

Comparisons of Nutri-Score and NutrInform Battery on consumer preferences, objective understanding, and food choices among Portuguese consumers

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Abstract

Front-of-pack nutrition labels (FoPLs) are a cost-effective measure to inform consumers about the nutritional values of foods and to help them make healthier food choices at the point of purchase. This study compared the preference and performance—objective understanding and food choices—of Portuguese consumers for two FoPLs: Nutri-Score and NutrInform Battery. An experimental study was conducted in 2022 on a representative sample of 1014 Portuguese adults (mean age = 45.1 ± 13.8 years; 49% women). Participants were randomly allocated to either the Nutri-Score or the NutrInform Battery group and asked to complete an online questionnaire testing their objective understanding of the label and the effect on purchase intentions for three food categories as well as perceived helpfulness and perception of the FoPL. In terms of participants' ability to identify the most nutritionally favourable foods, Nutri-Score outperformed NutrInform Battery in all categories, with the highest performance observed for the identification of the three foods of higher nutritional value within the breakfast product category (OR = 27.8 [19.4–39.9], $P < .0001$). Overall, with Nutri-Score, participants were more likely to intend to purchase more nutritionally favourable products than with NutrInform Battery (OR ranging from 2.01 [1.50–2.68] for breakfast cereals to 14.6 [10.2–20.9] for added fats, $P < .0001$). In terms of preference, Nutri-Score was more appreciated, and perceived as easier to use, more reliable, and more informative than NutrInform Battery. The Nutri-Score appeared to be a more appreciated and effective tool than NutrInform Battery for helping Portuguese consumers to choose foods with a better nutritional composition.

Introduction

Non-communicable diseases account for 91% of deaths in the EU and are associated with preventable behavioural risk factors, a major one being dietary risk factors, which caused 15% of deaths in 2021 [1]. Based on self-reported data from 2019, 17.7% of the Portuguese adult population were classified as obese and 55.9% were classified as either overweight or obese [2]. A third of annual deaths in Portugal were estimated in 2019 to be attributable to behavioural risk factors (tobacco 12%, dietary risks 11%, alcohol 6%, or low physical activity 3%) [3]. Several opportunities for intervention remain therefore available. The World Health Organization (WHO) [4] and the Organization for Economic Co-operation and Development [5] have identified, among others, the front-of-pack labels (FoPLs) as an efficient policy tool for preventing non-communicable diseases by helping people to move towards an improved diet.

There are two main types of FoPLs (interpretive and non-interpretive). Interpretive labels decipher nutritional value data for the consumer. This guidance can be nutrient-specific (e.g. multiple traffic lights) or constitute a synthetic indicator (e.g. Nutri-Score, Nordic Keyhole) of the overall nutritional value of the food. In contrast, non-interpretive labels reproduce part of the nutritional declaration without additional interpretation. Nutri-Score is an interpretive label adopted in France in 2017, then by several European countries (Belgium, Germany, Luxembourg, Spain, Switzerland, and the Netherlands). This label uses a summary, graded, color-coded system providing information on the overall nutritional quality of a food product using a five-category scale from A/dark green to E/dark orange (from the highest to the lowest nutritional quality) [6]. The Nutri-Score provides an overall appreciation of the nutritional declaration for 100 g of food (or 100 ml of beverage) based on an algorithm that considers items from the nutritional elements

displayed on the back of the packaging: items to be limited (energy, saturated fatty acids, sugars, and salt) and items to be favoured (fibre, proteins, and percentage of fruits, vegetables, and legumes). The NutrInform Battery is a non-interpretive label, officially adopted in Italy in 2020. It displays, for a manufacturer-defined portion, the content of energy, total and saturated fats, sugars, and salt, corresponding to the proportion of the daily dietary intake reference of an average adult, illustrated in the form of battery symbols with their corresponding charging levels [7].

Discussions on the introduction of FoPL in Portugal initiated in 2009, with a Multiple Traffic Light option initially favoured. After a shift in the public discussion after the introduction of Nutri-Score in neighbouring countries starting in 2019, in April 2024, the Portuguese government officially announced the adoption of the Nutri-Score FoPL, considering its robust scientific validation [8–10]. Two months later, however, the change in government led to a different stance, with a rejection of the adoption of the Nutri-Score ([11], for document review). Public statements from the Ministry of Agriculture at the time indicated that it considered that FoPLs should consider the specific characteristics of Portuguese products, particularly olive oil [12].

According to the WHO European Regional Office, interpretive FoPLs are seen as a cost-effective measure to help consumers understand the nutritional quality of foods, and orient them towards healthier food choices at the point of purchase [13]. The European Commission stated in 2020 that it would propose a harmonized mandatory FoPL in the EU as part of the Farm to Fork strategy [14]. The interpretive Nutri-Score label and the non-interpretive NutrInform Battery label are the main candidates for adoption at the European level and at national level in some countries. Portugal's involvement and subsequent disengagement is a worrying example of how scientific evidence is invoked in the political debate on FoPLs.

This study aimed to compare the performance of Nutri-Score and NutrInform Battery among a sample of Portuguese consumers. The evaluation focused on several performance variables of FoPLs, including consumer preference as measured by subjective understanding and perception, consumers' objective understanding of the label, and intention to purchase nutritionally favourable products.

Methods

Participants

In 2022, 1014 Portuguese participants were recruited via the ISO-accredited international web panel provider PureProfile to complete an online questionnaire on Nutri-Score and NutrInform Battery. Quotas were set on age, sex, and education level to match the general Portuguese population [15]. The Institutional Review Board of the French Institute for Health and Medical Research approved the protocol of the present study (n°22-876).

Design and stimuli

Three food categories were selected: breakfast products, breakfast cereals, and added fats because of their high variability in nutritional quality within the category and/or because they have been the subject of controversy in the current FoPLs debate (one of the main critics is the classification of olive oil by Nutri-Score) [16]. Moreover, breakfast is an eating occasion including a more limited choice of products compared to other meals and is therefore suitable to model consumer choice strategies. Two similar categories were considered (breakfast products, breakfast cereals) but one does not have standardized portion sizes (breakfast products) whereas the other does (all cereal portions are identical). Given that the NutrInform Battery is based on portions, we wanted to have information on the impacts of different portion sizes, while remaining in the same field as breakfast cereals, so as to be able to extrapolate what precisely comes under this point rather than having very

different categories, the results of which could be linked both to the category and to the presence of very different portions. Images of real-life products available in Portuguese supermarkets were used (Supplementary Information). A FoPL (either Nutri-Score or NutrInform Battery) was placed below the picture of the food products with a zoom function available permitting closer inspection. The breakfast products included eight commonly consumed foods such as biscuits, cereals, and crispbread. The more detailed breakfast cereals category included seven other products such as chocolate-flavoured cereals and oat flakes and had identical portions, allowing a direct comparison. The added fats category included eight vegetable oils (e.g. olive oil, sunflower oil, peanut oil) and butter. Images of all products within the same category were displayed on the same webpage and were approximately the same size. Back-of-pack information, such as ingredients and nutritional values, was not presented to avoid information overload and to mimic the presentation of products in-store, where this information is not visible on the front of the pack.

Procedure

Completing the online questionnaire, participants provided information on their sex, age, educational level, household composition, self-estimated level of nutrition knowledge, and diet quality. Participants were asked if they had previously heard about Nutri-Score or NutrInform Battery and what their opinions were on these labels: positive, neutral, or negative. Following this general section, participants were randomly assigned to either the Nutri-Score or NutrInform Battery group. Randomization ensured equitable representation of participant demographics across intervention groups. As a first step, respondents read an information note including details about the characteristics of their assigned FoPL (Supplementary Information).

Participants were then presented with each food category successively: breakfast products (eight items), breakfast cereals (seven items), and added fats (eight items). For each category, participants used a four-point Likert scale ('strongly disagree'; 'somewhat disagree'; 'somewhat agree'; 'strongly agree'; with an 'I don't know' option available) to indicate whether they felt the FoPL helped them differentiate the nutritional qualities of the food products, serving as a proxy for 'subjective understanding'. To assess 'objective understanding', participants were tasked with selecting the three products (only one for added fats) they considered most nutritionally favourable, ranking the best one first, for each of the three categories. For 'purchase intention', participants were asked to indicate which product they would purchase most frequently. Of note, objective understanding and purchase intention are considered as an evaluation of a label's performance, while subjective understanding and perception are considered as elements of preference. Indeed, while the latter rely only on self-reported data from participants, the former are based on tasks that provide a more reliable assessment of participants' abilities [13, 17]. Preference variables are also considered more prone to external biases than performance measures.

Finally, the 'perception' of the FoPL was evaluated through 13 statements grouped into four dimensions, with participants expressing their opinions using a nine-point Likert scale (1: 'strongly disagree'; 5: 'neither agree nor disagree'; 9: 'strongly agree') (Supplementary Information).

After answering the questionnaire, all participants were shown both the Nutri-Score and NutrInform Battery labels applied to three different types of cookies. They were then asked to choose which FoPL they found easiest and quickest for assessing the nutritional quality of the products. It is important to note that this was the only point in the questionnaire where participants were directly exposed to both labels and asked to express a preference between them.

Statistical analyses

Sociodemographic and FoPL contextual data were summarized for each randomization group. Understanding of the information note

was evaluated on a scale of seven and compared using a Welch's *t*-test (accounting for unequal variances).

The analyses for subjective understanding, for the overall perception of the FoPL, for objective understanding and for evaluating purchase intention, are described in details in the [Supplementary Information](#).

Multivariable ordinal and binary logistic regression models were employed to evaluate the associations between the ability to select the three correct products (three-product task) or to identify the expected product in the first position (one-product task) about Nutri-Score versus NutriInform Battery (taken as the reference). Socio-demographic and contextual variables that showed statistical significance at the *P* values < .20 level in bivariate analyses were included into the multivariable model as recommended in Ref. [18]. Analyses were adjusted for sex, educational attainment, presence of children in the household, and degree of understanding of the information note. Statistical analyses were conducted using the complete sample of participants for all food categories combined and taken individually.

All statistical tests were bilateral and *P* values < .05 were considered significant. All tests were conducted using R Software (version 3.4.4, R Foundation, Vienna, Austria).

Results

The mean age of the 1014 participants was 45.1 ± 13.8 years, 49% were women, and 39% had a university degree. Overall, 22% declared having an unhealthy diet, and 47% declared having poor nutrition knowledge. Data per randomization group are detailed in [Table 1](#). Regarding the understanding of the information note, participants better understood how Nutri-Score worked compared to NutriInform Battery (4.70 ± 2.17 vs. 2.97 ± 1.31 , respectively; *P* < .0001).

Concerning subjective understanding ([Table 2](#)), Nutri-Score was perceived as more helpful than NutriInform Battery to differentiate the nutritional quality of all categories of foods studied. Regarding perception, all parameters studied (ease-of-use, capacity to inform, trust, and liking) were significantly higher for Nutri-Score than NutriInform Battery.

In terms of direct preference and taking NutriInform Battery as the reference, being in the Nutri-Score group significantly increased the likelihood of preferring the FoPL of this group for the 'ease-of-use' (OR = 6.10 [4.60–8.15], *P* < .0001) and for the 'Quickness of use' (OR = 8.60 [6.36–11.70], *P* < .0001) ([Table 3](#)).

Regarding the objective understanding of the labels, it was observed for all three food categories and both tasks, that Nutri-Score was associated with a higher ability of participants to identify correctly foods with a better nutritional composition for all product categories studied ([Table 4](#)). Indeed, participants in the Nutri-Score group were more successful in the task of selecting the correct products than participants in the NutriInform Battery group, across all food categories (OR = 6.92 [5.25–9.11], *P* < .0001 for overall performance).

In terms of purchase intention ([Table 4](#)), participants in the Nutri-Score group were more likely to purchase products with a more favourable nutritional quality than participants exposed to NutriInform Battery, for each food category studied. Further analyses indicated that participants in the Nutri-Score group chose products with significant reduced sugar and salt levels among breakfast items, and significant lower salt levels among breakfast cereals (data not shown). In addition, 83% of the participants in the Nutri-Score group declared they would buy olive oil more often versus 66% of NutriInform Battery group participants (OR = 4.36 [3.15–6.03], *P* < .0001).

Finally, 71% of all participants preferred Nutri-Score. In the Nutri-Score group, 17.5% preferred NutriInform Battery, while in the NutriInform Battery group, 59% favoured Nutri-Score (data not shown).

Table 1. Individual characteristics of participants, context per group, and understanding of the information note (*n* = 1014)

	Nutri-Score group (<i>n</i> = 507)	NutriInform Battery group (<i>n</i> = 507)
Women	250 (49%)	250 (49%)
Age categories, years		
18–34	120 (24%)	121 (24%)
35–54	228 (45%)	228 (45%)
55–80	159 (31%)	158 (31%)
Educational level		
No university degree	311 (61%)	312 (62%)
University degree	196 (39%)	195 (38%)
Presence of children (≤13y) in the household		
Without children	353 (70%)	334 (66%)
With children	154 (30%)	173 (34%)
Self-estimated diet quality		
Unhealthy	112 (22%)	108 (21%)
Healthy	395 (78%)	399 (79%)
Self-estimated nutrition knowledge		
Poor	240 (47%)	240 (47%)
Good	267 (53%)	267 (53%)
Did you hear about Nutri-Score before?		
Yes	261 (51%)	257 (51%)
If yes, what you heard was ...		
Neutral	69 (26%)	59 (23%)
Negative	5 (2%)	8 (3%)
Positive	187 (72%)	190 (74%)
Did you hear about NutriInform before?		
Yes	323 (64%)	314 (62%)
If yes, what you heard was ...		
Neutral	73 (23%)	89 (28%)
Negative	2 (1%)	4 (1%)
Positive	248 (76%)	221 (71%)
Understanding of the information note ^a	4.70 ± 2.17	2.97 ± 1.31

a: The consumer's ability to correctly answer seven questions about the information note (mean grade).

Table 2. Results of subjective understanding by food category and overall perception

	Nutri-Score (<i>n</i> = 507) Mean ± SD	NutriInform Battery (<i>n</i> = 507) Mean ± SD	<i>P</i> -value
Subjective understanding ^a			
Breakfast products	1.43 ± 0.74	1.22 ± 0.82	<.0001
Breakfast cereals	1.39 ± 0.75	1.12 ± 0.78	<.0001
Added fats	1.17 ± 0.92	1.04 ± 0.81	.02
Perception ^b			
Ease-of-use	0.48 ± 1.35	−0.48 ± 1.78	<.0001
Capacity to inform	0.18 ± 1.53	−0.18 ± 1.73	.001
Trust	0.17 ± 1.50	−0.17 ± 1.59	.001
Liking	0.20 ± 1.02	−0.20 ± 1.18	<.0001

SD: standard deviation.

a: The reported helpfulness of the FoPL in discriminating the nutritional quality of products in each food category (the Likert scale was converted in a score from −2, strongly disagree to +2, strongly agree).

b: Mean coordinates of participants on the first PCA dimension of each perception group, standardized variable. The exclusion of participants responding 'neither agree nor disagree' for all statements of a perception group led to the following total samples (in the same order as the perception tasks): *n* = 997; *n* = 992; *n* = 979; *n* = 960.

Discussion

This study showed that Portuguese consumers preferred Nutri-Score to NutriInform Battery and that Nutri-Score outperformed

NutrInform Battery in helping them identify foods (at least for breakfast products, breakfast cereals, and added fats) with the most favourable nutrition composition in terms of perception, subjective and objective understanding, and intentions to purchase food products with higher nutritional qualities.

It is essential to differentiate subjective understanding (the consumer's perception of what they understood from the labelling system) and objective understanding (whether what the consumer understood aligned with the intended message of the system). Subjective understanding in this context pertains more to the consumer's attitude towards the FoPL, and corresponds to its acceptability and perception. As suggested in the Manual to develop and implement FoPL of the WHO Europe [13], investigating consumers' objective understanding of the FoPL is the key study to evaluate its performances.

Two previous studies have been conducted among Italian and Spanish consumers using the same methodology as the present study to compare both the performance and preference of Nutri-Score and NutrInform Battery [19, 20]. In terms of objective understanding, as in Italy and Spain, Nutri-Score performed better in Portugal than NutrInform Battery for all tested food categories [19, 20]. In the same line, other studies performed in several European countries showed higher performances of an interpretive FoPL, such as Nutri-Score, concerning objective understanding tasks (ranking of the nutritional quality of foods and food choices)

Table 3. Association between Nutri-Score and the likelihood of preferring the FoPL to which the participant was primarily exposed ($n = 1014$)

	OR [95% CI]	P-value
Ease-of-use ^a	6.10 [4.60–8.15]	<.0001
Quickness of use ^b	8.60 [6.36–11.7]	<.0001

The multivariate logistical regression models were adjusted for sex, age, education level, presence of children in the household, and knowledge of nutrition (taking NutrInform Battery as the reference). OR: odds ratio; CI: 95% confidence interval.

a: Assessed by the question: 'Between the Nutri-Score and NutrInform nutrition information labels, which one makes it easier for you to assess the differences in nutritional quality between these products?.'

b: Assessed by the question: 'Which label would you like to see on food packaging to help you quickly find the product with better nutritional quality?.'

compared to a non-interpretive FoPL, especially Reference Intakes that have a graphic format very close to NutrInform Battery [21–24].

Concerning subjective understanding, our study showed that Portuguese participants were inclined to think that Nutri-Score was more useful than NutrInform Battery for comparing the nutritional quality breakfast products, as Spanish [19] but not Italian [20] consumers. For added fats, the difference in favour of Nutri-Score was significant only in Portuguese participants. In contrast, a study conducted by Mazzù *et al.* [25] (funded by Federalimentare, which represents the Italian food and beverages industry) found that NutrInform Battery was more effective than Nutri-Score in improving consumer's subjective understanding. This could be explained by the authors' choices in grouping and formulating assessment variables and/or by the types of label-use tasks and given information before task appraisal. Thus, the inconsistency in results between studies calls for objective ways of testing label performance rather than relying on subjective measures. Moreover, while label appreciation parameters, such as 'ease-of-use' can be a good marker of discrimination between labels, it is necessary to measure their performance in food choice situations, as preferences and performance can differ.

The differences in FoPLs scores observed in our study among Portuguese consumers could also be partly due to a lower understanding of how to use NutrInform Battery in a choice situation compared to Nutri-Score, as reflected in the poorer understanding of the information note for NutrInform Battery.

The use of colours and the presentation of a summary indicator may explain the higher performance of the Nutri-Score than descriptive formats such as Reference Intakes [26–28]. Indeed, a colour-coded label like the Nutri-Score easily attracts the consumer's attention and helps them interpret the information provided as shown by a review of the Joint Research Centre [29]. In addition, providing synthetic rather than detailed information by nutrient reduces the consumer's cognitive workload, speeds up information processing, and facilitates understanding of the information provided [22].

On the other hand, non-interpretive formats such as NutrInform Battery, that are only descriptive, have been demonstrated to be poorly understood by consumers, especially those with a low education level [26–28]. Indeed, this format requires a higher cognitive workload compared to interpretive logos such Nutri-Score [22]. The NutrInform Battery visually displays the recommended daily nutrient/energy intake percentages of a portion of food in the form of 'batteries' more or less 'loaded'. Importantly, the symbols could be seen as counter-intuitive for participants, as products with the 'least charged' batteries are supposed to be chosen for their better

Table 4. Associations between Nutri-Score and the capacity to identify the most nutritionally favourable product, the intention to purchase products with a more favourable nutritional quality and the intention to purchase olive oil ($n = 1014$)

	Objective understanding				Purchase intention	
	One-product task		Three-product task		OR [95% CI]	P-value
	OR [95% CI]	P-value	OR [95% CI]	P-value		
Breakfast products ^a	4.19 [3.13–5.62]	<.0001	27.8 [19.4–39.9]	<.0001	3.47 [2.59–4.66]	<.0001
Breakfast cereals ^a	2.52 [1.88–3.37]	<.0001	2.83 [2.02–3.96]	<.0001	2.01 [1.50–2.68]	<.0001
Added fats	16.6 [10.9–26.4]	<.0001	–	–	14.6 [10.2–20.9]	<.0001
All food categories	6.92 [5.25–9.11]	<.0001	–	–	6.67 [4.94–9.01]	<.0001
Olive oil	–	–	–	–	4.36 [3.15–6.03]	<.0001

The multivariate logistical regression models were adjusted for sex, age, education level, presence of children in the household, knowledge in nutrition, understanding of the information note grade (NutrInform Battery was the reference group). OR: odds ratio; CI: 95% confidence interval; '–': for added fats, participants had to select only one product (due to a more limited difference in nutrient composition in this particular category), as a result the overall performance for the three-product task could not be assessed.

a: For the breakfast products and the breakfast cereals categories, the purchase intention section included an answering option 'None of these products'. Removing these cases from the analysis reduced the sample to $n = 860$ for breakfast products and $n = 879$ for breakfast cereals.

nutritional quality. However, by analogy with the electronic devices used daily by many people, graphic representations of charged batteries are more likely to be interpreted as a positive signal or a desirable state to be attained.

In addition, several studies have shown that the portion format can mislead consumers [30–32]. This could explain some of our results on NutrInform Battery, which is a portion-based label. Indeed, for the objective ‘three products’ task, the percentages of correct answers in the NutrInform Battery group were higher for the breakfast cereals category (64%) than for the breakfast products (14%). The latter included products of varying portion sizes, whereas in the breakfast cereals, all products were of the same portion size (30 g), which may have facilitated comparison between products.

Strong evidence exists for the association of adherence to a Mediterranean diet with reduced risk of major cardio-metabolic diseases [33]. One of the main criticisms in the debate on the Nutri-Score in Europe, especially in Portugal, was that it would penalize products from the Mediterranean diet, especially olive oil. This specific argument was indeed included by the Ministry of Agriculture as an element to discard the choice of Nutri-Score in Portugal [12]. However, several studies have shown that Nutri-Score is consistent with the Mediterranean diet [34, 35]. In our study, the two labels classified added fat differently. With NutrInform Battery, the visual oil discriminant parameters are only battery levels for total fats and saturated fatty acids. Rapeseed and sunflower oils have lower saturated fatty acid content than olive oil, and thus, more favourable NutrInform Battery ratings. With Nutri-Score, the best options were olive or rapeseed oils, both rated C (at the time of the study, but updated in 2024 to B), the best rating for added fats. NutrInform’s graphic format resulted in a lower intention to purchase olive oil among participants in NutrInform Battery than among those in Nutri-Score.

Finally, regarding participants’ purchase intention, as in Italy and Spain, Nutri-Score was more likely to encourage Portuguese participants to choose more nutritionally beneficial products than NutrInform Battery for all three product categories studied. As with the objective understanding results, it was in the added fat category that the differences between Nutri-Score and NutrInform Battery were the largest.

From a policy perspective, our study provides additional elements to support the use of Nutri-Score in Portugal, with specific elements that address the criticisms made in 2024 towards the label regarding its potential confounding effects on specific elements of the Portuguese diet. Given that the European Commission has failed to propose a harmonized system for the EU, use of the Nutri-Score would strengthen harmonization between neighbouring countries, as both Spain and France have adopted it, offering a slightly more stable environment for manufacturers who have adopted it. Finally, as some distributors have already widely implemented the Nutri-Score in the country, its formal adoption would enable health authorities to accompany its development with educational campaigns likely to raise consumer awareness of the system, encourage its adoption by stakeholders and, finally, have an impact on the population.

Strengths and limitations

The strengths of our study include the comprehensive analysis of various aspects of FoPL performance, such as objective understanding (evaluated through one-product and three-product tasks), purchase intentions, subjective understanding across three different food categories, overall perception, and preference. Using an online questionnaire enabled us to gather data from participants with diverse educational backgrounds and age groups. However, it is

possible that those who opted to complete the questionnaire had a heightened interest in food and nutrition topics but the fact that they had all access to the information note attenuated this. All along the questionnaire, information notes on the FoPL to which they were assigned was available. This note covered various characteristics of the FoPL, allowing respondents to familiarize themselves with it before answering the performance and preference sections. We ensured equitable chances across the two randomization groups, by considering the unique features of each FoPL when defining the correct answers for the objective understanding tasks. Moreover, our study was conducted before (May 2020) the debate over the adoption of Nutri-Score in Portugal, so the media coverage of the two labels probably had little impact on our study.

Regarding limits, this study was conducted using an online questionnaire, inherently excluding certain real-life factors such as price, time pressure, or presence of children during shopping, known to influence the evaluation of the nutritional quality of food products. Moreover, our study was limited to 23 products of three specific food categories, representing only part of the daily diet.

Conclusion

This study confirms the superior performance of the interpretive FoPL Nutri-Score over the non-interpretive FoPL NutrInform Battery in a specific set of tasks in a Portuguese population sample. The findings add important elements to the ongoing discussion regarding Portugal’s potential adoption of the Nutri-Score. In addition, this research provides an extension of the evidence base supporting the Nutri-Score as the FoPL of choice for Europe.

Author contributions

C.J. and L.N. were responsible for funding acquisition, conceptualization and methodology, data interpretation and supervision of the project. M.F. and T.V. analysed the data, interpreted results, and drafted the article. A.M. participated in drafting the article, reviewed and edited the article for important intellectual content. P.M.V., P. P., P.G., E.K.G., M.T., M.D.T., B.S., and S.H. reviewed and edited the article for important intellectual content.

Supplementary data

Supplementary data are available at *EURPUB* online.

Conflict of interest: The authors declare no conflicts of interest.

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Data availability

Data can be made available upon request to the authors for academic purposes.

Declaration of generative artificial intelligence (AI) in scientific writing

The authors indicate that they did not use generative AI when writing their article.

Key points

- Nutri-Score was perceived by Portuguese consumers as more helpful than NutrInform Battery to differentiate the nutritional quality of three categories of foods studied.
- Regarding perception, all parameters studied (ease-of-use, capacity to inform, trust, and liking) were significantly higher for Nutri-Score than NutrInform Battery.
- Nutri-Score was associated with a higher ability of participants to identify correctly foods with a better nutritional composition for all product categories studied.
- Participants in the Nutri-Score group were more likely to report that they would purchase products with a more favourable nutritional quality more frequently than participants in the NutrInform Battery group.
- This study provides evidence in favour of the use of the Nutri-Score in EU public health policy.

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