Added sugars and low-calorie sweeteners on labels of packaged foods sold in Brazil

Rossana Pacheco da Costa Proença
Tailane Scapin, Luiza dos Santos Figueiredo, Ana Carolina Fernandes
Introduction

Sugars and syrups added to foods and beverages during food processing, preparation, or meals

ADDED SUGARS

INTAKE

WORLDWISE

9% energy intake (2002)/
17% energy intake (2014)

BRAZIL

15% energy intake (2012)

HEALTH INJURIES

Tooth decay
Obesity
Diabetes
Hypertension
Cardiovascular diseases

RECOMMENDATIONS

WHO (2015)

<10% energy intake (strong)
<5% energy intake (conditional)

Dietary Guidelines from 85 countries: avoid added sugars!

1 UK, 1989; JOHNSON et al., 2009; FDA, 2014; USDA, 2015; SCAPIN; FERNANDES; PROENÇA, 2017; 2FAO, 2014; 3LOUZADA et al., 2015; 4TE MORENGA; MALARD; MANN, 2013; WANG et al., 2014; FATTORE et al., 2016; FRANTSVE-HAWLEY et al., 2017; ASGARI-TAEE et al., 2018; MAKAREM et al., 2018; 5WHO, 2015; 6FAO, 2018.
Introduction

**PACKAGED FOODS**

Main source of intake

**ADDED SUGARS → REPLACEMENT BY LOW-CALORIE SWEETNERS?**

**HEALTH INJURIES**

- Diabetes
- Metabolic syndrome
- Cardiovascular disease
- Glut microbiota decay

Controversial health effects

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1 FAO, 2014; WITTEKIND; WALTON, 2014; STEELE et al., 2016; CEDIEL et al., 2017; RHANDPUR, 2017; FISBERG et al., 2018; SHARMA et al., 2016; SWITHERS, 2016; AZAD et al., 2017 RUIZ-OJEDA et al., 2019
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- Diabetes
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- Glut microbiota decay
Brazilian food labelling regulation

Sugar information → not mandatory on Nutrition Facts Table (NFT)

Only way to identify sugars and low-calorie sweeteners

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1BRASIL, 2003; BRASIL, 2002.
To analyze the presence and types of added sugars and low-calorie sweeteners in the labels of packaged foods sold in Brazil
Methods

Food labelling Census - large supermarket in Brazil

Intentional place choice

To investigate packaged foods from different brands sold in national context

Criteria for defining the supermarket

✓ Belonging to one of the ten largest supermarket chain in Brazil

✓ Have a store located in the city of Florianópolis (Federal University of Santa Catarina)
Methods

Data collection

✓ All packaged food products subject to Brazilian and Mercosur Food Labeling Regulation were included in the survey.

✓ Product data (name and type), nutrition information (energy, carbohydrate, protein, total fat, saturated fat, trans fat, fiber, and sodium per serving) and list of ingredients.
Methods

Farinha de trigo enriquecida com ferro e ácido fólico, ovo integral, açúcar, cobertura sabor chocolate, recheio sabor chocolate (18%) [gordura vegetal, açúcar, cacau em pó, glucose, aromatizantes, emulsificante: lecitina de soja (INS 322), conservador: ácido ascórbico (INS 200) e umectante: glicerina (INS 422)], calda açucarada, glucose, riscas sabor chocolate meio amargo, leite integral, carbonato de cálcio, gordura vegetal, sal, vitaminas: B1, B2, niacina, B6 e A, umectantes: sorbitol (INS 420) e glicerina (INS 422), emulsificante: mono e diglicerídeos de ácidos graxos (INS 471), fermentos químicos: pirofosfato ácido de sódio (INS 450i), bicarbonato de sódio (INS 500ii), fosfato monocálcico (INS 341i) e carbonato de cálcio (INS 170i), conservadores: propionato de cálcio (INS 282) e ácido sórbico (INS 200)
Methods

- **ADDED SUGARS (AS) identification**
  - Systematic literature review (types)
  - Chemistry books
  - Discussion with experts

- **LOW-CALORIE SWEETENERS (LCS) identification**
  - Allowed by Brazilian food labelling law
  - 15 categories (18 names)

**SCREENING ON THE LIST OF INGREDIENTS → Cluster analysis**
Results

4539 packaged foods and beverages analysed

72% Have some sweetener

60% only AS

1% only LCS

11% AS + LCS

Added sugars (179 names)
Most commons: cane sugar, maltodextrina, and glucose syrup

Low-calorie sweeteners
Most commons: acesulfame potassium, sucralose, and aspartame
Results

- All food products
- Cakes, cookies, and bakery products
- Milk and dairy products
- Breakfast cereals and cereal bars
- Soft drinks
- Bread, flours, salted crackers, and grain products
- Chocolate, desserts, and sweets
- Sugar, honey, jam, and syrups
- Snack foods
- Canned fruits and pickled vegetables

Foods containing only added sugars
Foods containing only low-calorie sweeteners
Food containing both
Food containing neither
Results

Added sugars in SALTY FOODS

Processed meat: AS presence

Gravies, sauces, ready-made seasonings, broths and ready-to-eat dishes: AS presence

Canned vegetables: AS presence
Discussion

71% of foods → AS presence

13% of foods → LCS presence

Twice → US (6%)¹
2.6 times greater → Spain (5.1%)²
5.5 times greater → Canada (1.8%)³

Safety?

11% of foods → both AS + LCS

Why put together?

NO SUGAR INFORMATION

LIST OF INGREDIENTS

Maltodextrin
Glucose syrup
Fructose

How to calculate?

<10% energy intake

NG et al., 2012; SAMANIEGO-VAESKEN et al., 2018; BERNSTEIN et al., 2016.
Conclusion

The majority of packaged foods available for purchase in Brazil have AS, LCS or both in their composition.

Information on these components need to be clearer on food labels.

It is necessary the revision of the Brazilian legislation on food labeling by making the information easier to understand by consumers.
PRESENTATION WITH DATA FROM


Researches on going

1. Systematic review of sugars information on food label and influence on consumer’s understanding and food choice

2. Focus groups with college students in regarding comprehension about sugars and food label formats – sugars information

3. A randomized controlled trial with college students about formats of sugars information on food label and influence on food choice
Authors contacts

Rossana Pachedo da Costa Proença
- Research Gate: https://www.researchgate.net/profile/Rossana_Proenca
- Scholar Google: https://scholar.google.com.br/citation?user=9Ir3WMAAAAJ&hl=pt-BR&oi=ao

Tailane Scapin
- Research Gate: https://www.researchgate.net/profile/Tailane_Scapin
- Scholar Google: https://scholar.google.com.br/citation?user=Ieqy9EAAAAAJ&hl=pt-BR&oi=ao

Ana Carolina Fernandes
- Research Gate: https://www.researchgate.net/profile/Ana_Carolina_Fernandes
- Scholar Google: https://scholar.google.com.br/citation?user=M7Z-ejAAAAAJ&hl=pt-BR&oi=ao
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