

# Advice for salt, sugar and fat intake habits among adults: a national-based study

## *Recebimento de orientação sobre consumo de sal, açúcar e gorduras em adultos: um estudo de base nacional*

Suele Manjourany Silva<sup>I</sup>

Luiz Augusto Facchini<sup>I</sup>

Elaine Tomasi<sup>I</sup>

Roberto Piccini<sup>II</sup>

Elaine Thumé<sup>III</sup>

Denise Silva da Silveira<sup>II</sup>

Fernando Vinholes Siqueira<sup>IV</sup>

Alitéia Santiago Dilélio<sup>I</sup>

Bruno Pereira Nunes<sup>I</sup>

Mirelle de Oliveira Saes<sup>V</sup>

<sup>I</sup>Postgraduate Program in Epidemiology, School of Medicine, *Universidade Federal de Pelotas* – Pelotas (RS), Brazil.

<sup>II</sup>Department of Social Medicine, School of Medicine, *Universidade Federal de Pelotas* – Pelotas (RS), Brazil.

<sup>III</sup>Nursing school, *Universidade Federal de Pelotas* – Pelotas (RS), Brazil.

<sup>IV</sup>School of Occupational Therapy, *Universidade Federal de Pelotas* – Pelotas (RS), Brazil.

<sup>V</sup>Postgraduation Program in Health Sciences, *Universidade Federal do Rio Grande* – Rio Grande (RS), Brazil.

**Corresponding author:** Suele Manjourany Silva. Departamento de Medicina Social. Avenida Duque de Caxias, 250, CEP: 96030-000, Pelotas, RS, Brazil. E-mail: sumanjou@gmail.com

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## Abstract

**Introduction:** A healthy diet is recognized as an important strategy for promoting health as an essential part of non-pharmacological therapy of various health problems. **Objective:** To analyze the reported advice for the intake of salt, sugar and fat for the Brazilian adults living in urban areas. **Methodology:** National-based cross-sectional study with 12,402 adults interviewed in 100 Brazilian cities. **Results:** The most prevalent advice was to low fat intake (38%), followed by the advice to low salt and sugar intake (36%) and sugar (29%). The percentage of receiving different advice was similar and more common among women, older people, those with a partner, higher economic class, former smokers, active and in person with physician diagnoses of hypertension, diabetes and overweight. People with white skin color received more advice to eat healthy food, except for the orientation to low salt intake. **Conclusion:** The results show a low prevalence of advice, which configures a missed opportunity to prevent health problems. Although dietary counseling should not be understood only as the transmission of advice regarding some nutrients, it is important to develop actions in order to qualify services and health professionals, allowing the population to have access to qualified information about the benefits of having healthy lifestyles.

**Keywords:** Orientation. Feeding. Healthy behavior. Cross-sectional studies. Primary health care. Health promotion.

## Resumo

**Introdução:** A alimentação saudável é amplamente reconhecida como uma importante estratégia para promoção da saúde e também como parte essencial da terapia não farmacológica de diversos agravos à saúde.

**Objetivo:** Investigar o recebimento de orientação para ingestão de pouco sal, açúcar e gorduras na população adulta do Brasil.

**Metodologia:** Estudo transversal, de base nacional, com 12.402 adultos entrevistados em 100 cidades brasileiras. **Resultados:** A orientação mais prevalente foi para ingestão de pouca gordura (38%), seguida das orientações para ingestão de pouco sal (36%) e açúcar (29%). O perfil de recebimento das diferentes orientações foi bastante similar e foi mais frequente entre mulheres, mais velhos, com companheiro, de nível econômico mais elevado, ex-tabagistas, ativos e portadores de hipertensão arterial, diabetes e excesso de peso. Indivíduos de cor da pele branca receberam mais orientação, com exceção da orientação para ingestão de pouco sal. **Conclusão:** A orientação é pouco realizada, configurando uma oportunidade perdida de prevenção à saúde. Embora a orientação alimentar não deva ser entendida apenas como a transmissão de orientações sobre alguns nutrientes, é importante o desenvolvimento de ações visando à qualificação de serviços e profissionais de saúde, para que a população tenha à disposição informações qualificadas sobre os benefícios de se ter hábitos saudáveis de vida.

**Palavras-chave:** Orientação. Alimentação. Comportamentos saudáveis. Estudos transversais. Atenção primária à saúde. Promoção da saúde.

## Introduction

A healthy diet is widely recognized as an important strategy to promote health, and also as an essential part of non-pharmacological therapy for several health conditions<sup>1</sup>.

Many studies show that counseling for a healthy diet is extremely important for healthy individuals, since it could decrease the incidence of the main risk factors for problems such as arterial hypertension, hypercholesterolemia, diabetes and obesity. However, the benefits of counseling are also relevant for individuals who are already affected by these conditions, with the objective of a more favorable progress of the issue<sup>2</sup>.

The National Policy of Health Promotion provides the universal access to information about healthy lifestyles by means of recommendations, campaigns, programs, messages, warnings and monitoring from health and media professionals, as well as teachers<sup>3</sup>. However, the role of health professionals in general, especially those working in primary health care, is extremely important to promote a healthy lifestyle, since they deal directly with patients who have high risk of non-communicable diseases and conditions<sup>1,4</sup>.

Together with the purposes of health promotion, the National Policy of Nourishment and Nutrition was created with the objective of improving the nutrition conditions of the Brazilian population, which promotes, among other actions, adequate and healthy eating practices<sup>5</sup>. Therefore, the Eating Guide for the Brazilian Population was elaborated to publicize the diet and the adoption of healthy lifestyles in order to prevent and control chronic non-communicable diseases and nutritional deficiencies<sup>6</sup>.

As to receiving counseling, a study conducted in the United States detected in patients who had just left the appointment that nutritional counseling occurred in 24% of the appointments; out of these, 17% were caused by acute problems, 30% by chronic diseases and 41% by preventive and prophylactic measures. The mean time of these orientations was five minutes<sup>7</sup>. In another study

conducted in the same country, 55% of the interviewed medical doctors reported advising their patients on health diet<sup>8</sup>.

A national-based cross-sectional study performed with American patients found a 70% prevalence of diet counseling<sup>9</sup>. A study with obese individuals who saw a doctor in the 12 months prior to the interview found prevalence of only 39% of receiving information for weight loss. Besides, only 64% of those who received counseling were advised to change diet, which configures as a major lost opportunity<sup>10</sup>.

Evidence shows that the population receives relatively little information about the benefits of a healthy diet<sup>11</sup>, and there are only a few national-based studies that assess the prevalence of receiving this type of orientation in the Brazilian population.

Diet guidance should not be seen only as a transfer of information to reduce the intake of some specific nutrients or food<sup>5</sup>. However, considering the recommendation of the sixth guideline of the Eating Guide for the Brazilian Population<sup>6</sup>, this study aimed to examine the receiving of advice about the intake of salt, sugar and fat in the adult population living in urban areas.

## Methodology

Between the months of August 2008 and March 2009, a cross-sectional study was conducted in a sample of adult individuals, aged between 20 and 59 years old, living in the urban area of 100 cities of the five geopolitical regions. The study about receiving orientation for low salt, sugar and fat intake integrates the project "AQUARES", which aimed at assessing the access, the use and the quality of the health care network in Brazil.

In order to locate the representative sample of the adult Brazilian population, a complex process was conducted in multiple levels, considering the size of the population, the census sectors and the households. The cities and urban census sectors were selected by the territorial division using the official mesh of the Population Census of 2000<sup>12</sup>. After organizing as to the size of

the population, the cities were randomly selected, and the census sectors were equally sorted out according to the proportion of valid sectors and size of the population. In each of the 638 selected sectors, 10 households were visited, according to a systematic "leap" between the residencies, hoping to find 17 adults per sector<sup>13</sup>. All of the adults living in the selected household were eligible for the interviews.

Data collection was performed with an electronic questionnaire in Personal Digital Assistant (PDA) by 55 trained interviewers. Quality control was performed by supervisors in the work field, after a second visit and the application of a questionnaire reduced to 5% of the interviewees, with a maximum interval of three days after the first interview. With the final sample of 12,402 adults, the margin of error for the prevalence of receiving orientations was in average 0.9 percentage points.

Eating orientation was defined as the reference for receiving orientation concerning low salt, sugar and fat intake from some professional during contact with a health service or through the media. The themes in questions were studied with a broader set of recommendations about the adoption of healthy behaviors expressed by different social agents, vehicles and formats, including, among others, means of mass communication, gyms, clubs and health services.

The questionnaire used in the study was standardized and pre-tested. The following questions demonstrate the sequence of items referring to the intake of salt: "Have you been advised to eat little salt since <MONTH> from the past year until now?". All of the individuals who gave a positive response to this question were asked: "Where have you received the orientation to eat little salt since <MONTH> from the past year until now?"; "Who advised you to eat little salt since <MONTH> from the past year until now?" and "Has this orientation since <MONTH> from the past year until now helped you to eat with little salt?". The questions to assess the receiving of orientation to eat little sugar and fat had the same standards.

The independent variables included in the analysis were: gender, age (20 to 29 years old,

30 to 39 years old, 40 to 49 years old, and 50 to 59 years old); skin color reported by the interviewee and categorized as white, mulatto (composed by the categories mulatto, dark, and mestizo), black and other (composed by yellow and indigenous); marital status (with or without a partner); economic level (classification of the Brazilian Association of Research Companies)<sup>14</sup>, categorized in A/B (richer), C and D/E; smoking, categorized as never (those who have never smoked), former smokers and current smokers (the ones who have been smoking more than one cigarette a day for more than one month); sedentary lifestyle in leisure time (obtained from the International Physical Activity Questionnaire – IPAQ)<sup>15</sup>, categorized as sedentary (individuals who practice less than 150 minutes a week of physical activity) and active; systemic arterial hypertension and diabetes mellitus, obtained by the questioning about receiving a medical diagnosis of these problems; and excessive weight, obtained by the reference to this problem in the 12 months prior to the interview.

The descriptive analysis included calculations of proportions of the different outcomes with the independent variables. The place and origin of the orientations were verified (Tables 1 and 2). For the crude and adjusted analyses, the act of receiving each of the different orientations in health services was used as outcome, therefore, media and other places were excluded (Table 3). This strategy was chosen in order to delimit the outcome, which makes the analysis more precise, and also because of the large proportion of orientations received in the health service.

The prevalence ratio (PR) and the 95% confidence interval (95%CI) were estimated by the Poisson regression, with robust variance since it was easy to interpret the results with the obtained effect measure<sup>16</sup>. Both in the crude and in the adjusted analysis, the significance was assessed by the Wald test for heterogeneity, and, when adequate, the Wald test for linear trend. All the analyses considered the design effect.

A three-level hierarchical model guided the order of entrance of the variables in the

adjusted model. In the first level, as a distal determinant, the variables gender, age, skin color, marital status and economic level were inserted; in the second one, smoking and sedentary lifestyle; and in the third one, as a proximal determinant, the selected health problems – arterial hypertension, diabetes and excessive weight. The adjustment was made for all of the variables in the same hierarchical level and those of superior levels. The variables with  $p \leq 0.20$  were maintained to control confusion factors. For all of the analysis, a 5% significance level was adopted. Analyses were conducted in the Stata 11.0 software.

The study was submitted and approved on November 23, 2007, by the Research Ethics Committee of the Medical School of *Universidade Federal de Pelotas*, report n. 152/07. All of the participants signed a informed consent form before the beginning of the interviews. The right to not participate in the research and the secrecy regarding the obtained information were secured.

## Results

During field work, 13,756 adults that were eligible for the study were identified, and 12,402 were interviewed, accounting for 8% (1,101) of loss and 2% (275) of refusals. The design effects for the different outcomes were: for the intake of little salt — 1.37; for the intake of little sugar — 1.65; and for the ingestion of little fat — 1.53.

Out of the interviewees, most were females (55.0%), aged between 20 and 39 years old (57.0%), mulattos (52.9%), living with a partner (64.1%), in the C economic level (51.5%), who had never smoked (63.2%),  $BMI \geq 25.0$  kg/m<sup>2</sup> (50.5%) and with sedentary lifestyle (82.5%). As to chronic health issues, 16.3% reported having medical diagnosis of arterial hypertension, 3.6% of diabetes and 17.5% of excessive weight in the 12 months prior to the interview.

The orientation that was mostly reported was the little fat intake (38.2%), followed by the little salt (36.3%) and sugar (28.7%) intake. The profile of receiving orientation was similar between the different topics. Most of the prevalence was observed among

**Table 1** - Distribution of population characteristics and prevalence of advice to low salt, sugar and fat intake. Brazil, 2009 (n = 12,402).

**Tabela 1** - Distribuição das características populacionais e prevalência do recebimento de orientações para ingestão de pouco sal, açúcar e gordura. Brasil, 2009 (n = 12.402).

Variable	Total		Salt* (%)	Sugar* (%)	Fat* (%)
	n	%			
Gender					
Male	5,574	45.0	32.2	24.8	32.6
Female	6,828	55.0	39.6	31.8	42.7
Age (years)					
20 to 29	3,938	31.8	26.5	22.2	28.9
30 to 39	3,114	25.2	34.2	26.8	35.7
40 to 49	2,958	23.9	40.4	31.6	42.5
50 to 59	2,361	19.1	50.3	38.3	51.7
Skin color					
White	4,752	39.7	38.1	31.2	41.0
Mulatto	6,355	52.9	34.0	26.1	35.5
Black	770	6.4	42.1	31.0	42.4
Other	102	1.0	28.0	26.0	35.0
Marital status					
With partner	4,454	35.9	30.3	24.8	32.9
Without partner	7,939	64.1	39.6	30.8	41.1
Economic level					
A/B (higher)	3,302	28.3	45.9	39.9	48.7
C	6,013	51.5	34.6	25.9	36.1
D/E	2,359	20.2	27.9	20.3	29.1
Smoking					
Never	7,816	63.2	36.4	29.7	38.7
Former smoker	1,985	16.0	43.4	34.0	45.8
Yes	2,575	20.8	30.1	21.2	30.4
Sedentary lifestyle					
No	2,147	17.5	39.8	35.6	44.1
Yes	10,156	82.5	35.5	27.2	36.9
Hypertension					
No	10,320	83.7	29.0	25.1	32.3
Yes	2,004	16.3	73.3	47.0	68.3
Diabetes					
No	11,904	96.4	34.9	26.8	36.7
Yes	440	3.6	72.0	78.1	77.5
Excessive weight					
No	10,185	82.5	32.5	25.3	34.0
Yes	2,161	17.5	53.9	44.2	57.5
<b>Total</b>	<b>12,402</b>	<b>100.0</b>	<b>36.3</b>	<b>28.7</b>	<b>38.2</b>

\*Low intake; SAH: Systemic Arterial Hypertension.

\*Ingestão de pouco (a); SAH: Hipertensão Arterial Sistêmica.

**Table 2** - Characteristics of advice. Brazil, 2009 (n = 12,402).

**Tabela 2** - Características das orientações recebidas. Brasil, 2009 (n = 12.402).

Advice	Salt*		Sugar*		Fat*	
	n	%	n	%	n	%
Place of advisement						
Basic Health Unit	1,618	36.3	1,125	32.0	1,605	34.3
Public outpatient clinics	568	12.7	423	11.9	611	13.1
Doctor's office by insurance	860	19.3	782	22.2	995	21.2
Private doctor's office	363	8.2	302	8.6	397	8.5
Media	1,179	26.5	948	26.9	1,235	26.4
Another place	1,040	23.4	859	24.4	1,036	22.1
Advisor						
Doctor	3,251	73.0	2,470	70.2	3,396	72.5
Nurse	334	7.5	237	6.7	303	6.5
Nutritionist	322	7.2	351	10.0	399	8.5
Friends/relatives	343	7.7	664	18.9	796	17.0
Others	1,078	24.2	267	7.6	322	6.9
Did the advice help	3,845	86.4	2,920	82.9	4,011	85.6
Being advised by a health professional	3,227	26.2	2,472	19.9	3,430	27.7

\*Low intake.

\*Ingestão de pouco (a).

**Table 3** - Crude and adjusted analyses of advice from health professional to low salt, sugar and fat intake according to population characteristics. Brazil, 2009 (n=12,402).

**Tabela 3** - Análise bruta e ajustada do recebimento de orientação por profissional da saúde para ingestão de pouco sal, açúcar e gordura, segundo características populacionais. Brasil, 2009 (n=12.402).

Variable	Low salt intake			Low sugar intake			Low fat intake		
	P (%)	Crude	Adjusted	P (%)	Crude	Adjusted	P (%)	Crude	Adjusted
		PR (95%CI)	PR (95%CI)		PR (95%CI)	PR (95%CI)		PR (95%CI)	
Gender*		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
Male	21.4	1.00	1.00	15.8	1.00	1.00	21.8	1.00	1.00
Female	29.8	1.39 (1.31 – 1.48)	1.41 (1.33 – 1.51)	23.3	1.48 (1.38 – 1.59)	1.52 (1.41 – 1.64)	32.5	1.49 (1.41 – 1.58)	1.53 (1.44 – 1.62)
Age (years)**		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
20 to 29	15.4	1.00	1.00	12.5	1.00	1.00	17.2	1.00	1.00
30 to 39	23.1	1.50 (1.36 – 1.66)	1.43 (1.29-1.59)	17.5	1.40 (1.26 – 1.56)	1.34 (1.19 – 1.50)	24.6	1.43 (1.31 – 1.56)	1.36 (1.24 – 1.49)
40 to 49	30.4	1.98 (1.80 – 2.17)	1.89 (1.29 – 1.59)	23.2	1.85 (1.67 – 2.06)	1.75 (1.56 – 1.96)	32.0	1.86 (1.70 – 2.03)	1.78 (1.62 – 1.95)
50 to 59	42.2	2.74 (2.51 – 3.00)	2.67 (1.70 – 2.09)	31.6	2.53 (2.28 – 2.80)	2.42 (2.17 – 2.70)	44.0	2.56 (2.35 – 2.78)	2.47 (2.26 – 2.70)
Skin color*		< 0.001****	0.001****		< 0.001****	0.03****		< 0.001****	0.003****
White	27.1	1.08 (1.02 – 1.16)	0.97 (0.90 – 1.03)	22.3	1.23 (1.14 – 1.33)	1.05 (0.97 – 1.14)	30.3	1.17 (1.10 – 1.25)	1.04 (0.97 – 1.11)
Mulatto	25.0	1.00	1.00	18.1	1.00	1.00	25.8	1.00	1.00
Black	30.3	1.21 (1.07 – 1.36)	1.17 (1.04 – 1.32)	21.8	1.21 (1.04 – 1.40)	1.15 (0.99 – 1.35)	31.0	1.20 (1.08 – 1.35)	1.14 (1.01 – 1.27)
Other	16.7	0.67 (0.43 – 1.02)	0.57 (0.37 – 0.87)	11.8	0.65 (0.38 – 1.10)	0.57 (0.35 – 0.93)	17.8	0.68 (0.46 – 1.02)	0.58 (0.39 – 0.86)
Marital status*		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
Without partner	19.7	1.00	1.00	15.2	1.00	1.00	21.9	1.00	1.00
With partner	29.6	1.51 (1.40 – 1.62)	1.30 (1.21 – 1.40)	22.6	1.49 (1.37 – 1.62)	1.32 (1.21 – 1.44)	30.9	1.41 (1.31 – 1.51)	1.26 (1.18 – 1.36)
Economic level*		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
A/B (higher)	32.8	1.51 (1.38 – 1.67)	1.48 (1.34 – 1.64)	28.3	1.87 (1.65 – 2.12)	1.81 (1.59 – 2.06)	35.3	1.54 (1.40 – 1.69)	1.47 (1.34 – 1.63)
C	24.5	1.13 (1.03 – 1.24)	1.15 (1.05 – 1.27)	17.5	1.16 (1.02 – 1.31)	1.17 (1.03 – 1.33)	25.6	1.11 (1.01 – 1.23)	1.12 (1.02 – 1.23)
D/E	21.7	1.00	1.00	15.1	1.00	1.00	23.0	1.00	1.00
Smoking <sup>#</sup>		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
Never	25.8	1.17 (1.08 – 1.28)	1.16 (1.06 – 1.26)	20.3	1.39 (1.25 – 1.53)	1.31 (1.18 – 1.47)	27.5	1.24 (1.14 – 1.35)	1.20 (1.10 – 1.30)
Former smoker	32.6	1.49 (1.34 – 1.64)	1.25 (1.13 – 1.38)	25.3	1.72 (1.52 – 1.95)	1.45 (1.28 – 1.65)	35.8	1.62 (1.47 – 1.78)	1.38 (1.25 – 1.52)
Current	21.9	1.00	1.00	14.7	1.00	1.00	22.1	1.00	1.00
Sedentary lifestyle**		0.02****	0.04****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
No	28.0	1.09 (1.01 – 1.18)	1.08 (1.00 – 1.16)	24.5	1.29 (1.18 – 1.41)	1.22 (1.12 – 1.33)	31.4	1.17 (1.09 – 1.26)	1.15 (1.07 – 1.24)
Yes	25.6	1.00	1.00	19.0	1.00	1.00	26.9	1.00	1.00

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**Table 3** - Continuation.  
**Tabela 3** - Continuação.

Variable	Low salt intake			Low sugar intake			Low fat intake		
	P (%)	Crude	Adjusted	P (%)	Crude	Adjusted	P (%)	Crude	Adjusted
		PR (95%CI)	PR (95%CI)		PR (95%CI)	PR (95%CI)		PR (95%CI)	
Hypertension***		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
No	18.0	1.00	1.00	15.6	1.00	1.00	20.9	1.00	1.00
Yes	67.5	3.75 (3.55 – 3.97)	2.87 (2.69 – 3.06)	42.5	2.73 (2.54 – 2.92)	1.81 (1.67 – 1.96)	62.7	3.00 (2.84 – 3.17)	2.21 (2.08 – 2.35)
Diabetes***		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
No	24.6	1.00	1.00	18.0	1.00	1.00	26.0	1.00	1.00
Yes	67.1	2.73 (2.53 – 2.94)	1.46 (1.34 – 1.58)	74.8	4.15 (3.87 – 4.48)	2.66 (2.43 – 2.91)	73.6	2.83 (2.65 – 3.03)	1.67 (1.54 – 1.80)
Excessive weight***		< 0.001****	< 0.001****		< 0.001****	< 0.001****		< 0.001****	< 0.001****
No	22.6	1.00	1.00	16.7	1.00	1.00	23.8	1.00	1.00
Yes	42.3	1.87 (1.75 – 2.00)	1.32 (1.24 – 1.40)	35.1	2.10 (1.93 – 2.27)	1.54 (1.42 – 1.66)	46.0	1.94 (1.82 – 2.06)	1.41 (1.33 – 1.50)

\*First hierarchical level; \*\*Second level hierarchical; \*\*\*Third hierarchical level; \*\*\*\*Heterogeneity p-value; \*\*\*\*\*Trend p-value; P: Prevalence; PR: Prevalence Ratio; 95%CI: Confidence interval of 95%.

\*Primeiro nível hierárquico; \*\*Segundo nível hierárquico; \*\*\*Terceiro nível hierárquico; \*\*\*\*Valor p de heterogeneidade; \*\*\*\*\*Valor p de tendência linear; P: Prevalência; RP: Razão de Prevalência; 95%CI: Intervalo de confiança de 95%.

women, older individuals, with a partner, with higher economic level, former smokers, physically active and with chronic selected conditions — arterial hypertension, diabetes and excessive weight. However, the variable skin color diverged between the different orientations; the advice concerning the low salt and sugar intake were more prevalent among black individuals, and the proportions of blacks and whites who received the orientation concerning the intake of sugar was very similar (Table 1). It is worth to mention that black individuals presented significantly higher prevalence of excessive weight and arterial hypertension in comparison to the others (data not shown). When assessing the place where participants received information, who provided it and if the orientations contributed for the attempt to follow the recommendations, the standard was also very similar between orientations. More than 30.0% were advised in Basic Health Units, approximately 72.0% was guided by a doctor, and, in the perception of more than 81.0% of the interviewees, the advice collaborated with the attempt to maintain a healthier diet (Table 2).

Afterwards, the associated factors in the adjusted analysis about receiving different

orientations stand out, according to the hierarchical model. Orientations were more frequent among women ( $p < 0.001$ ) and increased linearly with the age of the interviewees ( $p < 0.001$ ), regardless of the type of orientation. Black individuals reported receiving significantly more orientation when compared to mulattos ( $p < 0.001$ ). Among married individuals or those with a partner, the number of orientations was higher ( $p < 0.001$ ). There was a linear growth tendency of receiving information according to the increasing economic level of the individuals ( $p < 0.001$ ). Former smokers reported receiving different orientations significantly more, except for the advice to intake little sugar; in that aspect, individuals who have never smoked received more orientation ( $p < 0.001$ ). Those who were physically active, with arterial hypertension, diabetes and excessive weight reported receiving different types of orientation significantly more (Table 3).

## Discussion

The prevalence of receiving orientation for the set of the sample was of 38.2% for the low fat intake, 36.3% for salt and 28.7% for sugar. The prevalence of orientation in the

Brazilian sample were similar to those found in studies conducted in the United States and in Finland<sup>7,17-19</sup>.

The most frequent place for receiving orientations was the basic health unit, regardless of the received advice. The reasons to look for care are varied, both to treat a problem that had just been observed or a recent one and for prevention, resulting from the perception of the individuals. In all of the situations, broad guidance is desirable, thus avoiding to lose a great opportunity to treat and prevent diseases and to promote health<sup>3</sup>.

It is worth to mention the high proportion of guidance attributed to the media (26.5%). This finding demonstrates how important means of communication are to provide information to the population, especially because of the great reach of this approach. A literature review concluded that campaigns publicized on means of communication can produce positive changes in behaviors related to health in large populations<sup>20</sup>. Another important aspect is the broad participation of the means of mass communication to publicize campaigns, messages and recommendations sponsored by institutions from the government and from the civil society, in order to promote healthy behaviors<sup>21</sup>.

Medical doctors were the professionals mainly in charge of guiding the studied population, regardless of the presence of chronic health issues. Advisement from health professionals, especially medical doctors, is related to the level of knowledge of the professional on the subject. Attitudes and skills of the health professional concerning the advisement of healthy habits can also be related to his or her academic background and the profile of users he or her usually cares for. In this case, professionals who deal with people with chronic health issues can be more aware of the need to recommend the adoption of a healthy lifestyle during appointments<sup>22,23</sup>.

Nutritionists were the second most mentioned professional, despite their scarce presence in the Brazilian primary care. The Center of Support to Family Health (NASF) was created with the objective to meet this demand and other deficiencies in the health

system, focusing on shared care for the interdisciplinary attention. This initiative promotes the exchange of experiences between the involved professionals, thus prioritizing case discussion, elaboration of therapeutic projects and orientation to the population and primary care professionals<sup>24</sup>.

It is important to point out that the orientation for healthy habits is an attribution of all of the professionals who are part of primary health care<sup>3</sup>. However, considering that the most mentioned place for advisement was the basic health unit, the participation of other professionals usually found in these units, for instance, nurses and dentists, was very scarce.

Being advised in health services varied from 19.9% for the low sugar intake and 27.7% for the low fat intake. The factors associated with receiving more and different orientations were very similar, being more frequent among women, older individuals, black people, with a partner, with a higher economic level, former smokers and people with the selected chronic issues — arterial hypertension, diabetes and excessive weight. This profile of a representative sample of the Brazilian population is in accordance with the data from a study conducted in Canada, which pointed out to the higher probability of being advised by a health professional in relation to the age of the individuals and the presence of chronic problems<sup>25</sup>.

Evidence shows that the use of health services is socially determined and affects the standards for receiving orientations<sup>26</sup>. Regardless of the previous health conditions, richer populations tend to use more outpatient and preventive services, to consume more medication and to obtain more information about healthy habits in comparison to poorer countries<sup>27</sup>.

Several studies point to the use of primary health services being strongly associated with the presence of morbidities, to the detriment of preventive actions and health education<sup>22,23,26</sup>. Patients with chronic problems are more exposed to receiving orientation about healthy lifestyles since they use the health services more frequently<sup>22</sup>. Even though the higher number of orientations is more evident among people with chronic



conditions, the identified prevalence is still far from desirable, considering its relevance to handle the approached problems.

On the other hand, the action of receiving orientation was remarkably low among “healthy” individuals, that is, those who did not report the occurrence of the studied chronic issues. These results can be partly a result of the opinion that the adoption of healthy behaviors is essentially an individual responsibility, thus minimizing the proactive participation of health services as opposed to their attributions in the scope of promoting health<sup>28,29</sup>.

However, in the broader perspective of health, as it is defined in the scope of the Brazilian Sanitary Reform, the Unified Health System (SUS) and the Letters of Health Promotion, the way subjects and groups elect specific lifestyle options as being desirable are socially established, therefore, it is a responsibility of the society as a group<sup>3</sup>. In this context, orientations to adopt healthy habits should be provided to all of the individuals, regardless of the presence of some chronic morbidity, considering their contribution to prevent and control these problems<sup>10,28,29</sup>.

Among the positive aspects of this study, its comprehensiveness, the national representative sample, the collection of primary data and the low non-response rate stand out. Concerning its limitations, it is worth to mention the lack of characterization of hypercholesterolemia as

a health condition, the fact that the study was conducted by a cross-sectional design, which prevents the establishment of cause and effect relations, and the lack of characterization of the standard intake of salt, sugar and fat among the individuals in the sample. The inclusion of all of the adults from the same household in the sample may have overestimated the participation of friends and relatives as being responsible for the assessed orientations.

## Conclusion

Based on the exposed, it is concluded that the orientation is scarce, especially for younger, poorer and healthier individuals, which configures a lost opportunity to prevent health and to raise awareness of the population. It is extremely important to develop actions aiming at qualifying services and health professionals, according to the National Policy of Health Promotion, so that the whole population can be advised and in contact with much information about the benefits of a healthy lifestyle.

It is believed that by investing in actions that aim at improving primary health care, especially the Family Health Strategy, it will be possible to improve the care provided to the poorer, promoting more equity in health promotion actions, for instance, the advisement for healthy lifestyles.

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