

Author(s)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

The overall purpose of this study is to identify which front-of-package nutrient warning helps Colombian consumers identify unhealthy foods and beverages, reduces their intentions to purchase these products, and is perceived as being effective at discouraging consumption of these products, compared to a control label. The primary objectives of this study are to evaluate our hypotheses that all nutrition warnings will lead to:

1. Higher Perceived Message Effectiveness (PME): extent to which the warning discourages wanting to consume the product with warnings.
2. Better ability to correctly identify a product as having high levels of nutrients of concern (sugar, saturated fat, or sodium).
3. Better ability to correctly identify which product of a set of two has higher levels of sugar.
4. Lower selection of the less healthy product as the product the consumer most wants to buy.
5. Lower likelihood of purchasing an unhealthy product in the next week if it were available.

We will also examine whether responses to #1-5 differ by respondent's educational level. We hypothesize that there will be no differences in response to the nutrient warnings by education level.

3) Describe the key dependent variable(s) specifying how they will be measured.

The primary outcome is PME, measured using 3 items adapted from Baig et al. (2018): concern, unpleasantness, and discouragement. We will average responses on the 3 items to create a PME score. All 3 items are measured using a 4-point Likert scale, as noted below.

Question: How much does this message...

- ...make you concerned about the health effect of consuming an unhealthy product? (Not at all concerned, a little concerned, concerned, very concerned)
- ...discourage you from wanting to eat an unhealthy product? (It does not discourage me at all, it discourages me a little, it discourages me, it discourages me a lot)
- ...make eating an unhealthy product seem unpleasant to you?(Very unpleasant, unpleasant, pleasant, very pleasant)

Secondary outcomes are:

- A) The ability to correctly identify which of two products is highest in sugar.
- B) The ability to correctly identify which of two products is unhealthy.
- C) The selection of the less healthy product as being the product the consumer most wants to buy.
- D) The ability to correctly assess whether a single product contains excess sugar, saturated fat, or sodium.
- E) Likelihood of purchasing an unhealthy product in the next week if it were available.

Other outcomes are whether:

- A) The label grabs the participants' attention.
- B) The label makes the consumers think about health problems caused by consuming this product
- C) The label would be culturally acceptable to Colombians
- D) The label is liked
- E) The label is easy to understand.
- F) The label teaches the participant something new.
- G) The product would be healthy for a child aged 1 to 12 years to consume every day.
- H) The product with the label is appealing

We will also examine which label consumers select as most discouraging them from wanting to consume an unhealthy product, and whether they had been previously exposed to warning labels prior to the study.

4) How many and which conditions will participants be assigned to?

This is a multi-part study in which participants will respond to questions presented in a random order.

1. Between-person experiment comparing participants' assessment of two fruit drinks. Participants will be randomized to view one of 4 labels: a control label (barcode), a nutrient warning label based on Peru's warning label, a nutrient warning label based on South Africa's proposed label, and a nutrient warning label proposed by the Colombian Ministry of Health. First, participants will be shown two fruit drinks, one without any label and one with the label they were assigned to. They will then be asked a series of questions about which product is most unhealthy, which product is highest in sugar, and which product they most want to buy.

2. Between-within subjects experiment where the between subjects factor is warning type and the within subjects factor is product type (a cookie, bread, and a soda, randomly presented). Participants will see each product with the label to which they were assigned, and then answer a series of questions about the product, including PME of the label and whether the label grabs their attention, makes them think about the health problems associated with consuming the product, or teaches them something new. For each product, they will also rate how likely they would be to purchase it in the next week, how unhealthy it would be for a child age 1 to 12 to consume it, and how appealing the product is.
3. All participants will then see all labels, displayed in random order, and select which label would most discourage them from wanting to consume an unhealthy product.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will use a two-sided critical alpha of 0.05 to conduct all statistical tests. We will use complete case analysis to handle any missing data. We will descriptively report unadjusted means (and standard deviations) and percentages for the primary and secondary outcomes. For our main outcome, PME, we will take the average of the 3 items for each product type if $\alpha > .70$. We will then assess whether our primary and secondary outcomes vary by warning message type by fitting a mixed effects linear regression model for continuous outcomes (including PME) and a mixed effects negative binomial model or logistic regression model (if the negative binomial model does not converge) for binary outcomes (including product selection, label selection, identification of healthier products), treating the intercept as random to account for repeated measures. We will include indicator variables for warning message (between-subjects) and product type (within-subjects), as well as an interaction of warning message and product type. If the interaction term is not significant, we will present the model without the interaction as our main model. We will use postestimation commands to conduct pairwise comparisons of the predicted means. We will correct for multiple comparisons. To evaluate the most discouraging label, we examine the proportion of participants that selected each warning label as the most discouraging and will conduct z-tests to explore statistical significance of these differences. To assess whether the effect of the warning label on PME differs by education, we will test for an interaction of warning label with education level (specified as dummy variables), and use a Wald chunk test to determine the joint interaction. We will use postestimation commands to predict means by warning label and education level, and conduct pairwise comparisons of the predicted means.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

N/A

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

2000

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

N/A