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Nutritional warnings and product substitution or abandonment: Policy implications derived from a repeated purchase simulation

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ABSTRACT

Nutritional warnings have been recently proposed as an interpretative front-of-package nutrition labelling scheme to highlight unhealthful products. This scheme is particularly relevant in food markets characterized by a high availability of processed products with unfavourable nutrient profile. However, it remains unclear to what extent, how and under which circumstances warnings on food packages can change consumers' food choices. The present study aimed at evaluating the influence of nutritional warnings on consumers' purchase decisions by exploring within-category product substitution or abandonment of the category, as well as to identify consumer groups that differ in reaction to the warnings. A repeated purchase simulation was conducted with 395 Uruguayan consumers. Participants were asked to complete two successive choice-tasks with eight product-categories. Results showed that warnings modified the choices of approximately half of the participants. Within-category product substitution was the most common change in participants' choices. However, abandonment was the dominant effect in categories for which all products included at least one warning. Consumers reacting more strongly to the warnings were characterized by greater health motivation. These results confirm the potential of nutritional warnings to encourage consumers to make more healthful choices, point to the market potential of reformulated products, and stress the need for policy makers to increase consumer's health motivation.

1. Introduction

Obesity and non-communicable chronic diseases (NCD) have turned into public health problems of a worrisome extent worldwide (World Health Organization, 2014). Sedentary lifestyle and changes in the global food system are regarded as major drivers of this situation. The availability and affordability of processed, energy-dense food has increased worldwide (Monteiro, Cannon, Levy, Claro, & Moubarac, 2012; Swinburn et al., 2011). In particular, the increased consumption of ultra-processed products with excessive sugar, fat and salt content has paralleled the rise in obesity prevalence, particularly in Latin American countries (Baker & Friel, 2016; Monteiro, Levy, Claro, de Castro, & Cannon, 2011; Pan American Health Organization, 2015). For this reason, public policies aimed at reducing consumption of these products have the potential to mitigate the current worldwide 'epidemic' of obesity and NCD (Caballero, 2007).

A broad range of public policies have been proposed to achieve this aim. These include market regulations and advertising restrictions, positive and negative economic incentives for food companies or consumers such as tax differentiations, and measures to encourage people to make more healthful food choices via information provision and social marketing approaches (Capacci et al., 2012; Scrininis & Parker, 2016). Economic theory suggests that functioning markets should result in the best outcomes for consumers, unless the market fails to provide them with the information needed. Therefore, information provisioning for informed choice is typically regarded as the core policy, not least because it also receives high consumer acceptance (Mazzocchi et al., 2015). However, as information is not sufficient for tackling the problem of healthy eating, the combination with policies aimed at raising awareness, motivation, and perceived capability is recommended (Capacci et al., 2012). Considering that standard nutrition information has not been effective in changing eating patterns, simplified front-of-

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package (FOP) nutrition information is regarded as a helpful accompanying tool more likely to be noticed and understood by consumers, and thus more likely to influence their food choices.

1.1. FOP nutritional warnings

Both simple health logos and more detailed FOP nutrition labelling have received growing attention as a tool to provide quick and easily understandable visual cues that empower consumers to identify unhealthy food products and trigger more healthful food choices (Hawley et al., 2013; Scrinis & Parker, 2016). Different FOP nutrition labelling schemes have been developed, which differ in the extent to which they assist consumers in making healthfulness judgements (Hodgkins et al., 2012). In particular, nutritional warnings have been recently proposed as an interpretative FOP nutrition labelling scheme to clearly communicate product unhealthfulness due to an excessive content of key nutrients (e.g. sugar, fat and sodium) (Corvalán, Reyes, Garmendia, & Uauy, 2013). This scheme seems particularly relevant in a food environment characterized by the wide availability of processed and ultra-processed products with unfavourable nutritional composition, as is the case of the Latin American region (Monteiro et al., 2012; Pan American Health Organization, 2016).

Warnings have so far been implemented in Chile (Ministerio de Salud, 2015) and have been reported to be superior to the traffic-light system in terms of goal-directed attention and ability to decrease healthfulness perception of ultra-processed products, and to discourage choice of unhealthy products (Arrúa, Curutchet, et al., 2017; Arrúa, Machín, et al., 2017). Warnings go into the exact opposite direction of health logos, as they only highlight unhealthy products with the intention of discouraging their consumption. Health logos are typically given to the relatively more healthful products within a category, but this might result in a situation where they promote processed products that in absolute terms are regarded as unhealthy if rigorous standards are not used (Nestle & Ludwig, 2010). Warnings therefore overcome the main disadvantage of health logos. In addition, warnings may provide incentives to the industry to improve and reformulate their products across the assortment, instead of only for certain items for which the company desires to achieve a health logo.

Despite the advantages of nutritional warnings as a FOP nutritional labelling scheme, research on their ability to shift consumers' food choices is still limited. It thus remains unclear if the inclusion of nutritional warnings on food packages would lead to changes in consumers' in-store food choices. Exploring this more in-depth is crucially important for policy makers in further countries considering to adopt a similar approach as in Chile, in particular in light of the high rates of obesity and overweight in the Latin American region (Pan American Health Organization, 2015; Organización de las Naciones Unidas para la Alimentación y la Agricultura & Organización Panamericana de la Salud, 2017). As a first step, the present research focuses on the influence of nutritional warnings on consumers' food choices in a hypothetical choice situation.

1.2. Effect of FOP nutritional warnings on in-store purchase behaviour

The great majority of in-store food choices can be regarded as habitual behaviour. Consumers minimize the cognitive effort needed for making their food choices by repeatedly selecting the same product, or by following well-known cues such as a familiar brand (Frewer & van Trijp, 2007; van't Riet, Sijtsma, Dagevos, & De Bruijn, 2011). However, contextual cues observed in the moment of food choice can be potentially useful to trigger changes in consumers' habitual purchase behaviour (Verplanken & Wood, 2006). In this sense, the inclusion of nutritional warnings on food packages can trigger changes through two potential effects. Firstly, alter the healthfulness perception of the food in question in acting as a cue to a judgement, and secondly, activate

health-related goals in the situation, and thus encourage consumers to select more healthful products (Payne, Bettman, Coupey, & Johnson, 1992). In this sense, existing empirical research has shown that warning labels influence consumer behaviour, particularly in the case of familiar products (Argo & Main, 2004).

It can be hypothesized that there should be two main groups of consumers reacting differently to the inclusion of warnings on food packages: one of the groups would continue to purchase their usual products, whereas consumers in the other group would modify their purchases and increase the healthfulness of their diet, likely characterized by greater health motivation. The relative share of these two groups determines the effectiveness of warnings to improve the health status of the population.

More specifically, a FOP labelling scheme such as the warnings can encourage consumers of the second group to change their unhealthy food choices to more healthful food choices in two different ways. The first type of change consists of substituting their usual product by a more healthful product within the category, which contains fewer or no warnings. The other change in purchase behaviour, however, would be abandonment of the category and replacement by a more healthful product from a different category. If the cognitive effort required for finding a product in a different category is higher than substituting products within the category – which should be easier when there is a product without warnings –, it can be hypothesized that within-category product substitution will be more likely to occur. In turn, category abandonment ought to be more widespread for product categories in which no healthful products are available (because the category's characteristics are rather unhealthy overall), and no food producer has yet any innovation in offer that does not need to carry a warning. Therefore, the influence of warnings on consumers' decision will depend on the product category and the nutritional characteristics of the products available within each category.

Understanding how consumers react to the implementation of warnings overall and for specific food categories is a key insight for evaluating the impact of FOP warnings on consumer health and the economic market dynamic when introducing such a scheme. The identification of consumer segments with a different likelihood of changing their choices after the implementation of the warnings can contribute to the development of targeted communication strategies, which can effectively influence consumer purchase behaviour (Mørk, Grunert, Fenger, Juhl, & Tsalis, 2017). Previous research has shown that health motivation is the main determinant of nutrition information use (Cavaliere, De Marchi, & Banterle, 2017; Grunert, Celemin, Storcksdieck genannt Bonsmann, & Wills, 2012; Visschers, Hartmann, Leins-Hess, Dohle, & Siegrist, 2013). In addition, socio-economic and attitudinal variables are expected to modulate the effect of nutritional warnings on food choice (Balcombe, Fraser, & Di Falco, 2010; Cowburn & Stockley, 2005).

1.3. Study objectives

The present study aimed at studying the influence of nutritional warnings on consumers' purchase decisions and consumer differences in reacting to warnings. In particular, focus was given to evaluating whether the inclusion of nutritional warnings on food packages would lead to either within-category product substitution or abandonment of the category. A repeated purchase simulation was implemented to address the following three research questions (RQ): 'Are consumers more likely to prefer more healthful product alternatives in the presence of a FOP nutritional warning?' (RQ1), 'Are consumers more likely to refrain from buying a product category in the presence of a FOP nutritional warning?' and (RQ2), 'What are the main socio-demographic and attitudinal determinants of consumers' response to the implementation of nutritional warnings?' (RQ3).

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