



Nutrition literacy level differentiates by age, biological sex, education and income in a sample of Brazilian adults



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BACKGROUND

Nutrition literacy (NL) is the capacity to obtain, process, and understand nutrition information and skills needed to make appropriate nutrition decisions.¹ NL is associated with sociodemographic characteristics^{2,3} and predicted adherence to healthy or unhealthy diet patterns among adults with chronic diseases⁴ in the US. However, little is known about the association of NL with sociodemographic characteristics in developing countries.

OBJECTIVES

- To assess the NL level of a sample of Brazilian adults.
- To test the association of NL with sociodemographic characteristics in a sample of Brazilian adults.

DESIGN AND SETTING

This observational, cross-sectional study was carried out from March to September 2020. A non-probabilistic, convenience sample of employees aged ≥ 18 years old from a financial institution were recruited for this study.

OUTCOME MEASURES AND ANALYSIS

NL:

NL was measured by the Nutrition Literacy Assessment Instrument for Brazilians (*NLit - Br*)⁵ Questionnaire comprised of five subscales: 1) Nutrition & Health, 2) Energy Sources in Food, 3) Food Label & Numeracy, 4) Food Groups, and 5) Consumer Skills. We used the online version, validated with confirmed substantial reliability (ICC > 0.75).

Average nutrition literacy score differences by sociodemographic characteristics (n=1174)

Nutrition Literacy	Biological sex		Age (years)			Monthly household income (Brazilian minimum wages)			Education attainment			
	← mean ± SD →											
	Female	Male	≤ 39	40-50	> 50	≤ 5.00	5.01-7.00	> 7.00	High school degree	College degree	Undergraduate degree	Graduate degree
Total	49.4 ± 2.9 **	49.0 ± 3.5 **	49.6 ± 2.9 **	49.0 ± 3.5 **	48.4 ± 3.4 **	47.8 ± 4.0 **	48.3 ± 4.0 **	49.3 ± 3.1 **	48.8 ± 3.8 *	48.9 ± 3.2 *	49.2 ± 3.3 *	49.6 ± 2.9 *
Nutrition & health	9.3 ± 0.8	9.3 ± 0.7	9.3 ± 0.8	9.4 ± 0.7	9.3 ± 0.8	9.1 ± 0.9	9.3 ± 0.7	9.3 ± 0.7	9.3 ± 0.9	9.3 ± 0.8	9.3 ± 0.7	9.4 ± 0.7
Energy sources in food	9.3 ± 0.8 **	9.0 ± 1.1 **	9.2 ± 0.9 **	9.1 ± 0.9 **	8.9 ± 1.2 **	9.1 ± 0.9	9.0 ± 1.1	9.1 ± 1.0	9.4 ± 0.7	9.0 ± 1.1	9.1 ± 1.0	9.1 ± 0.9
Food label & numeracy	8.5 ± 1.6	8.5 ± 1.6	8.8 ± 1.4 **	8.4 ± 1.6 **	8.2 ± 1.8 **	7.8 ± 2.1 **	8.1 ± 1.8 **	8.6 ± 1.5 **	8.1 ± 1.9	8.4 ± 1.6	8.5 ± 1.6	8.6 ± 1.4
Food groups	13.9 ± 1.2	13.9 ± 1.4	14.0 ± 1.2 *	13.8 ± 1.4 *	13.8 ± 1.3 *	13.8 ± 1.2	13.7 ± 1.8	13.9 ± 1.3	13.8 ± 1.1	13.8 ± 1.2	13.9 ± 1.4	13.9 ± 1.2
Consumer skills	8.3 ± 0.8 **	8.1 ± 1.0 **	8.2 ± 0.9	8.2 ± 0.9	8.1 ± 0.9	7.7 ± 1.4 **	8.1 ± 1.0 **	8.2 ± 0.8 **	8.0 ± 1.1 *	8.2 ± 0.8 *	8.2 ± 0.9 *	8.4 ± 0.6 *

SD: Standard Deviation; Monthly Brazilian minimum wage = R\$1045 reais; * p ≤ 0.05; ** p ≤ 0.01

OUTCOME MEASURES AND ANALYSIS

Sociodemographics:

Biological sex, age (years), education attainment and Monthly Household Income (MHI) (Brazilian Minimum wage).

Analysis:

Descriptive analyses were used for NL and sociodemographic characteristics. Student's T-test and Analysis of Variance (ANOVA) were used to measure associations between NL with sociodemographic characteristics

Statistical Software: International Business Machines Corporation Statistical Package for Science – IBM SPSS Statistics, version 22.0.

RESULTS

Sociodemographic characteristics of the sample (n=1174)

Characteristics	n (%) or mean ± standard deviation
Biological sex	
Male	716 (61.0)
Female	458 (39.0)
Age (years)	42 ± 6
Education attainment	
High school degree	31 (2.6)
College degree	178 (15.2)
Undergraduate degree	870 (74.1)
Graduate degree	95 (8.1)
Monthly Household Income (Brazilian minimum wages)	
≤ 5.00	59 (5.0)
5.01 to 7.00	115 (9.8)
> 7.00	1000 (85.2)

Monthly Brazilian minimum wage = R\$1045 reais

CONCLUSIONS

- Nutrition literacy was significantly associated with biological sex, age, education attainment and income.
- Sociodemographic nutrition literacy inequities were observed for males, middle-aged, lower income and lower education participants.
- Future studies should further explore the impact of NL inequality observed for Brazilian males, middle aged, lower education and income on their dietary and health outcomes.

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