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Research report

Inferring product healthfulness from nutrition labelling. The influence of reference points ☆

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ABSTRACT

Despite considerable research on nutrition labelling, it has proven difficult to find a front-of-pack label which is informative about product healthfulness across various situations. This study examines the ability of different types of nutrition labelling schemes (multiple traffic light label, nutrition table, GDA, logo) to communicate product healthfulness (a) across different product categories, (b) between options from the same product category, and (c) when viewed in isolation and in comparison with another product. Results of two experiments in Germany and The Netherlands show that a labelling scheme with reference point information at the nutrient level (e.g., the traffic light label) can achieve all three objectives. Although other types of labelling schemes are also capable of communicating healthfulness, labelling schemes lacking reference point information (e.g., nutrition tables) are less effective when no comparison product is available, and labelling schemes based on overall product healthfulness within the category (e.g., logos) can diminish consumers' ability to differentiate between categories, leading to a potential misinterpretation of product healthfulness. None of the labels affected food preferences.

Introduction

Nutrition labelling holds important potential in enabling consumers to identify food products that are in line with their dietary needs, and helping them assess a product's healthfulness. Front-of-pack nutrition labels have become a prominent tool in many countries (Storcksdieck genannt Bonsmann et al., 2010) and an important topic of consumer research (Campos, Doxey, & Hammond, 2011; Cowburn & Stockley, 2005; Drichoutis, Lazaridis, & Nayga, 2006; Grunert & Wills, 2007; Hieke & Taylor, 2012; Storcksdieck genannt Bonsmann & Wills, 2012; Vyth et al., 2012). Four types of labelling schemes have been applied, all based on important nutrients: salt, (added) sugars, and fat (total, saturated and/or trans-fat). The Nutrition Table (NT, also known as the Nutrition Information Panel (NIP)) communicates nutrient content levels in absolute values, per 100 g or per portion size. The Guideline Daily Amounts (GDA) label provides the same information, but additionally expressed as a percentage of proposed daily reference quantities within one's total diet. The Multiple Traffic Lights (MTL) label indicates whether nutrient values are considered low, medium or high, supported by traffic light colours (green, amber or red). Finally, several signpost logos have been implemented, such as the Swedish Keyhole logo, the Choices logo, the Smart Choice (US), and Pick the Tick (Australia and New Zealand). These do not communicate precise nutrient content levels, but flag products that qualify against *a priori* defined maximum levels across certain nutrients and energy.

Previous research has focused on a host of issues regarding front-of-pack nutrition labelling, related to consumer attention for such labels (Van Herpen & Van Trijp, 2011), consumer preferences for and understanding of labelling schemes (Feunekes, Gortemaker, Willems, Lion, & Van den Kommer, 2008; Grunert, Fernández-Celemín, Wills, Storcksdieck, & Nureeva, 2010), and the effect on healthful product choices or consumption (Temple, Johnson, Archer, LaCarte, & Yi, 2011; Vyth et al., 2010). Of particular importance is whether nutrition labels achieve their main objective, to communicate the relative healthfulness of products in a way that is transparent and meaningful to the consumer. Ideally, such transparency should be provided at three levels. First, at a food category level, nutrition labels may help identify healthier from less healthful categories. Additionally, within each category,

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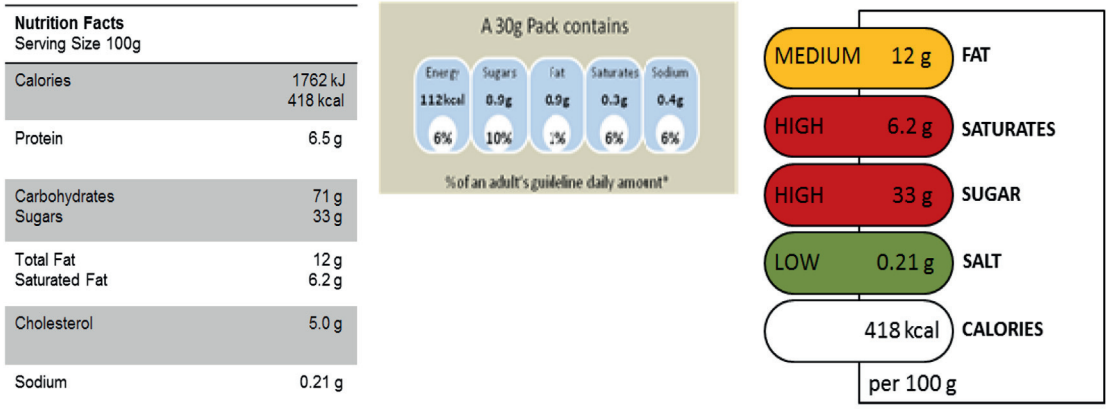
nutrition labels should help identify the relative healthfulness of different products. Finally, this transparency should ideally extend beyond the comparative environment, that is, labels should trigger appropriate healthfulness perceptions for any product judged in a stand-alone situation.

These levels of transparency have not obtained equal attention in labelling literature. In particular, prior studies have typically examined health inferences by exposing participants to products from the same product category and asking them to identify the most healthful option, as shown in the literature review of Hawley et al. (2012). In addition to these differences within categories, to our knowledge, no study has examined if nutrition labels help distinguish more from less healthful product categories, which is what the current study aims to do. Furthermore, prior studies have presented products for which healthfulness perceptions are solicited either one-by-one in isolation (Roberto et al., 2012) or as part of a choice set (McLean, Hoek, & Hedderly, 2012), and the current study will investigate the extent to which different labelling schemes are able to communicate the healthfulness of products in both situations.

In a reference point framework, we follow Viswanathan (1994: p. 49) who argues that "numerical [nutrient content] information lacks meaning by itself and has to be compared with other information to be interpreted meaningfully". In other words, reference point information is essential for processing numerical nutrition information (Visschers & Siegrist, 2009; Viswanathan & Hastak, 2002). Such reference point information may be implicit in the labelling scheme, derived from comparison to other products within the product assortment context in which the label appears, or absent, in which case the consumers' prior nutritional

Examples of the nutrition labelling schemes used in Study 1[a] :

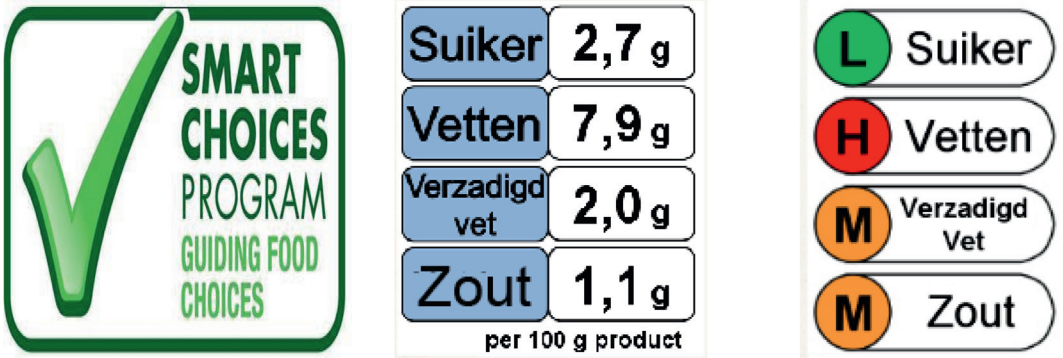
Nutrition Table (NT)	*% GDA*	*Multiple Traffic Lights (MTL)*



[a] Font size was the same on all three labels used. This was ensured on-screen, during the study, but may be distorted in this figure.

Examples of the nutrition labelling schemes used in Study 2[b] :

Signpost logo	*Nutrition Table (NT)*	*Multiple Traffic Lights (MTL)*



[b] Font size was the same for NT and MTL. Product and label sizes were identical across joint and isolated exposure.

Fig. 1. Nutrition labelling schemes.