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NUDGES AND FOOD CONSUMPTION BEHAVIOURS

Recently, scholars from all over the world have been examining tools and methodologies to improve dietary intake among people to improve health and well-being. One of the most popular methodology is nudging, with various outcomes, based on the famous book by Thaler and Sunstein (2009). The theoretical and political philosophy concept that lies behind nudging is libertarian paternalism, stating that it is possible to affect behavior in a positive way in order to make people healthier or happier, respecting people's freedom of choice and autonomy but directing them indirectly towards a better decision. Using human's decision errors and cognitive biases to motivate people to buy unhealthy food products, can also be used to reverse the trend of obesity and promote healthier foods, is the underlying thought. In times of increasing obesity rates and related rises

in health service utilization and costs, a public debate on advertising techniques that attempt to persuade people to eat healthier and consume more fruit and vegetables, seems timely. Execution of effective healthy food promotion activities like nudges will require bold action by policymakers by implementing effective interventions to increase the promotion of healthier foods and as a consequence increase people's health and wellbeing on the long-term. This issue of *The Global Fruit & Veg Newsletter* shares three articles that further demonstrate the effect of nudges on food consumption behaviours.

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Social marketing and nudges: two effective ways to change consumer behaviour

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Despite of numerous information campaigns encouraging consumers to eat more fruit and vegetables, habits remain unchanged, particularly among people on low incomes¹. This is an issue for campaigns promoting healthier behaviour and lifestyle choices. They really need to understand and take account of complex interactions, based not only on personal factors but also on environmental determinants². Many countries are adopting programmes based on social marketing and nudge techniques. These programmes have brought about a real improvement in dietary practices³. This article emphasizes these approaches and assess their effectiveness.

Definitions: social marketing and nudges

The consensual definition of **social marketing** is as follows: “social marketing seeks to develop and integrate marketing concepts alongside other approaches, in order to influence the behaviour of individuals and communities for the greater social good. The practice of social marketing is guided by ethical principles. Drawing upon research, best practices, theory and insights into the target audience and partners, it seeks to implement effective, equitable and sustainable programmes for social change based on an analysis of the competition and market segmentation.”

Nudges are techniques inspired by behavioural economy and neurosciences that encourage individuals to make the right decision^{4,5}. By making micro-changes to the environment, this approach seeks to achieve an immediate change in behaviour while maintaining individual freedom of choice.

Assessing campaign effectiveness

Many literature reviews have highlighted the effectiveness of social marketing in changing general behaviour, and

three reviews^{6,7,8} in particular have confirmed its potential to promote healthy eating. The campaigns analysed sought to influence nutritional knowledge as well as focusing on psychological variables such as self-efficacy and a perception of the benefits of healthy eating.

At the same time, nudges often appear to have a positive impact on dietary practices in the short term. Several systematic studies have shown that nudges have an impact on the attitudes of school children, but do not necessarily lead to increased consumption of fruit and vegetables. Moreover, their long-term impact remains uncertain^{9,10}. A recent meta-analysis concluded that campaigns are more effective in reducing the intake of foods of poor nutritional quality than in increasing the intake of foods of high nutritional quality or in reducing the total calorie count. It also concluded that nudges seeking to change behaviour by making it easier to choose and eat healthy foods and by increasing availability and portion size, without seeking to influence knowledge or emotions, are more effective than those targeting an emotional response by playing on the positive benefits of food. These campaigns are more effective than purely informative actions¹¹.

Two complementary approaches

The two approaches are basically complementary since they both set out a global behavioural method delivering effective and pragmatic solutions to one of the main challenges facing society today. It would be useful to include them in public health campaigns in France, primarily to change the dietary habits and lifestyles responsible for overweight and obesity, both of which are continuing to increase despite the many nutritional information and education campaigns. Simply handing down information and rules is not enough to bring about lasting change.



Based on: P. Gurviez and S. Raffin, Social marketing and nudge: two efficient methods for behavioural change, Cahiers de nutrition et de diététique <https://doi.org/10.1016/j.cnd.2020.10.003>

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Taste and health information on fast food menus to encourage young adults to choose healthy food products

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Currently, many young adults are overweight or obese worldwide because they overconsume unhealthy and energy-dense snacks. During the past three decades, obesity among young adults has risen to an extent that it has become one of the biggest public health concerns worldwide, although young adults themselves believe they should eat healthier and know why they should do so. However, eating healthily is not that easy since young adults are targeted by many advertisements that are designed to encourage them to consume energy-dense foods which refrains them also from eating healthier foods such as vegetables and fruit. In addition, most young adults have little knowledge of the nutrients they consume in daily life and therefore find it hard to distinguish healthy from unhealthy food products. Consequently, they develop eating habits that differ from patterns that are recommended. Considering the societal, health, and economic consequences of the current food system, the food industry must take responsibility for young adults' health by focusing on the promotion of healthy food products they are selling. Fast food restaurants do have the possibility to steer young adults toward the direction of healthier products, which can be done effectively while keeping unhealthy (food) products on the menu.

In the current study, we have tested if taste and health information on food products in an online food environment that simulates a major fast food brand increases the probability to choose healthier options. An experimental between-subjects design consisting of three conditions – subtle (figure 1), explicit (figure 2), and no health information – was conducted among 142 participants aged 18 to 24 in the Netherlands.



Figure 1. Condition 1: Subtle health information provided for a healthy menu product.



Figure 2. Condition 2: Explicit health information provided for a healthy menu product.

Theoretical background: people will be more likely to buy and consume healthier foods by increasing attention toward them

The Healthy Food Promotion Model describes that by increasing

attention toward healthier foods and improve the reinforcing value (e.g., liking and wanting) through food promotion, people will be more likely to buy and consume these foods¹. As a consequence of this increased consumption, a reciprocal relation between the food promotion with eating behavior will occur, that in time potentially will lead to a normalization of intake of healthier foods, whereby habit formation of a healthier diet is created. A key challenge is to promote healthier food without generating a negative taste perception that is often associated with healthy products.

Whether the provision of health information is effective might depend on the level of integration of the information into the menu context and the level of health consciousness of consumers. More specifically, a recent systematic review showed that priming salience information about the healthiness of food increased healthier food choices, suggesting that health information is effective in encouraging consumers to choose a healthy snack product when the information is provided in an explicit manner compared to subtle².

Explicit health information about healthy products provided on the fast food menu encouraged healthy choice

The results showed that when health information about healthy products was provided, the level of integration of the information into the menu context had an effect. More specifically, participants exposed to explicit health information about healthy products provided on the fast food menu were more likely (probability 3.7 times higher) to choose a healthy food product compared to participants exposed to subtle integrated health information:

- In the explicit health information condition, 34.7% of all young adults chose a healthy food product;
- In the subtle health information condition, 11.9% of all young adults chose a healthy food product.

In addition, in the no health information condition, 17.6% of all young adults chose a healthy food product which is higher than the result of the subtle information condition. This suggests that it is possible that information alone may not have a direct effect on healthy food choice, but that the health information should be made explicit in a fast food environment in order to have an effect on the health perceptions of the healthy products.

Subsequently, no interaction effect for moderating factors (age, attitude, product familiarity, health consciousness and gender) was found, assuming that the effects are the same for the full group.

In line with the Healthy Food Promotion Model, the findings suggest that the provision of explicit health information on healthy products stimulates healthy food choices in a fast food environment.

Based on: Folkvord F. et al. Taste and Health Information on Fast Food Menus to Encourage Young Adults to Choose Healthy Food Products: An Experimental Study. Int. J. Environ. Res. Public Health 2020, 17, 7139.

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Social norm nudges in shopping trolleys to promote vegetable purchases in a Dutch supermarket

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Supermarkets are a key point of purchase for people's groceries and have a considerable influence on food choices and dietary intake^{1,2}. A promising strategy to stimulate healthy food purchases in supermarkets is nudging³. An example of a nudge is the use of a descriptive social norm that explains the behavior of similar others as it is known that people want to belong to a group and they perceive behaviours of similar others as the norm⁴. Providing information about which, where or how many vegetables are normally purchased by other customers may therefore be effective in the promotion of vegetable purchases in supermarkets.

The objective of this study was to investigate the effect of a nudge in shopping trolleys that consisted of a social norm message on the amount of vegetables purchased and a designated place to put vegetables in a deprived urban neighborhood in the Netherlands.

Green nudge inlay and social norm message to promote vegetable purchases

We used a quasi-experimental design with two conditions in a supermarket with the largest market share in the Netherlands. The conditions consisted of 1) intervention days on which the shopping trolleys in the supermarket had a green nudge inlay and social norm message (Figure 1 and 2) control days on which the regular shopping trolleys (no inlay or message) were used in the supermarket. Data collection took place during 2 weeks in May 2017 on popular shopping hours on Friday and Saturday.

Customers with the social norm nudge in their shopping trolley purchased more vegetables

In total, 244 customers participated in the study. Around 60% of the customers were female, most were between 18-55 years old (51,2%) and had completed a medium or higher level of education. The medians for the amount (in grams) and number of items of vegetables purchased were higher on the intervention days compared to the control days (Table 1). These differences were confirmed in multivariate ordinal logistic regression analyses that showed that customers with the social norm nudge in their

shopping trolley (n = 123) purchased more grams of vegetables compared to the customers without the social norm nudge, especially those who bought groceries for less than three days. Sensitivity analyses also showed that intervention customers who noticed the green inlay were more likely to purchase more items of vegetables.

Table 1. The number of purchased vegetables per customer (items and grams) for the total study period and the control and intervention days apart.

	Total study period	Control days	Intervention days
N	244	121	123
Number of purchased vegetable items (median values and 25 th and 75 th percentiles)	3.00 [0; 17]	2.00 [0; 15]	3.00 [0; 17]
Grams of purchased vegetables (median values and 25 th and 75 th percentiles)	1040 [0; 7161]	900 [0; 6785]	1120 [0; 7161]

This quasi-experimental study showed that a green inlay in shopping trolleys communicating a social norm on vegetable purchases and a designated place to put vegetables increased their purchases among supermarket customers. Although the impact of this relatively small increase found in this study seems minor on an individual level, it does show the potential of an easy, subtle and cheap-to-implement health intervention in supermarkets. Nevertheless, a single supermarket intervention, such as social norm nudges in this study, might itself be seen as part of a broader strategy including multiple approaches to stimulating vegetable (and other healthier) purchases in supermarkets.



Fig. 1. Shopping trolley with a green inlay with one of the three social norm messages 'The three most purchased vegetables in this supermarket are 1) cucumber, 2) avocado and 3) bell pepper'.

Based on: Huitink M et al. Social norm nudges in shopping trolleys to promote vegetable purchases: A quasi-experimental study in a supermarket in a deprived urban area in the Netherlands. *Appetite*. 2020;151:104655.

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