



# The Nutrition Literacy Assessment Instrument Brazil : reliability of the online version

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## BACKGROUND

The Nutrition Literacy Assessment Instrument (NLit) is a tool designed to assess print literacy and numeracy within nutrition contexts and the capability to apply nutrition knowledge and skills. <sup>1</sup>

In 2015-2017, NLit was culturally and linguistically adapted to Brazil and Portuguese. <sup>2</sup> The sample consisted of 30 subjects with at least one chronic disease with an average age of 62 years. The content validity (S-CVI 0.85), convergent validity (r=0.66, p< 0.01) and internal consistency (KR-20 = 0.86) of the NLit-Br were confirmed. <sup>2</sup>

However, amid the SARS-COVID-19 pandemic, there is a need to have the instrument available remotely.

## OBJECTIVE

To test the reliability of the NLit-Br online version in an adult population.

## DESIGN AND SETTING

This observational, cross-sectional study was carried out in March 2020. With a non-probabilistic convenience sample considered statistically sufficient (ICC > 0.06).

The convenient sample consisted of 21 workers from 3 banking agencies of a financial institution in Brasilia, DF, Brazil.

## OUTCOME MEASURES AND ANALYSIS

**NLit-Br:** Questionnaire comprised of five subscales: 1) Nutrition & Health, 2) Energy Sources in Food, 3) Food Label & Numeracy, 4) Food Groups, and 5) Consumer Skills.

**Reliability:** Participants were randomly divided into 2 groups. Both groups completed the online and paper version of the NLit-Br on the same day, with a minimum of 2 hours apart. Reliability was measured by the intraclass correlation coefficient (ICC).

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

## RESULTS

### Sociodemographic characteristics of the sample (n=21)

| Characteristics   | n (%) or mean ± standard deviation |
|---|------------------------------------|
| <b>Biological sex</b>                                     |                                    |
| Male  | 12 (57.1)                          |
| Female  | 9 (42.9)                           |
| <b>Age (years)</b>  | 41 ± 7.9                           |
| <b>Race</b>   |                                    |
| White   | 12 (57.1)                          |
| Brown   | 8 (38.1)                           |
| Yellow  | 1 (4.8)                            |
| <b>Education attainment</b>                               |                                    |
| High school   | 2 (9.5)                            |
| College   | 2 (9.5)                            |
| Graduate  | 17 (81.0)                          |
| <b>Monthly Household Income (R\$)</b>                     | 5837.14 ± 4228.09                  |
| <b>Monthly Household Income (Brazilian minimum wages)</b> |                                    |
| 3 to 5  | 3 (14.3)                           |
| 6 to 7  | 2 (9.5)                            |
| > 7   | 16 (76.2)                          |

R\$: Reais (Brazilian Currency)  
Monthly Brazilian minimum wage = R\$1045.00 reais

### Reliability of NLit-Br paper and digital versions by intraclass correlation coefficient (n=21)

| NLit-Br                | Group 1 (n=11) |            |     | Group 2 (n=10) |            |     | Overall (n=21) |            |
|------------------------|----------------|------------|-----|----------------|------------|-----|----------------|------------|
|                        | Paper          | Digital    | ICC | Paper          | Digital    | ICC | Paper          | Digital    |
|                        | ← Mean (SD) →  |            |     | ← Mean (SD) →  |            |     | ← Mean (SD) →  |            |
| Nutrition & Health     | 9.3 ± 0.8      | 9.2 ± 0.7  | 0.8 | 9.5 ± 0.5      | 9.3 ± 0.8  | 0.5 | 9.4 ± 0.5      | 9.2 ± 0.7  |
| Energy Sources in Food | 8.8 ± 1.0      | 8.6 ± 1.3  | 0.8 | 8.5 ± 1.3      | 9.0 ± 0.8  | 0.8 | 8.6 ± 1.2      | 9.2 ± 0.7  |
| Food Label & Numeracy  | 8.0 ± 1.6      | 8.5 ± 1.7  | 0.8 | 7.0 ± 2.1      | 8.2 ± 2.0  | 0.8 | 7.5 ± 1.9      | 8.3 ± 1.8  |
| Food Groups            | 14.0 ± 1.3     | 13.7 ± 1.9 | 0.7 | 14.1 ± 1.8     | 15.1 ± 1.2 | 0.5 | 14.1 ± 1.5     | 14.3 ± 1.7 |
| Consumer Skills        | 8.2 ± 0.7      | 8.2 ± 0.9  | 0.6 | 7.2 ± 1.4      | 8.0 ± 0.8  | 0.5 | 7.7 ± 1.2      | 8.1 ± 0.8  |
| Global Score           | 48.5 ± 3.0     | 48.4 ± 3.8 | 0.9 | 46.3 ± 4.9     | 49.6 ± 3.5 | 0.6 | 47.4 ± 4.1     | 49.0 ± 3.6 |

NLit-Br: Nutrition Literacy Assessment Instrument Brazil; SD: Standard Deviation; ICC: Intraclass Correlation Coefficient;

## CONCLUSIONS

- The NLit-Br online is a reliable tool for remotely measuring nutrition literacy in adults.
- All five subscales demonstrated ICC = 0,7 reliability.
- The NLit-Br is a potential tool for measuring nutrition literacy remotely of Brazilians, though testing in a larger sample with age, education and income diversity is needed.

## REFERENCES

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