

## REVIEW

## Policy action initiatives against obesity in Colombia: a literature review using the NOURISHING framework methodology Colombian policy actions against obesity

*Iniciativas de acción de política contra la obesidad en Colombia: una revisión de la literatura a partir de la metodología del marco NOURISHING*

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### Abstract

**Introduction:** In Colombia, obesity is a public health problem that must be addressed by the government through policy action initiatives (PAIs), that is, governmental actions that may or may not be implemented. **Objective:** To identify PAIs and policy action evaluations (PAEs) against obesity formulated in Colombia since 2005 using the NOURISHING framework methodology. **Materials and methods:** The search for evidence was conducted between March and August 2019 (with an update in August 2020) as follows: PAIs in government and civil society organization websites, and PAEs in PubMed, SciELO and the Sinergia repository. PAIs were classified according to NOURISHING policy areas. **Results:** A total of 42 PAIs with 82 lines of action were found: 16 (24 lines) implemented, 17 (37 lines) not implemented, and 9 (21 lines) with insufficient information to determine their implementation (21 lines). These PAIs encompassed all the NOURISHING framework policy areas. The implemented PAIs have more lines of action in the “Harness food supply chain and actions across sectors” area (8/24), while those that have not been implemented have more lines in the “Restrict food and beverage advertising” area (10/37). There were 13 PAEs, and most of them were about food security PAIs focused on food supply (4/13). **Conclusions:** Colombia has PAIs against obesity that address all the policy areas of the NOURISHING framework. Implemented PAIs focus on food supply, while non-implemented PAIs focus on regulatory measures. A greater government commitment is required in the implementation of PAIs that allow improving the dietary habits of the Colombian population, which will help reduce obesity rates in the country in the medium and long term.

### Resumen

**Introducción.** En Colombia, la obesidad es un problema de salud pública que el gobierno debe abordar mediante iniciativas de acción de política (IAP), es decir, acciones gubernamentales que pueden estar implementadas o no. **Objetivo.** Identificar, mediante la metodología del marco NOURISHING, las IAP y las evaluaciones de acción de política (EAP) contra la obesidad formuladas en Colombia desde 2005. **Materiales y métodos.** La búsqueda de la evidencia se realizó entre marzo y agosto de 2019 (con una actualización en agosto de 2020) de la siguiente manera: IAP: en sitios web del gobierno y de organizaciones de la sociedad civil; EAP: en PubMed, SciELO y el repositorio Sinergia. Las IAP se clasificaron en las áreas de política del marco NOURISHING. **Resultados.** Se encontraron 42 IAP con 82 líneas de actuación: 16 (24 líneas) implementadas, 17 (37 líneas) no implementadas, y 9 (21 líneas) sin información suficiente para determinar su implementación (21 líneas). Las IAP abordan todas las áreas de política del marco NOURISHING. Las IAP implementadas tienen más líneas en el área “Habilitar acciones multisectoriales y de suministro de alimentos” (8/24), mientras que las no implementadas, en “Restringir la publicidad de alimentos y bebidas” (10/37). Se identificaron 13 EAP, donde la mayoría fueron sobre IAP en seguridad alimentaria orientadas al suministro de alimentos (4/13). **Conclusiones.** Colombia tiene IAP contra la obesidad que abarcan todas las áreas de política del marco NOURISHING. Las IAP implementadas se enfocan en el suministro de alimentos y las no implementadas, en medidas regulatorias. Se requiere un mayor compromiso del gobierno en la implementación de IAP sobre medidas regulatorias que permitan mejorar los hábitos alimentarios de la población colombiana, lo que, en el mediano y largo plazo, ayudará a reducir las tasas de obesidad en el país en el mediano y largo plazo.

## Introduction

In Colombia, overweight, obesity and nutrition-related noncommunicable diseases (NCDs) are a public health priority.<sup>1</sup> At the national level, according to the National Nutrition Situation Survey 2015 (ENSIN 2015),<sup>2</sup> one in four schoolchildren (7-12 years) (24.4%) and more than half of the adult population (18-64 years) (56.5%) are overweight or obese. Furthermore, according to the World Health Organization (WHO), in 2016, cardiovascular diseases, cancer and diabetes accounted for 30%, 20% and 3% of NCD deaths in the country, respectively.<sup>3</sup>

The overweight and obesity epidemic in Latin American countries is being driven by the transition to a diet high in saturated fats, sugars and sodium, based on a high consumption of foods of animal origin, refined cereals, and processed and ultra-processed products.<sup>4,5</sup> A diet with these characteristics impacts not only human health, but also the health of the planet, as the production of these foods affects local ecosystems and fuels environmental degradation.<sup>6</sup>

The transition to an unhealthy diet depends on several factors such as income growth in a country or region, economic and trade policy liberalization, urbanization, and investment for improving the country's or region's infrastructure.<sup>4</sup> Consequently, to combat obesity and nutrition-related NCDs, Colombia requires state intervention based on intersectoral policies that guarantee access for the Colombian population to a healthy, sustainable, and environmentally friendly diet.<sup>5,6</sup>

In this regard, through the NOURISHING framework, the World Cancer Research Fund proposes 10 policy areas to promote healthy diets and reduce obesity and nutrition-related NCDs. This institution also established a methodology for updating the framework that allows for the categorization, monitoring, and reporting of policy actions and their assessments in each policy area.<sup>7</sup>

According to the NOURISHING framework, a policy action is any form of government action that includes, but is not limited to, legislation, regulations, decrees, rules, policies, programs, fiscal policies, actions, and voluntary agreements sponsored or endorsed by the government. Interestingly, with regard to policy action evaluation, the framework only addresses evaluations of their process or impact but does not specify the definition of policy action evaluation.<sup>7</sup>

In this article, any government action aimed at solving a public problem was considered a public policy action.<sup>8</sup> In turn, implemented and non-implemented policy actions were taken into account, and both types of actions were defined under the same term: "Policy Action Initiatives" (PAI).

Public policy evaluation is defined as the collection, verification and interpretation of information on the implementation and effectiveness of public policies and programs.<sup>9</sup> For the purposes of this work, the term "policy action evaluations" (PAE) groups together formal evaluations of public policies and programs and other documents (e.g., monitoring or implementation reports, surveys, and policy recommendations) that provide information on the follow-up of PAIs.

Therefore, the objective of this study is to identify, using the NOURISHING framework methodology, the PAIs and PAEs against obesity formulated in Colombia since 2005, as it will allow recognizing the areas of the NOURISHING framework that have been addressed in the country, as well as those that require better implementation strategies and further evaluation to adequately tackle the overweight and obesity epidemic in the country.

## Materials and methods

Following the NOURISHING framework methodology,<sup>7</sup> a literature review was conducted in two phases. During the first phase, PAI data were identified, selected and extracted; these processes were carried out by two reviewers trained to understand the policy areas defined in

this methodology and who met periodically to standardize the criteria for the classification of the PAIs in those policy areas. In the second phase, the principal investigator was in charge of identifying, selecting, and extracting data from the PAEs. Each phase is detailed below.

### Identification and selection of PAIs

The sources of information were established based on the reference methodology,<sup>7</sup> namely, reports and websites of international agencies, government websites, academic publications, updates from civil society organizations (e.g., news, opinion articles, briefing papers, interviews, reviews, etc.), news and communications with public policy-makers, policy experts, and stakeholders interested in their implementation.

Data were collected between March and April 2019 from the websites of government agencies or entities attached to the Colombian government (e.g., Ministry of Health and Social Protection, Senate of the Republic), civil society organizations (e.g., Educar Consumidores, Dejusticia), and the newspaper *El Tiempo*, which was included because it offers the possibility of searching for opinion articles and news using keywords.

First, a search was performed using the term “obesity” and then the equations described in Table 1; this process was carried out on all the websites consulted. The search was also conducted in the Educar Consumidores, the Administrative Department of Science, Technology and Innovation (Colciencias), the Bank of the Republic and the Senate of the Republic websites using each term. No filters by date or language of publication were used in any of the websites, with the exception of the website of the Senate of the Republic, where we searched for bills filed since the 2005-2006 legislative period.

**Table 1.** Search equations for each of the sources of information consulted.

Source	Search equations		
	Term or Equation 1	Boolean operator	Term 2
Websites of civil society organizations, * government agencies, † and newspaper <i>El Tiempo</i> .	Obesity	AND	Política
			Plan
			Estrategia
			Impuesto
			Alimentación
			Hábitos
			Sodio
			“Bebidas azucaradas”
Medline (PubMed) and SciELO	(Obesity AND Colombia)	AND	“Program Evaluation”
			“Health Impact Assessment”
			“Government Programs”
			Taxes
	Colombia	AND	“Food Labeling”
			“Carbonated Beverages”
			“Food Advertising”
			“Sodium, Dietary”

\* Civil society organizations: Educar Consumidores, Red PaPaz (<https://www.nocomasmasmientiras.org/>), and Dejusticia.

† Government or government agencies, and national entities: Ministry of Health, Ministry of National Education, Senate of the Republic, Bank of the Republic, Colciencias, and repository of the National System of Evaluation of Management and Results (Sinergia).

Source: Own elaboration.

Once the searches were completed, the evidence screening and selection process was carried out. First, by reading the titles, duplicate records were removed and texts that did not address the topic of interest of the present review were excluded. Then, based on the reading of the abstract, the informative or opinion texts and those that addressed the issues of interest at the local level (i.e., no national scope) or in foreign countries were excluded. Finally, the remaining texts were read in their entirety to ensure that they met the inclusion criteria.

Inclusion criteria: 1) texts on the reduction or prevention of obesity and/or nutrition-related NCDs; 2) texts addressing one of the 10 policy areas of the NOURISHING framework; 3) texts on a law, decree, resolution, government policy, national plan, national strategy or bill, or texts classified as such; 4) documents published since 2005.

Exclusion criteria: 1) informative or opinion texts; 2) texts dealing with issues of interest, but at the local level (i.e., no national scope) or in foreign countries.

The searches were updated on August 18, 2020, on all websites, except for Educar Consumidores, Colciencias, and El Tiempo since the former did not allow searching by keywords and the other two did not refer to any PAI or discussed PAIs already addressed in other sources until the end of 2019.

PAIs formulated since 2005 were included because that was the year in which the first ENSIN was conducted in the country (ENSIN 2005)<sup>10</sup> and the National Food and Nutrition Plan 1996-2005 was finalized.<sup>11</sup>

### Identification and selection of PAEs

The search for PAE was performed in May 2019 in the Medline (via PubMed) and SciELO databases using the search equations described in Table 1. Moreover, there were no filters by period or language of publication. This search was updated on August 16, 2020.

The screening and selection process of the studies retrieved in the literature searches was similar to that performed in the case of the PAIs: once duplicate records were removed, the titles of the documents were read and those that were not related to the subject matter of interest of the present study were excluded. Then, based on the reading of the abstract, the following types of studies were discarded: editorials, letters to the editor, reflection articles, as well as those articles that, even though addressed PAEs, did so locally (i.e., no national scope) or in other countries. Finally, the resulting studies were read in their entirety to verify whether they met the established inclusion criteria.

Inclusion criteria: 1) studies with a national scope (Colombia); 2) papers with authors considered as academics (whether independent or belonging to universities, civil society organizations, and government agencies or entities contracted by the latter); 3) studies published since 2005.

Exclusion criteria: 1) editorials, letters to the editor, reflection articles; 2) studies on PAEs with a local (i.e., no national scope) or foreign scope. In addition, a complementary search was conducted on August 16, 2019, in the Sinergia repository, which was updated on August 16, 2020. This search was carried out using the equations described in Table 1, but no results were obtained. Therefore, the filter "SECTOR" was used, which allowed to identify the PAEs made by the government organizations that formulated the most PAIs, namely, Ministry of Health and Social Protection, Ministry of Agriculture and Rural Development, Ministry of National Education, and Presidency of the Republic. After eliminating duplicates and excluding documents that, based on the reading of their title, were not related to the topic of interest of the present review, the full text of the remaining documents was read to identify the PAEs of the PAIs included in phase one of evidence search.

## Data extraction

The lines of action for each PAI were identified and classified according to the 10 policy areas of the NOURISHING framework,<sup>7,12</sup> as follows: N: nutrition label standards and regulations on the use of claims and implied claims on foods ; O: offer healthy food and set standards in public institutions and other specific settings ; U: use economic tools to address food affordability and purchase incentives; R: restrict food advertising and other forms of commercial promotion ; I: improve nutritional quality of the whole food supply; S: set incentives and rules to create a healthy retail and food service environment; H: harness supply chain and actions across sectors to ensure coherence with health; I: inform people about food and nutrition through public awareness; N: nutrition advice and counselling in healthcare settings; and G: give nutrition education and skills .

The data collected were discussed with scholars and researchers with expertise in food and nutrition public policies, who provided analytical elements for their study and recommended the inclusion of additional documents in the review. According to the NOURISHING methodology, “implementation” is defined as the moment when the policy action takes effect.<sup>7</sup> In Colombia, standards are in force from the date of publication or, failing that, six months after publication.<sup>13</sup>

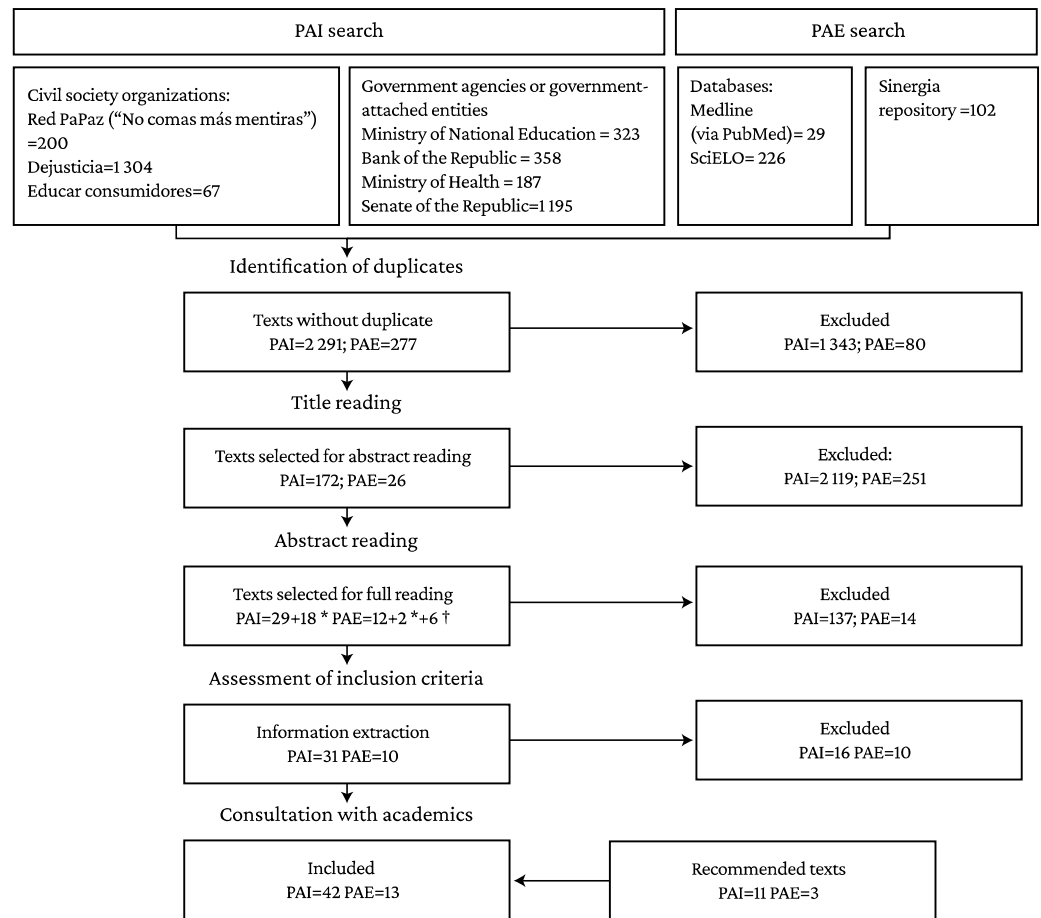
## Results

### Identification and selection of PAIs

After removing duplicates, 2 291 texts on PAIs were retrieved from the searches carried out on the websites of civil society organizations and government agencies. Subsequently, 2 256 texts were excluded in the title review and summary stages (2 119 and 137, respectively); in addition, 6 documents on PAEs were identified at this stage and included in the PAE selection process (described in the corresponding section). Therefore, in the full-text reading stage, 29 PAIs were reviewed, as well as 18 additional PAIs identified manually in the reference list of the 29 PAIs initially selected; of these 47 PAIs, 31 were selected for full analysis.

These 31 PAIs included documents such as the Food-Based Dietary Guidelines for the Colombian population over 2 years of age<sup>14</sup> and the Clinical Practice Guidelines for the Prevention, Diagnosis and Treatment of Overweight and Obesity in Adults,<sup>15</sup> which, although they are not a law, decree or government policy, are a PAI according to the NOURISHING framework.<sup>7</sup> Resolution 5166 of January 21, 2005, was also included; it adopts the operating regulations of the “Food Security Network” Program - RESA, a program that, according to said document, was created by the High Council for Social Action (Social Solidarity Network) of the Presidency of the Republic through Resolution 3300 of 2003.<sup>16</sup>

Finally, during the consultation meetings with food and nutrition public policy experts, another 11 PAIs that met the inclusion criteria were identified, so 42 PAIs were finally included for full analysis. Figure 1 shows the process of identification, screening and selection of PAIs and PAEs.



**Figure 1.** Flowchart of the searching and selection process of policy action initiatives and policy action evaluations.

PAI: policy action initiative; PAE: policy action evaluation.

\* PAI and PAE found in the reference list or mentioned in the documents selected for full-text reading.

† PAEs retrieved using the PAI search strategy.

The results of the Colciencias and El Tiempo searches were excluded due to the reasons mentioned in the Materials and Methods section.

Source: Own elaboration.

### Characteristics of the PAIs

The 42 PAIs included were classified as follows: 16 normative documents (laws, decrees, resolutions, etc.),<sup>1,16-30</sup> 2 government plans,<sup>31,32</sup> 5 national strategies,<sup>33-37</sup> 2 guidelines,<sup>14,15</sup> 5 bills,<sup>38-51</sup> 1 draft resolution,<sup>52</sup> and 1 government initiative.<sup>53</sup> It should be noted that, given that bills can be modified during their review by the Congress of the Republic, the versions identified in the search were analyzed or, in case of not having a specific reference, the first version published in the Congressional Gazette was taken into account.

The 16 PAIs classified as normative documents<sup>1,16-30</sup> were considered as implemented because they entered into force prior to their inclusion in the review. On the other hand, data collected were insufficient to determine the implementation of 9 PAIs.<sup>14,15,31-37</sup> Finally, the bills,<sup>38-52</sup> the government initiative,<sup>53</sup> and the draft resolution<sup>54</sup> were deemed as unimplemented PAIs. The PAIs included in the review are presented in Table 2.

**Table 2.** Policy action initiatives against obesity formulated in Colombia since 2005.

<b>PAIs implemented</b>	<b>Year</b>	<b>Reference</b>
Law 1355: Whereby obesity and the chronic non-communicable diseases associated with it are defined as a public health priority and measures are adopted for their control, care, and prevention	2009	1
Resolution 5166: By which the operating regulations of the “Food Security Network Program - RESA” are adopted	2005	16
Resolution 333: Which establishes technical regulations labeling or nutritional labeling requirements for packaged foods for human consumption	2011	17
Resolution 2508: Which establishes technical regulations labeling or nutritional labeling requirements for packaged foods for human consumption	2012	18
Resolution 684: Defining the Protocol for the Approval of New Health Claims for Foods	2012	19
Resolution 29452: Whereby the Technical-Administrative Guidelines, Standards and Minimum Conditions of the School Feeding Program - PAE are issued, and previous provisions are repealed	2017	20
Resolution 1841: Adopting the Ten-Year Public Health Plan 2012-2021	2013	21
Decree 975: By which the cases, content and manner in which information and advertising aimed at children and adolescents in their capacity as consumers must be presented are regulated	2014	22
Resolution 4150: Which establishes the technical regulations for energy drinks intended for human consumption	2009	23
Social Conpes Document 113: National Food and Nutrition Security Policy (PSAN)	2008	24
Decree 1927: Whereby the structure of the Instituto Colombiano de Bienestar Familiar - Cecilia de la Fuente de Lleras is modified, and the functions of its units are established	2013	25
Resolution 464: Adopting the Strategic Public Policy Guidelines for Peasant, Family and Community Agriculture, and issuing other provisions.	2017	26
Law 1955: Issuing the National Development Plan 2018-2022 “Pact for Colombia, Pact for Equity”	2019	27
Decree 2055: Which creates the Intersectoral Commission for Food and Nutritional Security, CISAN	2009	28
Resolution 3203: Through which the Methodological Manual for the elaboration and implementation of the Comprehensive Healthcare Routes (RIAS) is adopted, a group of Comprehensive Health Care Routes developed by the Ministry of Health and Social Protection within the Comprehensive Healthcare Policy (PAIS) is adopted, and other provisions are enacted	2016	29
Law 1804: Whereby the State Policy for the Comprehensive Development of Early Childhood from Zero to Forever is established and other provisions are enacted	2016	30
<b>PAI without evidence to determine implementation</b>	<b>Year</b>	<b>Reference</b>
Food-Based Dietary Guidelines for the Colombian population over the age of 2 years old	2015	14
Clinical Practice Guideline for the prevention, diagnosis and treatment of overweight and obesity in adults	2016	15
National Food and Nutrition Security Plan (PNSAN) 2012 - 2019	2013	31
Ten-Year Breastfeeding Plan 2010-2020: A public imperative for the protection and nutrition of children under two years of age	2010	32
National Technical Guideline for the Promotion of Fruits and Vegetables. Strategies for the supply, handling, sale and promotion of fruits and vegetables	2013	33
Healthy Food Environments Strategy	2016	34
National Strategy to Reduce Salt/Sodium Intake 2012-2021	2015	35
National Guidelines for the Implementation and Development of Healthy Environment Strategies: Healthy School and Healthy Housing	2006	36
Information, Education and Communication Strategy on Food and Nutritional Security for Colombia: Implementation programs	2016	37
<b>PAIs not implemented</b>	<b>Year</b>	<b>Reference</b>
Bill 007 of 2017 Senate: Whereby a nutrient profile model for processed and ultra-processed food products is adopted and other provisions are enacted “Law for the informed consumption of sugar, salt, and fats”	2017	38
Bill 019 of 2017 House of Representatives: Whereby public health measures are established for the control of obesity and other derived non-communicable diseases, and other provisions are enacted	2019	39
Bill 214 of 2018 House of Representatives: Whereby access to information necessary to promote healthy food environments and prevent non-communicable diseases is promoted, and other provisions are adopted	2018	40
Bill 167 of 2019 House of Representatives: Whereby measures are adopted to promote healthy food environments and prevent non-communicable diseases, and other provisions are adopted (Healthy Food Environments)	2019	41
Bill 168 of 2019 House of Representatives: Whereby a strategy is adopted to foster school environments that offer balanced and healthy food in public and private educational institutions	2019	42
Bill 178 of 2016 House of Representatives: Whereby a structural tax reform is adopted, mechanisms for the fight against tax evasion and avoidance are strengthened, and other provisions are enacted	2016	43
Bill 171 of 2019 House of Representatives: Whereby public health measures are adopted, healthy nutrition policies are created, and other provisions are enacted	2019	44

**Table 2.** Policy action initiatives against obesity formulated in Colombia since 2005. (continued)

PAIs not implemented	Year	Reference
Bill 022 of 2017 House of Representatives: Whereby measures for the promotion and protection of children and adolescents are established through the regulation of advertising of ultra-processed food products and foods that cause damage to health, and other provisions are enacted	2017	45
Bill 007 of 2016 Senate: Whereby standards on nutritional information, labeling of sugary drinks, and other provisions are established	2019	46
Bill 129 of 2019 Senate: Whereby breastfeeding and optimal infant feeding practices are protected and encouraged —Gloria Ochoa Parra Law—, and other provisions are enacted	2019	47
Bill 151 of 2013 Senate: By means of which measures to prevent arterial hypertension and excessive consumption of salt-sodium in the Colombian population are dictated	2014	48
Bill 139 of 2018 House of Representatives: Whereby mechanisms are established to favor the participation of peasant, family and community agriculture in public food procurement markets	2018	49
Bill 164 of 2017 Senate: Whereby the framework for the public policy for food security with nutritional quality is established	2017	50
Bill 054 of 2014 Senate: Whereby the National System for Food and Nutritional Security (Sinsan) and the National Food Security Agency are created, and other provisions are established	2014	51
Proyecto de Ley 171 de 2020: Whereby the Special System for the Progressive Guarantee of the Human Right to Adequate Food and Nutrition is created, the Intersectoral Commission for Food and Nutritional Security is modified, and other provisions are enacted	2020	52
National government initiative for nutrition facts labels for packaged foods	2020	53
Draft resolution: Whereby the technical regulation defining the sodium content limits for the main foods prioritized under the National Sodium Intake Reduction Strategy is established, and other provisions are issued	2019	54

PAI: policy action initiative.

Source: Own elaboration.

### Classification of PAIs according to the NOURISHING framework

The 42 PAIs established 82 lines of action covering all policy areas of the NOURISHING framework, as shown in Table 3.

**Table 3.** Lines of action of policy action initiatives against obesity formulated in Colombia since 2005 grouped according to the policy areas of the NOURISHING framework<sup>7</sup>.

Policy area (number of action lines)	Lines of action	PAI (reference)		
		Implemented	Not implemented	No evidence of implementation
N (9)	Mandatory nutrient lists on packaged food	17		
	Trans fats included in mandatory nutrient labels	18		
	Clearly visible “interpretative” labels and warning labels		38-41,53	
	Rules on health claims	17,19		
O (8)	Healthy food supply in schools	1		
	Fruit and vegetable initiatives in schools and other specific locations			33
	Fruit and vegetable initiatives in the workplace			34
	Mandatory standards regulating the food offered in the school feeding program	20		
	Mandatory standards for foods available in schools, including restrictions on unhealthy food		42	
Initiatives for the implementation of healthy tuck shops		39-41		
U (2)	Health-related food taxes		43,44	
R (14)	Regulation of broadcast food advertising to children	1,21,22		
	Mandatory regulation of broadcast food advertising to children		45	
	Mandatory regulation of food advertising through any medium		39-41	
	Mandatory regulation of marketing of specific food items and beverages	23	46,47	
	Mandatory regulation of specific marketing techniques		40,44	
	Mandatory regulation of food marketing in schools		40,42	



**Table 3.** Lines of action of policy action initiatives against obesity formulated in Colombia since 2005 grouped according to the policy areas of the NOURISHING framework<sup>7</sup>. (continued)

Policy area (number of action lines)	Lines of action	PAI (reference)		
		Implemented	Not implemented	No evidence of implementation
I (5)	Voluntary reformulation of food products	21		35
	Mandatory limits of trans fats in food products	18		
	Mandatory limits on level of salt in food products		48,54	
S (2)	Initiatives to increase the availability of healthier food in stores and food service outlets			34
	Incentives and rules to reduce salt in food service outlets		48	
H (17)	Public procurement through 'short' chains	20,24-27	39,49	31
	Community food production	16,26	31,34,36	50
	Governance structures for multi-sectoral/stakeholder engagement	28	51,52	
I (9)	Development and communication of food-based dietary guidelines			14
	Public awareness, mass media and informational and social marketing on healthy eating	1	39-41,44	31,37
	Public awareness campaigns concerning salt			35
N (7)	Guidelines and programs to provide support in primary care to people who are overweight and obese	29		15
	Nutritional counseling in primary health care	30	42	32,34
	Training for health professionals			34
G (9)	Nutrition education programs in schools	1	42	31,36
	Nutrition education on curricula			34
	Initiatives to train schoolchildren on growing food			34,36
	Workplace or community health schemes		44	
	Educational interventions on healthy foods in higher education institutions		44	

PAI: policy action initiative.

Source: Own elaboration.

In the PAIs implemented (n=16), 24 lines of action were identified, and the highest number of lines of action was found in the “H” policy area (n=8). In turn, there were 21 lines of action in the PAIs without sufficient evidence to determine their implementation, and area “G” was the policy area with the most lines of action (n=5). Finally, 37 lines were identified in non-implemented PAIs (n=15), with “R” being the policy area with the most lines of action (n=10). The distribution of the lines of action established by the PAIs according to the policy areas of the NOURISHING framework, their implementation status, and year of publication are presented in Figure 2.

### Identification and selection of PAEs

After removing duplicates, 277 documents on PAEs were retrieved from Medline, SciELO, and Sinergia. Subsequently, 265 studies were excluded in the title and abstract reading stages (251 and 14, respectively), so 12 PAEs were reviewed in the full-text reading stage, as well as 6 PAEs retrieved using the PAI search strategy and 2 PAIs manually identified in the reference list of the 29 PAIs selected for full-text reading; of these 20 PAEs, 10 were included in the review for full analysis.

It should be noted that among these 10 PAEs, local purchasing records from all regions of the country were included by the Colombian Institute of Family Welfare under its Local Purchasing Strategy,<sup>55</sup> which seeks, on the one hand, to support small farmers by purchasing their products, and, on the other hand, to contribute to the food and nutritional security of the country's children and adolescents.

Finally, after consultation meetings with food and nutrition public policy experts, two PAEs recommended by them were added, as well as the ENSIN 2015,<sup>2</sup> which contains

information collected after the implementation of the obesity law.<sup>1</sup> Therefore, 13 PAEs were finally included in the review, which are presented in Table 4.

																Count							
																I (n=24)	Ni (n=37)	In (n=21)					
Lines of action in each policy area	N						••	••							xx	x	x	x		4	5	0	
	O				•										†	•x	x	xx		2	4	2	
	U														x			x		0	2	0	
	R					••					•	•			x	xx	xx	xx	xx	4	10	0	
	I								•	•x					†	x				2	2	1	
	S										x					†				0	1	1	
	H	•	†	•		•					•†	x			†	•••		•x	x	8	5	4	
	I					•					†			††	†	x	x	xx		1	4	4	
	N						†								††			x		2	1	4	
	G			††		•						†			††			xxx		1	3	5	
			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020					
		Year of publication																					

**Figure 2.** Distribution of the action lines established by the policy action initiatives in the NOURISHING framework’s policy areas based on their implementation status and year of publication.

I: implemented; PAI: policy action initiative; Ni: Not implemented; In: insufficient evidence to determine implementation.

- Line of action established in an implemented PAI.
  - x Line of action established in a non-implemented PAI.
  - † Line of action established in PAI without sufficient evidence to determine its implementation.
- Source: Own elaboration.

**Table 4.** Policy action evaluations on overweight and obesity in Colombia.

Policy action evaluation	Year of publication
Evaluation of results from the ReSA food safety network <sup>56</sup> *	2007
Executive evaluation: Food Security Network Program - ReSA <sup>57</sup> *	2009
Strengthening of the Healthy Environments Strategy and its implementation, within the framework of the National Development Plan and commitments <sup>58</sup> †	2012
Operations and performance evaluation to determine the degree of effectiveness of the School Feeding Program (PAE) <sup>59</sup> *	2013
Nutritional content of foods and beverages advertised in Colombia during children’s viewing slots <sup>60</sup> ‡	2014
Institutional and performance evaluation of the National Food and Nutrition Security Policy (PSAN) <sup>61</sup> *	2015
First follow-up report on the National Food and Nutrition Security Plan 2012-2019 <sup>62</sup> †	2016
Process evaluation of the Ten-Year Breastfeeding Plan 2010-2020 <sup>63</sup> †	2016
Knowledge, perceptions, understanding and use of three nutrition labeling formats to make food decisions among consumers in Colombian households <sup>64</sup> †	2017
Obesity Prevention Study - Labeling Report 2017 <sup>65</sup> **	2017
Institutional and performance evaluation of the Comprehensive Early Childhood Care Policy from Zero to Forever <sup>66</sup> *	2018
ENSIN: National Health and Nutrition Situation Survey 2015 <sup>2</sup> †	2019
Local purchasing strategy: Local purchasing in regions <sup>55</sup> †	2019

\* PAE conducted by advisors hired by the national government.  
 † PAE conducted by governmental or national government agencies.  
 ‡ PAE conducted by academics.  
 \*\* PAE conducted by civil society organizations.

Source: Own elaboration.

## Characteristics of PAEs

In terms of authorship, 6 PAEs were carried out by government and/or national government entities:<sup>2,55,58,62-64</sup> 5 by advisors hired by the national government,<sup>56,57,59,61,66</sup> 1 by academics,<sup>60</sup> and 1 by civil society organizations.<sup>65</sup>

In terms of the issues evaluated, 4 PAEs addressed food security policies and programs<sup>56,57,61,62</sup> and 2 discussed perceptions and use of nutrition labels.<sup>64,65</sup> The remaining PAEs assessed different issues, namely, the Healthy Environments Strategy,<sup>58</sup> the School Feeding Program (PAE),<sup>59</sup> television advertising of food and drink products,<sup>60</sup> the Ten-Year Breastfeeding Plan,<sup>63</sup> the Local Purchasing Strategy,<sup>55</sup> and the Comprehensive Early Childhood Care Policy from Zero to Forever.<sup>66</sup>

It should be noted that the PAE of the School Feeding Program<sup>59</sup> was carried out before the corresponding PAI<sup>20</sup> became effective, so this PAE could reflect the evaluation of previous program guidelines.

## Discussion

According to the evidence found in this review, 42 PAIs were formulated in Colombia between 2005 and 2020 and they, in turn, established 82 lines of action that address all policy areas of the NOURISHING framework.<sup>7</sup> In addition, “R” (restrict food advertising and other forms of commercial promotion), “H” (harness food supply chain and actions across sectors to ensure coherence with health), and “G” (give nutrition education and skills) were the policy areas with the highest number of lines of action that were not implemented (n=10), implemented (n=8), or with insufficient evidence of their implementation (n=5), respectively. Moreover, only 13 PAEs were found, with food safety being the most commonly evaluated topic.

According to Pérez-Tamayo *et al.*,<sup>67</sup> between 2000 and 2015, the development of public food and nutrition policies in Colombia was based on the axes of food and nutrition security (food availability, access to food, food consumption, and biological use of food).<sup>24,67</sup> Perhaps for this reason, implemented PAIs focus on the “H” policy area, particularly on food supply, while food security (specifically the lines of action in food supply) is the most frequently evaluated issue by the PAEs.<sup>56,57,61,62</sup>

Conversely, the scarce evaluation of the other PAIs could be attributed to the influence of particular interests of the competent authorities,<sup>68</sup> as well as to their lack of experience in these initiatives, since the inclusion of obesity in the country’s public agenda is rather recent.<sup>69</sup> Consequently, food and nutrition policies in Colombia continue to focus on the prevention of food insecurity and malnutrition.<sup>69</sup>

A high degree of heterogeneity among the PAEs identified (reports and follow-up records of political actions, surveys and executive, institutional, operational, performance, and evaluation related to the implementation process of political actions) was also observed, which made it impossible to carry out detailed analyzes consistent with the objectives of the present study. In this sense, further work is needed to consider the additional processes necessary to analyze these PAEs in depth. Nevertheless, the efforts of the individuals and organizations involved in performing the PAEs are noteworthy, as they help to guarantee the right of citizens to be informed about the government actions that affect them.<sup>70</sup>

With regard to unimplemented PAIs, 7 bills<sup>38-41,43-45</sup> on measures for overweight and obesity prevention were identified,<sup>71</sup> namely, warnings on front-of-package labeling,<sup>38-41</sup> healthy taxes,<sup>43,44</sup> and regulation of advertising of unhealthy food and drink products for

children and adolescents.<sup>39-41,45</sup> Of these, at the time of preparation of this study, 2 were still in the process of review and discussion in the Congress of the Republic to define whether or not they were passed as laws,<sup>41,44</sup> 4 had been filed (although this does not mean that the bill was rejected, but that the bill was “shelved”, but not forgotten),<sup>38-40,45</sup> and 1 passed as law, but without the inclusion of the health tax.<sup>43</sup>

The lack of implementation of regulatory measures for the prevention of overweight and obesity in the country could be driven by corporate political activity (CPA), defined as corporate attempts to shape government policies in favor of corporate interests.<sup>72</sup> In this regard, it has been reported that in Latin America and the Caribbean, the ultra-processed food products industry employs CPA strategies during the development of national public health policies in the region.<sup>73</sup>

In this regard, it has been described that the food industry uses 6 CPA strategies to influence the development of public health policies and their outcomes, including:

- i) information and messaging (e.g., lobbying with policy makers, stressing the importance of industry in the economy, promoting deregulation, framing the debate on food and other public health issues in favor of industry);
- (ii) financial incentives (funding and providing financial incentives to political parties and policymakers);
- (iii) building constituency (establishing relationships with opinion leaders, health organizations, policy makers and the media, and seeking to engage with communities);
- (iv) legal (taking or threatening to take legal action against public policies contrary to the interests of industry and influencing the development of trade and investment agreements);
- v) policy substitution (designing and promoting more lax alternatives compared to mandatory public health policies, such as voluntary self-regulatory initiatives or non-regulatory initiatives); and
- (vi) opposition fragmentation and destabilization (e.g., criticizing public health advocates, or infiltrating, monitoring and distracting public health advocates, groups or organizations).<sup>73</sup>

Recent studies suggest that the food industry in Colombia negatively exerted an influence to prevent the approval of laws on the tax on sugary drinks<sup>74</sup> and on warnings on front-of-package labeling.<sup>75</sup> Despite this, in February 2020, the Presidency of the Republic made public the initiative to implement front-of-package labeling,<sup>53</sup> but at the time of writing this article, such an initiative had not become an official law.

It should be noted that, according to the NOURISHING methodology, voluntary agreements and actions of companies can be considered as policy actions, as long as they are endorsed or sponsored by the government.<sup>7</sup> However, in Latin America, voluntary and self-regulatory initiatives in the ultra-processed food industry have been defined as CPA strategies.<sup>73</sup> Therefore, the conflict between both definitions requires further discussion by food and nutrition public policy experts in the region.

On the other hand, the increasing prevalence of overweight, obesity<sup>2</sup> and nutrition-related NCDs<sup>3</sup> in the country, coupled with the paucity of information on the implementation and effectiveness of PAIs regarding food and nutrition, suggest that current PAIs are deficient. Thus, it is imperative to approve cost-effective regulatory initiatives that generate a timely and significant impact on the Colombian population's nutritional health and that can be subject to an adequate evaluation and follow-up system.<sup>71</sup>

Regulatory policy actions that have so far proven to be effective in reducing overweight and obesity rates in the region are front-end labeling and restriction of advertising of high-calorie foods, saturated fats, sugars and sodium in Chile,<sup>76</sup> as well as the tax on sugary drinks and non-staple foods with high energy density in Mexico.<sup>77</sup> Based on the Chilean experience, in order to implement these measures, stakeholders must join forces and generate a strong sense of awareness among the competent authorities and parliamentarians regarding the pressing need to find a solution to the public health problems related to overweight and obesity.<sup>78</sup>

In Colombia, social mobilization with respect to regulatory measures against overweight and obesity is led by civil society through the Alianza por la Salud Alimentaria (Alliance for Food Health), a coalition of social organizations, non-governmental organizations, academics and researchers working on the rights to food health, a healthy food environment, adequate food and food security, sovereignty and autonomy in the country.<sup>79</sup> However, the academy's involvement in these initiatives is recent and not yet consolidated.

Members of the academic and scientific community play an important role in defining the public health problem of overweight and obesity, as well as in the development of solutions and decision-making regarding the implementation of public policies aimed at solving this problem. In each of these processes, scientific reason is a source of legitimacy for public policy actions.<sup>80</sup> For this reason, greater participation of these actors in the development of public policies in food and nutrition will enhance the efforts of civil society in favor of the approval of regulatory measures aimed at reducing the prevalence of overweight and obesity in the country, such as the front-of-package labeling law, the regulation of advertising for ultra-processed foods high in saturated fat, salt and sugars, healthy taxes, and other measures designed to promote healthy food environments in the country. In addition, such participation should be free from conflicts of interest, so that these policy actions are not adjusted or adapted to meet interests other than those related to public health.<sup>81</sup>

One of the main strengths of this review is that it is the first study to identify PAIs and PAEs aimed at preventing overweight and obesity in Colombia. Furthermore, the use of the NOURISHING framework, an internationally standardized methodology, allowed for a comprehensive and systematic mapping of these documents. In this sense, the results reported here are a starting point for encouraging the monitoring and evaluation of the PAIs identified herein.

At the same time, it should be noted that this review has some limitations related to the fulfillment of some aspects of the NOURISHING methodology: (i) besides the PAIs and PAEs identified in systematic searches of electronic databases and other sources of information that met the inclusion criteria, documents suggested by academic experts on the subject were included; (ii) due to the lack of information available in the search sources, it was not verified which PAIs were still in force, nor what their degree of implementation was, and, finally, (iii) the methodological quality of PAEs was not assessed.

## Conclusions

Colombia has PAIs against obesity with lines of action covering all policy areas established in the NOURISHING framework. However, implemented PAIs focus on food supply and unimplemented PAIs on regulatory measures. Further government engagement is required to implement PAIs on regulatory measures such as restricting the advertising of unhealthy foods and drinks, along with adequate evaluation and monitoring of these PAIs. In the medium and long term, this will contribute to improving the eating habits

of the population and, therefore, to reducing the rates of overweight and obesity and nutrition-related NCDs in the country.

### Conflicts of interest

None stated by the authors.

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