-alcoholic drink purchasing and consumption

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Editorial note: This review question is now being addressed according to a new protocol, published 11 June 2021: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD014845

For this review, the authors are narrowing the focus to energy labelling, as well as broadening the range of target products to include alcoholic drinks, reflecting recent policy interest in energy labelling on alcohol products.

ABSTRACT

Background

Nutritional labelling is advocated as a means to promote healthier food purchasing and consumption, including lower energy intake. Internationally, many different nutritional labelling schemes have been introduced. There is no consensus on whether such labelling is effective in promoting healthier behaviour.

Objectives

To assess the impact of nutritional labelling for food and non-alcoholic drinks on purchasing and consumption of healthier items. Our secondary objective was to explore possible effect moderators of nutritional labelling on purchasing and consumption.

Search methods

We searched 13 electronic databases including CENTRAL, MEDLINE and Embase to 26 April 2017. We also handsearched references and citations and sought unpublished studies through websites and trials registries.



Selection criteria

Eligible studies: were randomised or quasi-randomised controlled trials (RCTs/Q-RCTs), controlled before-and-after studies, or interrupted time series (ITS) studies; compared a labelled product (with information on nutrients or energy) with the same product without a nutritional label; assessed objectively measured purchasing or consumption of foods or non-alcoholic drinks in real-world or laboratory settings.

Data collection and analysis

Two authors independently selected studies for inclusion and extracted study data. We applied the Cochrane 'Risk of bias' tool and GRADE to assess the quality of evidence. We pooled studies that evaluated similar interventions and outcomes using a random-effects meta-analysis, and we synthesised data from other studies in a narrative summary.

Main results

We included 28 studies, comprising 17 RCTs, 5 Q-RCTs and 6 ITS studies. Most (21/28) took place in the USA, and 19 took place in university settings, 14 of which mainly involved university students or staff. Most (20/28) studies assessed the impact of labelling on menus or menu boards, or nutritional labelling placed on, or adjacent to, a range of foods or drinks from which participants could choose. Eight studies provided participants with only one labelled food or drink option (in which labelling was present on a container or packaging, adjacent to the food or on a display board) and measured the amount consumed. The most frequently assessed labelling type was energy (i.e. calorie) information (12/28).

Eleven studies assessed the impact of nutritional labelling on purchasing food or drink options in real-world settings, including purchases from vending machines (one cluster-RCT), grocery stores (one ITS), or restaurants, cafeterias or coffee shops (three RCTs, one Q-RCT and five ITS). Findings on vending machines and grocery stores were not interpretable, and were rated as very low quality. A meta-analysis of the three RCTs, all of which assessed energy labelling on menus in restaurants, demonstrated a statistically significant reduction of 47 kcal in energy purchased (MD –46.72 kcal, 95% CI –78.35, –15.10, N = 1877). Assuming an average meal of 600 kcal, energy labelling on menus would reduce energy purchased per meal by 7.8% (95% CI 2.5% to 13.1%). The quality of the evidence for these three studies was rated as low, so our confidence in the effect estimate is limited and may change with further studies. Of the remaining six studies, only two (both ITS studies involving energy labels on menus or menus boards in a coffee shop or cafeteria) were at low risk of bias, and their results support the meta-analysis. The results of the other four studies which were conducted in a restaurant, cafeterias (2 studies) or a coffee shop, were not clearly reported and were at high risk of bias.

Seventeen studies assessed the impact of nutritional labels on consumption in artificial settings or scenarios (henceforth referred to as laboratory studies or settings). Of these, eight (all RCTs) assessed the effect of labels on menus or placed on a range of food options. A meta-analysis of these studies did not conclusively demonstrate a reduction in energy consumed during a meal (MD -50 kcal, 95% CI -104.41, 3.88, N = 1705). We rated the quality of the evidence as low, so our confidence in the effect estimate is limited and may change with further studies.

Six laboratory studies (four RCTs and two Q-RCTs) assessed the impact of labelling a single food or drink option (such as chocolate, pasta or soft drinks) on energy consumed during a snack or meal. A meta-analysis of these studies did not demonstrate a statistically significant difference in energy (kcal) consumed (SMD 0.05, 95% CI –0.17 to 0.27, N = 732). However, the confidence intervals were wide, suggesting uncertainty in the true effect size. We rated the quality of the evidence as low, so our confidence in the effect estimate is limited and may change with further studies.

There was no evidence that nutritional labelling had the unintended harm of increasing energy purchased or consumed. Indirect evidence came from five laboratory studies that involved mislabelling single nutrient content (i.e. placing low energy or low fat labels on high-energy foods) during a snack or meal. A meta-analysis of these studies did not demonstrate a statistically significant increase in energy (kcal) consumed (SMD 0.19, 95% CI –0.14to 0.51, N = 718). The effect was small and the confidence intervals wide, suggesting uncertainty in the true effect size. We rated the quality of the evidence from these studies as very low, providing very little confidence in the effect estimate.

Authors' conclusions

Findings from a small body of low-quality evidence suggest that nutritional labelling comprising energy information on menus may reduce energy purchased in restaurants. The evidence assessing the impact on consumption of energy information on menus or on a range of food options in laboratory settings suggests a similar effect to that observed for purchasing, although the evidence is less definite and also of low quality.

Accordingly, and in the absence of observed harms, we tentatively suggest that nutritional labelling on menus in restaurants could be used as part of a wider set of measures to tackle obesity. Additional high-quality research in real-world settings is needed to enable more certain conclusions.

Further high-quality research is also needed to address the dearth of evidence from grocery stores and vending machines and to assess potential moderators of the intervention effect, including socioeconomic status.



PLAIN LANGUAGE SUMMARY

Nutritional labelling to promote healthier consumption and purchasing of food or drinks

A poor diet including excessive energy intake is an important cause of ill health. Nutritional labelling may help people to make healthier food choices.

What is the aim of this review?

This review investigated whether nutritional labels (i.e. labels providing information about nutritional content) persuade people to buy or consume different (healthy) kinds of food. We searched for all available evidence to answer this question and found 28 studies.

Key messages

There is evidence to suggest that nutritional labelling, with energy information (e.g. calorie counts) on menus, may reduce energy purchased in restaurants, but more high-quality studies are needed to make this finding more certain.

What was studied in the review?

Some studies assessed buying food or drinks from vending machines, grocery stores, restaurants, cafeterias, or coffee shops. Others assessed the amount of food or drink consumed during a snack or meal in an artificial setting or scenario (referred to as laboratory studies or settings).

What are the main results of the review?

Nutritional labelling on restaurant menus reduced the amount of energy (i.e. calories) purchased, but the quality of the three studies that contributed to this finding was low, so our confidence in the effect estimate is limited and may change with further studies. Eight studies assessed this same type of intervention in laboratory settings, but instead of evaluating how much energy participants purchased, these studies evaluated how much energy participants consumed. These studies did not conclusively demonstrate a reduction in energy consumed when menus or foods were labelled, and they were also of low quality.

In addition, six laboratory studies assessed how much energy participants consumed when they were given one food or drink option with or without labels, and five laboratory studies assessed how much energy participants consumed when foods were experimentally labelled as low energy or low fat when they were actually high-energy foods (i.e. mislabelling). Results from these two groups of studies were inconclusive and of low, or in the case of mislabelling studies, very low quality. We found some studies that assessed labelling on vending machines and grocery stores, but their results were not easy to interpret, so we could not use them to inform this review.

How up-to-date is this review?

The evidence is current to 26 April 2017.