



DOES NUTRITIONAL INFORMATION IN RESTAURANTS WORK? A SYSTEMATIC REVIEW OF THE LITERATURE

INFORMAÇÃO NUTRICIONAL EM RESTAURANTES FUNCIONA? UMA REVISÃO SISTEMÁTICA DA LITERATURA

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ABSTRACT: Eating out has become commonplace worldwide, affecting the eating habits of families. Studies have shown that eating away from home has been linked to a higher caloric intake, and greater consumption of fat, salt, and sugar. Within this context, nutritional information on menus has emerged as a promising tool for promoting healthier and more conscious food choices. Objective: To evaluate the effectiveness of nutritional information on restaurant menus (menu labeling). Methods: This is an integrated review of the literature. The keywords used were “menu labeling”, “restaurant menu labeling”, “food labeling”, and “menu calorie labeling”, respectively. Articles published between 2014 and 2024 from the Google Scholar, Pubmed, SciELO, and LILACS databases were analyzed. Results: Eleven articles were analyzed that indicated that the effectiveness of nutritional information on menus depends on the public's understanding of the information, with symbols or exercise equivalents being more effective than numerical values. Conclusion: This impact varies according to where it is employed and is most evident in fast food restaurant chains. Long-term results indicate that these effects are sustainable in terms of food choice.

KEYWORDS: Menu. Food and nutrition unit. Eating habits. Nutritional information.

RESUMO: A alimentação fora do lar tem se tornado cada vez mais frequente em todo mundo, impactando os hábitos alimentares das famílias. Estudos demonstram que comer fora de casa pode se associar ao maior consumo de calorias, gorduras, sal e açúcar. Nesse cenário, a informação nutricional em cardápios surge como uma ferramenta promissora para promover escolhas alimentares mais saudáveis e conscientes. Objetivo: avaliar a efetividade da informação nutricional (menu labeling) em cardápios de restaurantes. Método: Trata-se de uma revisão integrativa da literatura. As palavras-chave utilizadas foram “menu labeling”, “restaurant menu labeling”, “food labeling” e “menu calorie labeling”. Foram analisados artigos publicados no período de 2014-2024 das bases de dados Google Scholar, Pubmed, Scielo e LILACS. Resultados: Foram analisados onze artigos que apontaram a efetividade da informação nutricional em cardápios depende do entendimento do público sobre as informações, com símbolos ou equivalentes de exercício sendo mais eficazes que valores numéricos. Conclusão: O impacto varia conforme o local de uso, sendo mais evidente em redes de fast-food. Ações de longo prazo, indicaram que os efeitos são sustentáveis na escolha alimentar.

PALAVRAS-CHAVE: Cardápio. Hábito alimentar. Informação nutricional. Unidade de alimentação e nutrição.

INTRODUCTION

Eating out is becoming more and more common all over the world, influencing family eating habits and food consumption. Various studies have shown that eating out frequently is associated with a greater total consumption of calories and fat in our daily diet, as well as a lower consumption of micronutrients¹.

In Brazil, the most recent Household Budget Survey (HBS), which evaluates the structure of family consumption and spending in Brazil, revealed that roughly 32.8% of food spending is devoted to eating out². This national survey revealed that 41.2% of Brazilians eat out, and the locations of greatest consumption are luncheonettes and restaurants, which represent 16.9% and 16.4% of their total spending, respectively³.

Eating out is associated with a greater consumption of saturated fats, salt, and sugar⁴. In Brazil, food consumed outside the home is often more caloric and less nutritive compared to home cooked meals, and it contributes directly to the gaining of excess weight⁵.

Thus, eating out potentially risks excessive weight gains and chronic diseases related to a lack of nutrition⁶. Obesity is a non-transmissible chronic disease (NTCD), which has drawn increasing attention due to its great impact on public health. In 2022, it was estimated that roughly 890 million people live with obesity worldwide, which is double the quantity that was recorded during the 1990s. This alarming number demonstrates the need for efficient strategies to prevent and control excessive weight gains⁷.

Within the context of increased dining outside of the home together with an increase in diseases linked to poor nutrition, the providing of nutritional information on menus appears to be a potentially effective tool for reducing the usually unperceived consumption of excessive calories. This practice seeks to increase consumer awareness regarding the nutritional content of the foods they eat, encouraging more informed and healthier food choices.

Given this situation, this work seeks to evaluate the effectiveness of nutrition labeling on menus in changing consumer food consumption and understand how this intervention can influence eating habits.

METHODS

This is a systematic review of the literature which seeks to answer the following question: What is the effectiveness of nutrition labeling in influencing food consumption?

The PRISMA 2020 Methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was employed to research the articles that make up this review. PRISMA 2020 is an updated version of PRISMA 2009, a method developed to help authors demonstrate how reviews of the literature are conducted in a transparent manner⁸. In this case, it was applied to evaluate the effects of interventions in the health area

The inclusion criteria utilized in this review were as follows: publications in English or Portuguese, studies that evaluate the effects of the use of nutritional information in restaurant menus in a practical manner in real or fictional scenarios through interaction with the public, which were published between 2014 and 2024, with this time frame being utilized to ensure the relevance of the included articles. All of the articles that did not meet these criteria were excluded from the analysis.

The Google Scholar, Pubmed, SciELO, and LILACS databases were used for this study. The keywords utilized were "menu labeling", "restaurant menu labeling", "food labeling", and "menu calorie labeling". Figure 1 depicts the selection process. Given the number of results generated by Google Scholar, only the first 50 articles that contained relevant subject matter were considered for this review.

RESULTS

Figure 1 below depicts the search for and analysis of the selected articles.

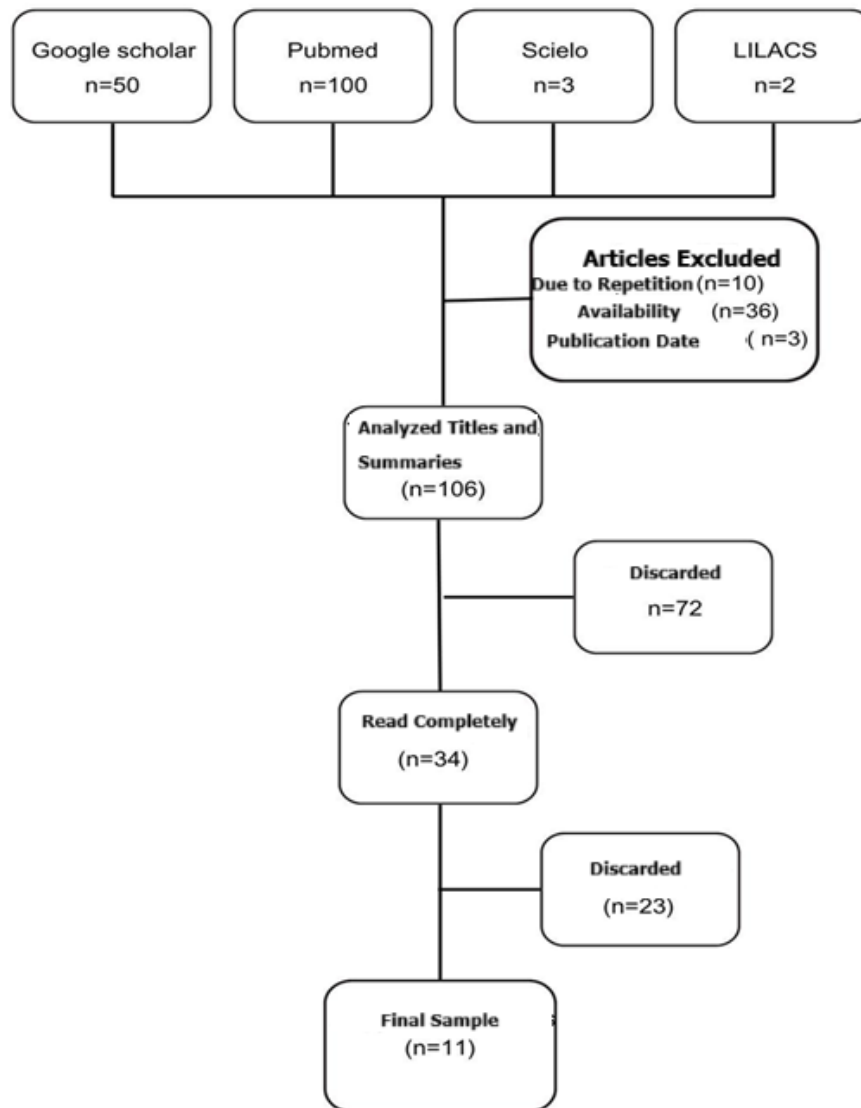


Figure 1. Flowchart with the search, filtering, and selection of the articles.

As described in the flowchart, duplicate and unavailable articles, those published outside of the examined period, and those not aligned with the subject matter of this review of the literature, were eliminated. This left a final sample of 11 articles which were analyzed, and their respective data has been compiled for Text Table 1, which appears below.

Text Table 1. Principal Characteristics of the Selected Articles.

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
PLATKIN <i>et al.</i> (2014) ⁹	<i>The effect of menu labeling</i>	Florida, USA	Calories per portion and their	Fast food Restaurant	One lunch offering a conventional menu served as the control	There were 16% fewer calories consumed over	The study concluded that the

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
	<i>with calories and exercise equivalents on food selection and consumption</i>		exercise equivalents.		to evaluate differences in consumption. In a 2 nd lunch, individuals were presented only with the number of calories of each food option, and in a 3 rd lunch, they were presented with the number of calories of each option along with their physical equivalents in terms of exercise. At the end of each lunch, the leftover food was weighed to measure the number of calories selected by each individual, divided by the number of calories they consumed in each of these different situations.	time in the lunch in which just calories were listed, and 14% fewer calories were consumed over time in the group that viewed the number of calories of each option and their exercise equivalents. The group with menus without nutritional information consumed 2% fewer calories during the same time interval.	availability of nutritional information at the time of food selection can be useful in reducing the number of calories consumed, but more studies are needed to define the best way to provide the public with this information.
THORNDIKE et al. (2014) ¹⁰	<i>Traffic Light Labels and Choice Architecture: Promoting Healthy Food Choices</i>	Boston, MA, USA	Traffic Light Labels	Hospital Lunchroom	Three months of food purchases were analyzed before the introduction of traffic light labels, and were analyzed again after the introduction of new nutritional information, and were further analyzed one and two years after the intervention.	The sale of red light items decreased from 24% during the control period to 20% by the two-year mark. The sale of green light items increased from 41% during the control period to 46% by the two-year mark.	The interventions had a continuous effect during the two-year observation period, demonstrating that they can promote lasting changes in food consumption habits.
ANTONELLI & VIERA (2015) ¹¹	<i>Potential Effect of Physical Activity Calorie Equivalent (PACE) Labeling on Adult Fast Food Ordering and Exercise</i>	United States of America (USA)	Calories per portion and the time walked or the distance walked per consumed calorie.	Fast Food Restaurant	The participants were distributed in a random manner in four groups where they responded to an online survey simulating orders in fast food restaurants.	Participants who were presented with menus without nutritional information selected 1,580 kcal on average, while those with menus with just calorie information selected 1,200 kcal. Those with calorie and time	Both the menus with only calorie information and those with walking equivalent information demonstrated effectiveness in reducing the calories selected from the

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
						walked information selected 1,140 kcal, and those with calorie and distance walked information selected 1,210 kcal.	hypothetical menus in this study.
HUNSBERGER <i>et al.</i> (2015) ¹²	<i>The Effect of Early Life Factors and Early Interventions on Excess Weight in Childhood and Obesity</i>	Oregon, USA	Calories per portion.	Lunchroom	The meals were weighed before and after school lunches, so that the difference between the calories produced and the calories measured before and after the addition of nutritional information on the menu was measured.	The presence of nutritional information led to an average reduction of 47 kcal per student during the analyzed period.	Even though it is not a definitive resolution to this problem, nutritional information on menus can help solve the obesity problem in childhood and adolescence, by encouraging individuals to pay greater attention to calorie consumption.
LEE & THOMPSON (2016) ¹³	<i>Exploring enhanced menu label influence on fast food selection, and exercise-related attitudes, perceptions, and intentions.</i>	Southeastern United States (USA).	Calories per portion and physical activity equivalent	Fast Food Restaurant	Three hypothetical menus were assigned randomly to the participants, with 1) having no nutritional information, 2) listing calories per portion, and 3) listing calories. After the data collection the results were compared.	The number of calories did not present a significant difference among the three menu models for the salad, hamburger, and dessert categories. The menu with just calorie information displayed a greater number of calories consumed compared to the other menu formats. In the beverage category, the menu model with calories and distance	None of the explored formats demonstrated significant changes in consumption habits.

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
						walked presented the largest number of calories consumed compared to the other models.	
REALE and FLINT (2016) ¹⁴	<i>Menu labeling and food choice in obese adults: A feasibility study.</i>	United Kingdom	Calories per portion, nutritional content, and physical activity equivalents.	Fast Food Restaurant	All of the participants were presented with a menu without nutritional information as a control, and later at random they were presented with menus providing nutritional information. The differences in their consumption were evaluated.	For the presented menu, the presence of only calorie information obtained a 26% reduction, which was 319 kcal less than the control situation.	Nutritional information on menus can be a viable strategy for the promotion of healthier eating habits that encourage weight loss.
PÉREZ et al. (2017) ¹⁵	<i>Effect of calorie labeling on menu selection: A preliminary study in Santiago, Chile</i>	Santiago, Chile	Calories per portion	Conventional Restaurant	Through an online survey, the participants were presented with two hypothetical menus. The first presented no calorie information, and the second presented the number of calories per portion of a meal containing a main course, a dessert, and a beverage.	During the analysis of the valid responses, the existence of three subgroups was perceived. The first (49% of the participants) chose to reduce the number of calories consumed, the second (47% of the participants) maintained their selections, and the third (4% of the participants) increased their caloric intake. The first group displayed a reduction of 39.2% in terms of the calories they selected.	Despite this study's limitations, it may be concluded that nutritional information on menus can help reduce caloric intake in restaurants.
LEE and LEE (2018) ¹⁶	<i>Parents' meal choices for their children at</i>	South Korea	A symbol for low calories, numerical values, and	Conventional Restaurant and Fast Food Chains	The participants were randomly assigned conventional or fast food restaurant menus featuring the	In fast food restaurants, the participants used menus with only	This study's results demonstrate that the environment

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
	<i>fast food and family restaurants with different menu labeling presentations</i>		a combination of the symbol and numerical values		four menu formats: (no information, numerical values, symbols, or a combination of them).	symbols or a combination of symbols and caloric values, and chose fewer calories in comparison with other formats. In conventional restaurants, there were no significant differences in food choices independent of the menu format.	in which the nutritional information is presented influenced the results as much as the information's format.
PETIMAR et al. (2019) ¹⁷	<i>Evaluation of the impact of calorie labeling on McDonald's restaurant menus: A natural experiment</i>	Boston, Springfield, Hartford, and Providence, USA	Calories per portion	Fast Food Restaurant	Purchase receipts in fast food restaurants which apply the American nutritional information legislation for menus were collected and compared to receipts from locations where the legislation was not voluntarily applied.	In this experiment, no association was found between menus with nutritional information and a reduction in consumed calories.	No significant reduction in caloric intake was detected for restaurants with nutritional information on their menus as compared to restaurants without nutritional information on their menus.
PETIMAR et al. (2021) ¹⁸	<i>Changes in the calorie and nutrient content of purchased fast food meals after calorie menu labeling: A natural experiment</i>	Louisiana, Mississippi, and Texas, USA	Calories per portion	Fast Food Restaurant	Sales data from three fast food restaurant chains were analyzed before and after the implementation of the mandatory requirement for nutritional information on American menus.	Before the implementation of the legislation, average calorie consumption was 1,486 kcal per purchase. During the application of the legislation, a 54 kcal reduction in average calories per purchase was observed. After the legislation became mandatory, there was a	It may be perceived through this study that placing nutritional information on menus in fast food chains was associated with a small reduction in caloric intake in these restaurants.

Author and year of publication	Title	Location	Type of nutritional information evaluated	Type of Physical Location	Form of Evaluation	Results	Conclusion
						decrease of 82 kcal per purchase.	
GIAZITZI et al. (2022) ¹⁹	<i>A Hypothetical Tavern Menu for the Evaluation of Calorie Selection through Menu Labeling</i>	Greece	Calories per portion and the symbol of a balanced diet	Conventional Restaurant	An online survey was employed in which the participants selected their food for consumption in a hypothetical traditional restaurant. All of the participants used the three formats (control, calories, and symbols) with 15-to-25-day intervals between the evaluations.	The study participants selected 283.3 fewer kcal, and 369.6 fewer kcal, respectively, using menus with caloric values and a balanced diet symbol when selecting an entrée, a salad, the main course, a dessert, and a beverage.	This study concluded that the introducing of symbols for a balanced diet in the nutritional information displayed in menus may benefit the population by facilitating reductions in caloric intake.

In terms of the countries where these articles were published, most are manuscripts written in the United States (7), with there being one article apiece written in Chile, Greece, South Korea, and the United Kingdom, respectively.

Among the forms of presentation of nutritional information, the listing of calories per portion stands out, as can be seen from Figure 2.

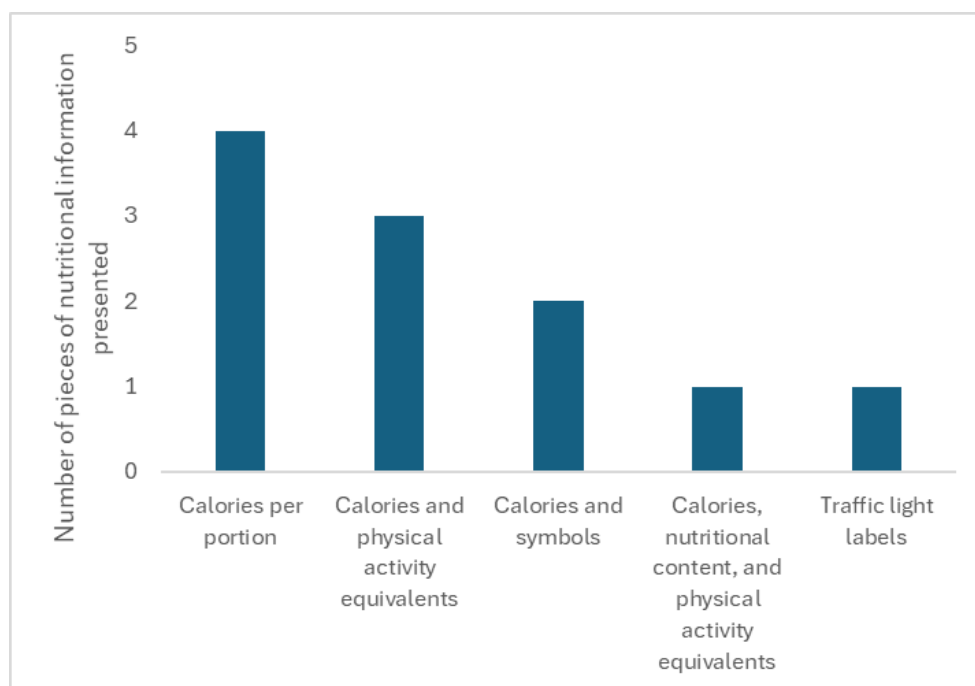


Figure 2. Type of nutritional information strategy.

Meanwhile, in terms of the effectiveness of these interventions, 8 (72%) of the articles demonstrate that nutritional information on menus has a positive effect, especially in the reduction of calories consumed, even though three studies observed that the utilized strategy did not modify food choices.

DISCUSSION

The research method utilized in this review of the literature was selected so that it could be applied to studies with varying objectives⁸, making this review more flexible and potentially larger. The results demonstrate that the effectiveness of nutritional information on menus is related to the public's understanding of the presented information. In studies such as Giazitzi et al.¹⁹ and Antonelli & Viera¹¹, it may be observed that the addition of symbols or their equivalents, rather than the use of only numerical values, can influence consumer choices by facilitating their understanding.

It also should be highlighted that the impact of nutritional information on menus is linked to the location where they were utilized, as demonstrated by the study conducted in South Korea, where the participating families reduced their number of calories consumed in fast food chains, even though they did not present the same reduction in conventional restaurants¹⁶. This finding is confirmed by a study conducted in the United States which also noted a reduction in the number of calories consumed in fast food restaurant chains¹⁸.

An important example of a lasting effect of nutritional information on menus is presented in a study conducted in Boston, Massachusetts in the United States, which followed the effects of nutritional information among workers in a hospital lunchroom for a period of two years, indicating that changes in the nutritional information presented on menus resulted in healthier food choices on the part of consumers during the studied period. This suggests that nutritional information on menus can have sustained long-term effects¹⁰.

On the other hand, several studies have demonstrated that nutritional information on menus does not necessarily lead to a reduction in the number of calories consumed. Studies such as Petimar et al.¹⁷ and Lee & Thompson¹³ did not observe these changes in their studied participants. Similar results may be found in other reviews of the literature such as Bleich et al.²⁰, where the 53 evaluated studies regarding this subject help lead us to conclude that a lack of studies that really observe the effect of nutritional information on menus in the real world makes it difficult to guarantee the effectiveness of this method, because many of these studies have been realized using hypothetical menus.

It has been verified that the large majority of the selected studies were realized in the United States and just one took place in the Global South (Chile), and a contributing factor to this may be the 2018 passage of legislation which regulates the nutritional information presented in restaurant chains with over 20 units. This concentration in a single country limits the understanding of the effectiveness of nutritional information on menus. In addition, it was not possible to define whether the United States uses a standard similar to those adopted in various other countries regarding the mandatory requirement of providing nutritional information for packaged foods²¹, which may positively affect consumer choices when they are also adopted in restaurants.

This review of the literature is limited due to a lack of studies regarding this subject realized in real situations, which demonstrates its applicability and the scarcity of studies performed in the Global South. Nonetheless, this article demonstrates the possibility of utilizing nutritional information on menus as a tool to further healthier eating practices in consumer food consumption away from home.

CONCLUSION

Based on the information presented in this review of the literature, it is possible to conclude that the effectiveness of nutritional information on menus is linked to the way and context in which it is presented.

Therefore, to guarantee the real effectiveness of nutritional information on menus, more studies that are oriented towards various populations and real scenarios are needed. In this manner, it will be possible to ensure that nutritional information on menus has a significant impact in promoting public health.

REFERENCES

1. Lachat C., Nago E., Verstraeten R., Roberfroid D., Van Camp J., and Kolsteren P., "Eating Out of Home and its Association with Dietary Intake: A Systematic Review of the Evidence", *Obes Rev.*, April 13, 2012, pp. 329-46. DOI: 10.1111/j.1467-789X.2011.00953.x.
2. Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa de Orçamentos Familiares, 2018. Available at: <<https://www.ibge.gov.br/>>. Retrieved on May 23, 2024.
3. Bezerra in Moreira T.M.V., Cavalcante J.B., Souza A.M., and Sichieri R., "Consumo de alimentos fora do lar no Brasil segundo locais de aquisição", *Revista de Saúde Pública*, v. 51, n. 15, 2017. <https://doi.org/10.1590/S1518-8787.2017051006750>.
4. Wellard-Cole L., Davies A., and Allman-Farinelli M., "Contribution of Foods Prepared Away from Home to Intakes of Energy and Nutrients of Public Health Concern in Adults: A Systematic Review", *Critical Reviews in Food Science and Nutrition*, v. 62, n. 20, pp. 1–12, 2021. <https://doi.org/10.1080/10408398.2021.1887075>.
5. Bezerra in Cavalcante J.B., Moreira T.M.V., Mota C.C., and Sichieri R., "Alimentação fora de casa e excesso de peso: uma análise dos mecanismos explicativos", *Revista Brasileira em Promoção da Saúde*, v. 29, n. 3, pp. 455–461, 2016. <https://doi.org/10.5020/18061230.2016.p455>.
6. Gesteiro E., García-Carro A., Aparicio-Ugarriza R., and González-Gross M., "Eating out of Home: Influence on Nutrition, Health, and Policies: A Scoping Review", *Nutrients*, v. 14, n. 6, p. 1265, 2022. <https://doi.org/10.3390/nu14061265>.
7. World Health Organization (WHO). Obesity and Overweight. Available at: <<https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>>. Retrieved on May 21, 2024.
8. Page M.J., McKenzie J.E., Bossuyt P.M., Boutron I., Hoffmann T.C., and Mulrow C.D. et al, "The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews" *British Medical Journal*, v. 372, n. 71, 2021, <https://doi.org/10.1136/bmj.n71>.
9. Platkin C., Yeh M., Hirsch K., Wiewel E.W., Lin C., and Tung H. et al, "The Effect of Menu Labeling with Calories and Exercise Equivalents on Food Selection and Consumption", *BMC Obesity*, v. 1, n. 1, 2014, <https://doi.org/10.1186/s40608-014-0021-5>.
10. Thorndike A.N., Riis J., Sonnenberg L.M., and Levy D.E., "Traffic-Light Labels and Choice Architecture", *American Journal of Preventive Medicine*, v. 46, n. 2, pp. 143–149, 2014, <https://doi.org/10.1016/j.amepre.2013.10.002>.
11. Antonelli R., and Viera A.J. "Potential Effect of Physical Activity Calorie Equivalent (PACE) Labeling on Adult fast-food Ordering and Exercise", *PLOS ONE*, v. 10, n. 7, p. e0134289, 2015. <https://doi.org/10.1371/journal.pone.0134289>.
12. Hunsberger M., McGinnis P., Smith J., Beamer B.A., and O'Malley J., "Calorie Labeling in a Rural Middle School Influences Food Selection: Findings from Community-Based Participatory Research", *Journal of Obesity*, <https://doi.org/10.1155/2015/531690>.
13. Lee M.S., and Thompson J.K. "Exploring Enhanced Menu Labels' Influence on Fast-Food Selections and Exercise-Related Attitudes, Perceptions, and Intentions" *Appetite*, v. 105, n. 105, pp. 416–422, 2016, <https://doi.org/10.1016/j.appet.2016.06.007>.

14. Reale S., and Flint S.W. "Menu Labelling and Food Choice in Obese adults: A Feasibility Study" *BMC Obesity*, v. 3, n. 1, 2016, <https://doi.org/10.1186/s40608-016-0095-3>.
15. Pérez C., Enrione J., Díaz-Calderón P., Vicente I., and Rossi M.C., "Effect of Calorie Labeling on Menu Selection: A Preliminary Study in Santiago, Chile", *Revista Chilena de Nutrición*, v. 44, n. 1, pp. 1-1, 2017, <http://dx.doi.org/10.4067/S0717-75182017000100001>.
16. Lee K., and Lee Y. "Parents' Meal Choices for Their Children at Fast-Food and Family Restaurants with Different Menu Labeling Presentations", *Nutrition Research and Practice*, v. 12, n. 3, p. 243, 2018, <https://doi.org/10.4162/nrp.2018.12.3.243>.
17. Petimar J., Ramirez M., Rifas-Shiman S.L., Mullen J., Roberto C.A., and Block J.P., "Evaluation of the Impact of Calorie Labeling on McDonald's Restaurant menus: A Natural Experiment", *International Journal of Behavioral Nutrition and Physical Activity*, v. 16, n. 1, 2019, <https://doi.org/10.1186/s12966-019-0865-7>.
18. Petimar J., Zhang F., Rimm E.B., Simon D., Cleveland L.P., and Gortmaker S.L. et al, "Changes in the Calorie and Nutrient Content of Purchased Fast-Food Meals after Calorie Menu Labeling: A Natural Experiment", *PLOS Medicine*, v. 18, n. 7, p. e1003714, 2021, <https://doi.org/10.1371/journal.pmed.1003714>.
19. Giazitzi K., Chrysanthakopoulou V., and Boskou G.A.. "Hypothetical Tavern Menu for the Evaluation of Calorie Selection through Menu Labelling", *Foods*, v. 11, n. 11, p. 1624, 2022, <https://doi.org/10.3390/foods11111624>.
20. Bleich S.N., Economos C.D., Spiker M.L., Vercammen K.A., VanEpps E.M., and Block J.P. et al., "A Systematic Review of Calorie Labeling and Modified Calorie Labeling Interventions: Impact on Consumer and Restaurant Behavior", *Obesity*, v. 25, n. 12, pp. 2018-2044, 2017, <https://doi.org/10.1002/oby.21940>.
21. Batista M.F., Carvalho-Ferreira J.P., Cunha D.T., and Rosso V.V., "Front-of-Package Nutrition Labeling as a Driver for Healthier Food Choices: Lessons Learned and Future Perspectives", *Comprehensive Reviews in Food Science and Food Safety*, v. 22, n. 1, pp. 535-586, 2022, <https://doi.org/10.1111/1541-4337.13085>.