APPENDIX 1 - Details of the adaptation of the Rep(eat)-Q for Brazilian culture

Methods

Procedure and participants

The procedures followed all the steps recommended by the second edition of the International Test Commission Guidelines for Translating and Adapting Tests (International Test Commission, 2018), after obtaining permission for the original authors to use the instrument. Research Ethics Committee also approved the study protocols. All participants signed an online informed consent form to participate in the study.

The **first step** included the *adaptation* of the instrument from European Portuguese to Brazilian Portuguese. Two independent researchers – fluent in the Brazilian Portuguese language and psychologists researching the topic of eating behaviors – carried out two independent adaptations of the instrument, which they later discussed generating the first adapted version.

The **second step** entailed a focus group, to preliminarily *test the first adapted version*. Twenty-two online invitations were sent to a convenience sample of university students from a research lab using a snowball procedure. The response rate was 72.72% (n=16). Inclusion criteria were being over 18 years old, natural from Brazil, and attending an undergraduate course in Brazil. Participants were asked to respond to the adapted version of the instrument, point out any misunderstandings, and give suggestions to improve their understanding. Most of the participants considered the instrument clear and easy to understand, and all items were kept.

The **third step** entailed an *evaluation committee*. The two independent researchers of step one prepared a summary of the comments and suggestions made in step two, and,

based on this information, reformulated the first version, creating a second revised version.

The **fourth step** entailed an *expert assessment* to which three judges were invited. Based on previous recommendations (Balbinotti, 2005), the judges invited held a Ph.D. in Psychology, were Brazilian, and had experience in conducting studies on eating behaviors and/or psychological assessment. The judges assessed the semantic, idiomatic, and cultural adequacy of the second revised version, and the equivalence between the original version and the second revised version of the instrument on a 3-point Likert scale (1- "not equivalent", 2 – "doubt", and 3 – "equivalent"). Comments and suggestions were also allowed for each item of the measure.

The **fifth step** consisted of another *evaluation committee*. A synthesis of the judges' considerations was carried out by the same researchers of Step one, who made the final adjustments and generated the third version of the instrument.

In the **sixth step,** which entailed *expert assessment*. The third version was again submitted to the same three judges of step four for their analysis, to evaluate the items regarding their adequacy to the objectives of the measure. Each item was evaluated on the following criteria: clarity of language – which consists of the analysis of the language used in the items; practical relevance – which aims to assess whether the item is, in fact, important to the instrument, through a 5-point Likert scale from (from "nothing" to "extremely" considering the presence of the criterion); and theoretical dimension, which entailed the classification of each item into Factor 1 (Repetitive Eating) or Factor 2 (Compulsive Grazing). Each item was classified by the judges using a categorical variable (yes/no) as belonging to each factor. Comments and suggestions were also allowed for each item. The Content Validity Coefficient (CVC; Hernandez-Nieto, 2002), was used to assess the agreement between judges during the fourth step (*Expert assessment*). Items

were considered acceptable when CVC values are between .7 and .8. For the analysis of the theoretical dimension, being a categorical variable with more than two judges, the Average Kappa coefficient was used. Kappa's values less than 0 (zero) indicate disagreement and values between .8 and 1.0 indicate almost perfect agreement (Cassepi-Borges, Balbinotti & Teodoro, 2010).

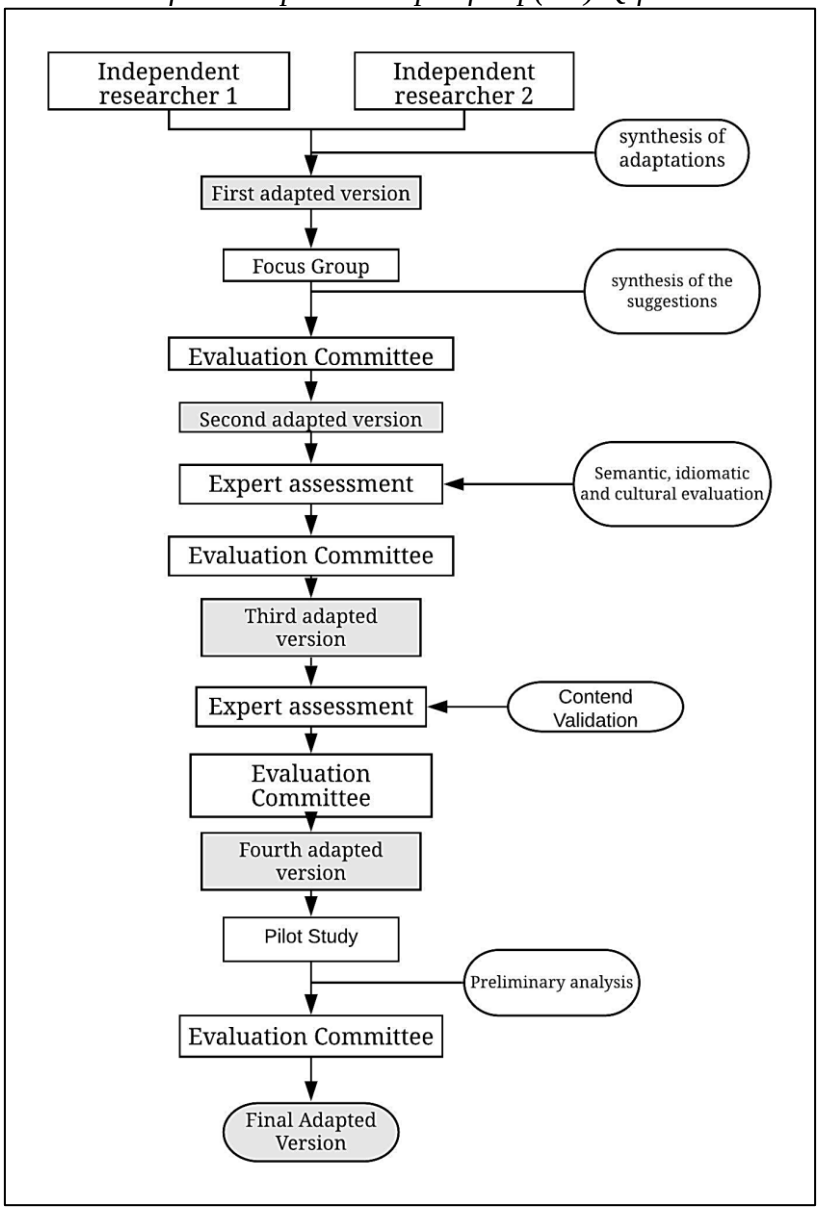
The construct validity coefficients (CVC) indicated a high rate of agreement among the judges (CVC > .8). The judges proposed adjustments to the text which were synthesized and incorporated into the questionnaire by step one's independent researchers.

In the **seventh step**, entailing the *evaluation committee*, the two researchers from step one analyzed again the judges' results and made the final adjustments, resulting in the fourth version. The fourth version was analyzed by a native European Portuguese judge (the original author of the Rep(eat)-Q), and no concerns were raised. Hence, the fourth version was submitted to pilot testing.

Lastly, the **eighth step** included the implementation of the pilot study that applied the fourth version in a sample with both high (at least with elementary school completed – ≥ 11 years of study) and low (below elementary level < 11 years of study) education level groups to guarantee the comprehension of the measure across different educational levels. The fourth version was disseminated online via personal and research laboratory social networks to be answered and commented on, along with a brief sociodemographic questionnaire that included, age, sex, monthly salary income, weight, height, and years of education. The collection was conducted using *Google Forms*. Inclusion criteria were being over 18 years old. All participants considered the instrument easily understandable. Based on these recommendations, the researchers reached the fifth and final version of the instrument. Figure 1 represents a flowchart of the steps previously described.

Figure 1 – Appendix 1

Flowchart of the adaptation steps of Rep(eat)-Q for a Brazilian population



Results

Adaptation and intelligibility analysis

It was decided to keep the term "Rep(eat)-Q" as the title and "*Questionário de Belisco Contínuo*" as the subtitle of the instrument. The term "*Petiscar*", as in European Portuguese, was replaced by the term "*Beliscar*" – this decision of the evaluation committee was based on the comments of the experts, on Grazing's definition, and the

term "*beliscar*" in the Priberam dictionary of the Portuguese language, which proved to be a more adequate definition for the target population than the definition of "*petiscar*". In general, no major differences among researchers were found, and the biggest changes implemented during this process were related to verb tenses, specifically, the gerund forms characteristic of Brazilian Portuguese grammar. All adaptations were made based on the existing literature – which emphasizes the importance of avoiding the literal translation of the items that are often not consistent with the target language (Borsa, Damásio & Bandeira, 2012).

During the third step, it was possible to assess the adequacy of the items and structure, in addition to providing suggestions or adaptations that could improve the adaptation for the target audience (Borsa, Damásio & Bandeira, 2012). Most of the participants considered the instrument clear and easy to understand and all items were kept.

Content Validity

In the assessment of semantic, idiomatic, and cultural equivalence, most items were marked with high values on the Likert scale by all judges, suggesting good equivalence with the items from the original version. The Content Validity Coefficient (CVC) results indicated a high agreement rate among the judges, suggesting that the adapted version contains a natural and acceptable language mainly focused on functionality and not on literal equivalence (Table 1 – Appendix 1). In the assessment of clarity of the language and practical and theoretical relevance, most items were again marked by all judges with high values on the Likert scale. The CVC indicated high agreement among judges in the categories' assessment. The judges made suggestions for word changes and the formulation of sentences in the first person, and the researchers chose to accept all the suggestions.

Table 1 - Appendix 1

Content Validity Coefficient for semantic, idiomatic, cultural equivalence, clarity, practical relevance, and theoretical relevance

Item	**Content Validation – semantic, idiomatic, and cultural equivalence evaluation step**			**Content Validation – clarity, practical relevance, and theoretical relevance assessment stage**		
	Semantic CVC	Idiomatic CVC	Cultural CVC	Clarity Language CVC	Practical Relevance CVC	Theoretical Relevance CVC
1	.999	.999	.999	.919	.999	.999
2	.999	.999	.999	.919	.999	.999
3	.999	.999	.933	.959	.999	.933
4	.999	.999	.999	.999	.999	.999
5	.999	.999	.933	.879	.999	.933
6	.999	.999	.933	.959	.999	.933
7	.999	.933	.999	.959	.933	.999
8	.999	.933	.999	.839	.933	.999
9	.999	.999	.999	.959	.999	.999
10	.999	.933	.933	.959	.933	.933
11	.999	.933	.933	.999	.933	.933
12	.933	.866	.866	.999	.866	.866
	Mean CVC Final: .994	Mean CVC Final: .966	Mean CVC Final: .961	Mean CVC Final: .946	Mean CVC Final: .966	Mean CVC Final: .961

Note. CVC = Content Validity Coefficient

Content Validity

In Step six, the three judges identified most of the items corresponding to the correct scale (repetitive eating or compulsive grazing). The medium Kappa (Kappa Fleiss), obtained a moderate value (.46) for the two subscales. This indicates that the judges were moderately able to assign each item to the respective factor (repetitive eating or compulsive grazing subscales) proposed in the original validation study (Conceição et al., 2017).

Pilot Study

A total of 60 people participated in the pilot study. All accepted the Informed Consent Form and the average time for completion was ten minutes. The high education sample (n=38 university students) consisted of 23 women (62.2%), and 15 men (39.5%), aged 18 to 25 years old (M=21.3; SD=1.7). The sample with low education levels (n=22) was composed of 14 women (63.63%) and 8 men (36.36%) aged 24 to 75 years (M=50; SD=12.13).

There were no significant differences between the two groups (high vs low education) for the total score, for the compulsive grazing subscale, and for the repetitive eating subscale (M=2.03 vs M=2.31, U=453, p=.05, Cohen's d=.19), for compulsive grazing subscale (M=1.98 vs M=2.33, t(2)=447, p>.05, Cohen's d=.23), and for repetitive eating subscale (M=2.08 vs M=2.29, t(2)=485, p>.05, Cohen's d=.14). The calculated internal consistency resulted in satisfactory correlations between items.

All participants in the pilot study considered the instrument easily understandable. This completed the adaptation process of the "Rep(eat)-Q – *Questionário de Belisco Contínuo*" and the final version of the questionnaire is available as supplementary

material. In general, the main adaptations focused on replacing terms, changing to the gerund tense, and changing the term referring to Grazing in the instrument title. These adaptations were based on Brazilian culture's most common terms and verb tenses.

References

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