ORIGINAL ARTICLE

TRANSLATION AND CROSS-CULTURAL ADAPTATION OF THE HOSPITAL FOOD ACCESS QUESTIONNAIRE FOR THE BRAZILIAN POPULATION

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Highlights: (1) The translated and adapted questionnaire was well understood by the target population. (2) Translation and cross-cultural adaptation are relevant given the scarcity of instruments available in Brazil. (3) Understanding these barriers will be important for preventing hospital malnutrition.

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(as accepted)

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TRANSLATION AND CROSS-CULTURAL ADAPTATION OF THE HOSPITAL FOOD ACCESS QUESTIONNAIRE FOR THE BRAZILIAN POPULATION

ABSTRACT

Objective: to translate and cross-culturally adapt the Hospital Food Access Questionnaire and administer it to hospitalized patients. **Methods**: in the first stage, the questionnaire was translated and adapted through six steps: initial translations, synthesis of translations, back-translation, committee review, pre-testing, and submission and approval. The Content Validity Index (CVI) was calculated based on the assessment conducted by a committee of experts established for this study, and the Misunderstanding Index (MI) was calculated based on the pre-test conducted with 11 hospitalized patients. In the second stage, a descriptive study was conducted using the final version of the questionnaire with 53 hospitalized patients. Socioeconomic, clinical, and anthropometric data were collected to characterize the sample. **Results**: all steps were completed. The CVI obtained from the assessment of the original, back-translated, and pre-final Portuguese versions was ≥ 80%, confirming the equivalence of the items. The MI in the pre-test was < 20% for all items. After administration of the questionnaire, frequency analysis showed that most patients (56.6%) were at risk or compromised regarding organizational and physical barriers. It was observed that 30.2% of patients did not receive food when a meal was missed and/or had difficulty reaching their food. **Conclusion**: the questionnaire translated and cross-culturally adapted into Portuguese was well understood by the target population, and a considerable frequency of barriers to food access was identified among the patients assessed.

Keywords: Food Service, Hospital. Diet Therapy. Translations.

INTRODUCTION

Diet therapy, through food provision, aims to maintain or restore patients' nutritional status, prepare them for surgical and clinical procedures, improve immune response and wound healing, among other objectives. The need to adapt food provision to different diseases and patient conditions requires modifications to hospital diets, such as changes in consistency[1,2].

Despite their therapeutic indication, these modified diets may compromise food acceptance[3]. However, other factors may also affect food acceptance, including those related to the patients themselves and the hospital environment[4]. Therefore, food intake below nutritional

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requirements is a common finding among hospitalized patients[5–7]. This is concerning, considering the high prevalence of hospital malnutrition and its association with mortality[8,9].

To investigate the difficulties faced by patients during hospitalization, a qualitative study conducted by researchers in England identified factors limiting adequate food intake, such as lack of access to food when patients felt hungry or insufficient food portions, lack of assistance that prevented patients from eating, as well as interruptions by healthcare professionals and noise disturbances. These factors related to the hospital environment, which may hinder food access and intake, are referred to as barriers to food intake[10].

In the absence of an instrument to assess barriers to food intake, the aforementioned group of English researchers developed the Hospital Food Access Questionnaire[11] based on their previously published qualitative study[10], providing important data on the presence of these barriers. This questionnaire was used in subsequent studies[7,12], demonstrating its effectiveness in identifying barriers to food intake.

In Canada, an adapted version of the questionnaire was used in a campaign against malnutrition conducted by the Canadian Malnutrition Task Force. The results showed that 69.2% of patients did not receive food when a meal was missed, 41.8% were interrupted during meals, and 41.1% felt too tired to eat[12]. Another study conducted in Australia showed that 36% of patients had difficulty opening food packages, 29% reported that menu information was insufficient, 28% were interrupted by staff during meals, 24% were in an uncomfortable position to eat, and 21% had difficulty reaching their food[7].

Despite the relevance of this topic and the data already published in other countries, there are no data on barriers to food intake in Brazilian hospitals due to the lack of a specific instrument for their assessment. In addition to concerns about poor acceptance of hospital diets, which is associated with hospital malnutrition and increased mortality[8-9], food insecurity still affects a substantial proportion of the Brazilian population, affecting 18.9 million people (24.2% of households)[13]. In this context, many patients may already experience food-related vulnerabilities even before hospitalization, which may be exacerbated in the hospital environment, making it essential to understand this issue in the context of healthcare. Thus, this study aims to translate and cross-culturally adapt the Hospital Food Access Questionnaire into Portuguese and administer it to hospitalized patients.

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METHODS

To achieve the study objectives, the methodology was divided into two stages. The first stage involved the translation and cross-cultural adaptation of the Hospital Food Access Questionnaire, and the second stage involved administering the questionnaire to a sample of hospitalized patients. These stages are described below (Figure 1).

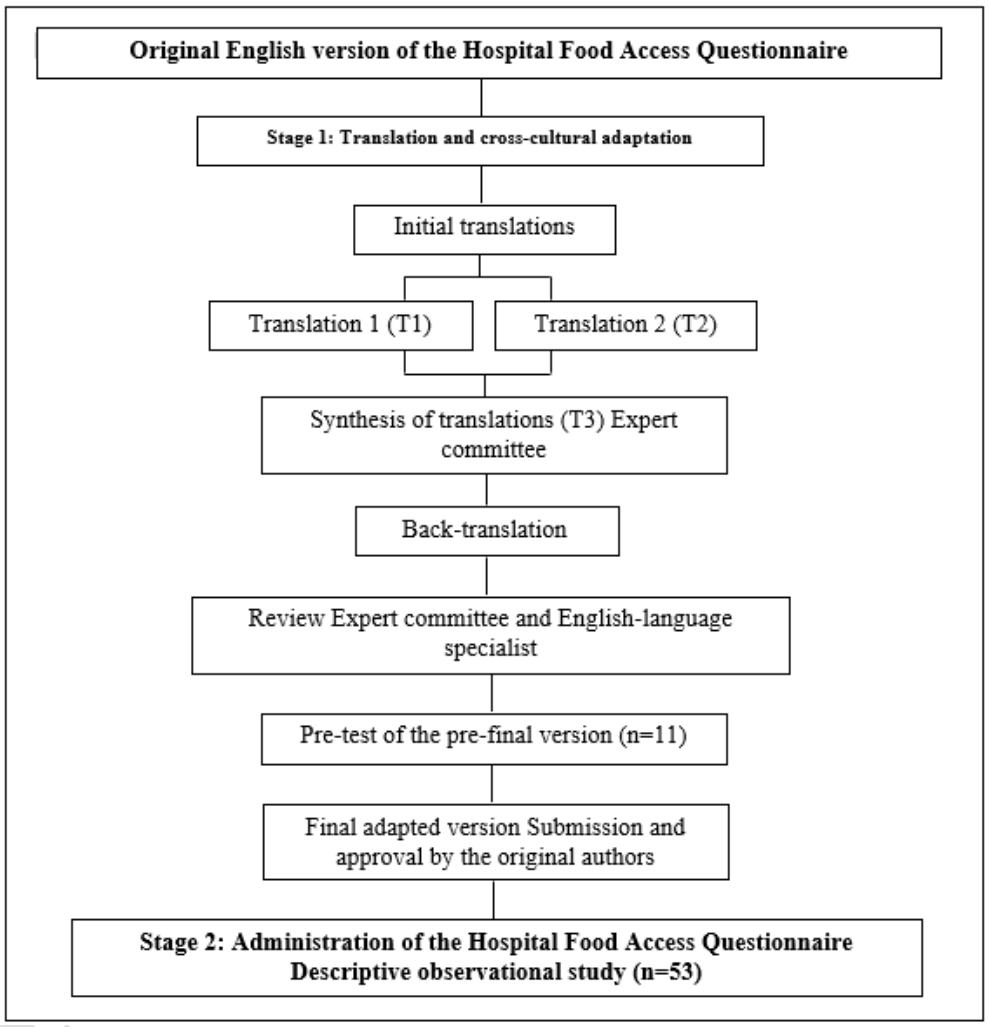


Figure 1. Flowchart of the stages of translation and cross-cultural adaptation of the Hospital Food Access Questionnaire and its administration.

The questionnaire consists of 27 items divided into five domains: (a) Hunger, comprising 4 items; (b) Physical barriers, comprising 7 items; (c) Organizational barriers,

comprising 6 items; (d) Food choice, comprising 5 items; and (e) Food quality, comprising 5 items. Responses are recorded on a four-point Likert scale. For analysis, responses were dichotomized (affirmative responses = 1; negative responses = 0). The score for each domain corresponds to the sum of affirmative responses. Patients who affirm one or two items in each domain are classified as "at risk", whereas those who affirm three or more items in each domain are classified as "compromised"[11].

Stage 1: Translation and Cross-Cultural Adaptation

This is a qualitative study involving the translation and cross-cultural adaptation of the Hospital Food Access Questionnaire, conducted after obtaining written permission from the original author. The translation and cross-cultural adaptation followed the methodology proposed by Beaton et al. (2000)[14], consisting of six steps: initial translations, synthesis of translations, back-translation, committee review, pre-testing, and submission and approval. The Checklist for Translation and Cross-Cultural Adaptation of Health Questionnaires was also used[15].

Initial Translations

Initially, two translations (T1 and T2) of the original text into the target language were produced by two independent bilingual translators whose native language was Brazilian Portuguese. One of the translators was a healthcare professional. In this step, the style of the questions and semantic equivalence were preserved[14].

Synthesis of Translations

Subsequently, the two resulting translations were reviewed, discussed, and synthesized (T3) by an expert committee consisting of four dietitians with experience in hospital settings and proficiency in English, and two undergraduate Nutrition students. The initial translators were consulted in cases of uncertainty. Decisions were made by consensus to establish a version

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that was more understandable to the target population and more similar to the original instrument. The synthesized version, obtained after the committee's assessment, was then submitted to the back-translation step[14].

Back-Translation

This step consisted of translating the synthesized Portuguese version into English, performed by a native English-speaking translator who was fluent in Portuguese and did not have a healthcare background. The translator did not have access to the original version of the questionnaire and was not informed that this was a back-translation process[14].

Review

The back-translated version was compared with the original English version. Subsequently, the original version was compared with the Portuguese version by the committee members and an English language specialist. The assessment was conducted individually and independently using a four-point Likert scale with the following response options: sentence not equivalent = 1 point; impossible to assess sentence equivalence without revision = 2 points; equivalent sentence requiring minor modifications = 3 points; and fully equivalent sentence = 4 points[16].

Based on the responses obtained, the Content Validity Index (CVI) was calculated to assess the proportion of ratings of 3 and 4 assigned by the committee experts, indicating equivalence. A CVI ≥80% confirms equivalence, whereas a CVI < 80% indicates the need for modifications based on the experts' comments[16]. After completing this step and making the necessary corrections, the version considered pre-final was obtained for administration in the pre-test.

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Pre-test

The pre-final version was administered to a group of 11 hospitalized patients to assess the target population's understanding of the questionnaire. The pre-test was conducted in November 2023 in the Internal Medicine Ward of the University Hospital of the Federal University of Grande Dourados (HU-UFGD), Mato Grosso do Sul (MS), Brazil. HU-UFGD is part of the Brazilian Unified Health System (SUS) and serves as a referral hospital for the Dourados macroregion, which comprises 33 of the state's 79 municipalities. In addition to administering the pre-final version of the questionnaire, socioeconomic and clinical data were collected, and anthropometric and dietary acceptance assessments were performed, as described in detail in Stage 2.

Adult and older patients (aged ≥18 years) who had been hospitalized for at least 72 hours, were receiving oral feeding, and agreed to participate in the study by signing the Informed Consent Form were included. Patients with neurological diseases affecting cognition, those receiving nutritional therapy (enteral and/or parenteral), and those with communication barriers, such as language barriers, were not included.

As the “Food choice” domain of the questionnaire refers to menu selection, and HU-UFGD does not offer this system, an adaptation was made on the day of data collection to enable patients to understand the items in this domain. For this purpose, patients were provided with a form containing two menu options, prepared using dishes from other hospital diets, and were asked to select the option they preferred.

The pre-final version was preferably completed by the patients themselves (target population). However, those who were unable to complete the questionnaire due to difficulties such as not having their glasses or being bedridden received assistance from their companions or the researchers. All participants were asked to mark any items they had difficulty understanding for subsequent clarification.

To assess patients' understanding and identify any difficulties, the Misunderstanding Index (MI) was calculated for each item[17]. Initially, patients and their companions were informed that the main purpose of completing the questionnaire was to assess their understanding of each item. If they had any doubts, they were asked to record their comments

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in writing in a space labeled “Suggestions”. These doubts were evaluated by the committee. When the MI is ≤ 20% for all items, the Portuguese version of the questionnaire can be considered finalized[18].

Submission and Approval

The submission and approval step consisted of sending the back-translated version of the Hospital Food Access Questionnaire to the authors of the original instrument to assess its equivalence with the original version. After reviewing the questionnaire, the authors provided formal approval of the adapted version.

Stage 2: Administration of the Hospital Food Access Questionnaire

After obtaining the final version of the Hospital Food Access Questionnaire, a descriptive observational study was conducted, with data collected between March and June 2024. During this period, 53 consecutive patients admitted to the Internal Medicine Ward of HU-UFGD were included. It should be noted that patients included in the pre-test stage did not participate in the questionnaire administration stage.

he inclusion criteria were the same as those adopted in the pre-test (Stage 1), including adult and older patients (aged ≥18 years) of both sexes, who had been hospitalized for at least 72 hours and were receiving oral feeding, and who had signed the Informed Consent Form. Patients with neurological diseases affecting cognition, those receiving nutritional therapy (enteral and/or parenteral), or those with communication barriers, such as language barriers, were not included.

To characterize the sample, data were collected through medical record review and/or patient interviews. Socioeconomic information (sex, age, family income, educational level, and occupation) and clinical information (comorbidities, recent surgery, and the presence of vomiting, diarrhea, and pain in the previous 24 hours) were obtained. Anthropometric assessment and evaluation of dietary acceptance were also performed.

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Socioeconomic assessment was based on monthly family income, expressed in terms of the minimum wage in effect at the time of assessment. Income categories ranged from ≤1 to >10 minimum wages. Additionally, patients were asked about their educational level (elementary education, secondary education, undergraduate education, postgraduate education, and no formal education/illiterate) and occupation (salaried employee, self-employed, receiving sickness benefits, retired, and unemployed).

Anthropometric assessment included measurement of current body weight and height. Body weight was measured in kilograms using a previously calibrated portable digital scale (Balmak®). Body Mass Index (BMI) was calculated from weight and height measurements and classified according to reference criteria for adults[19] and older adults[20].

Dietary acceptance was assessed by determining the percentage of food consumed at each of the six meals served in the hospital (breakfast, mid-morning snack, lunch, afternoon snack, dinner, and evening snack). Subsequently, the average daily food consumption was calculated and expressed as a percentage[21].

For data analysis, a database was created using the *Statistical Package for the Social Sciences* (SPSS), version 25.0. In the descriptive analysis, categorical variables were presented as absolute (n) and relative (%) frequencies, while continuous variables were expressed as means and standard deviations.

Ethical Considerations

Patients who voluntarily agreed to participate by signing the Informed Consent Form were included in the pre-test (Stage 1) and questionnaire administration (Stage 2). This study was approved by the Research Ethics Committee of UFGD, under approval number 5.919.944 and CAAE: 67220223.1.0000.5160.

RESULTS

In the pre-test, the Misunderstanding Index (MI) was below 20% for all items. After the necessary adjustments were made, the final Portuguese version of the Hospital Food Access

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Questionnaire was obtained. The back-translated version was submitted to the authors of the original instrument for review and was approved through written agreement. The cross-culturally adapted instrument is presented in Table 1.

During the initial translation process, some questionnaire items showed discrepancies between the translators. After discussion, the committee selected the version closest to the original. Some terms raised questions and were discussed. For example, in the item "Choosing de right food is difficult because there isn't enough information on the menu sheet", the term "right food" was translated as "alimento correto". However, the term "alimento" could be interpreted as referring to an individual food item rather than a meal. Therefore, the expression "alimento/comida" was chosen. Regarding the term "correto", the committee discussed whether patients (the target population) would have sufficient knowledge to identify what they should eat, and it was replaced with "ideal". Thus, the term "right food" was adapted to "alimento/comida ideal".

Table 1. Original and cross-culturally adapted Portuguese versions of the Hospital Food Access Questionnaire.

Domain	Item	Original English Version*	Portuguese Version**
		Directions: these questions are about your experience of getting enough food to eat while you are in hospital. We want to find out whether the hospital provides enough food for patients to eat. Please tick the answer that applies to you.	Instruções: essas questões são sobre sua experiência a respeito de receber comida suficiente para se alimentar quando internado(a) em um hospital. Nós queremos saber se o hospital fornece comida suficiente para os pacientes se alimentarem. Por favor, marque a resposta que se aplica a sua experiência.
Food Choice		*How much do you agree or disagree with the following statements:*	Quanto você concorda ou discorda com as seguintes afirmações?
	01	*I understand how to complete the menu sheet*	Eu sei como escolher as opções do cardápio
	02	*I have been able to choose meals that I like*	Eu consigo escolher as refeições que eu gosto
	03	*Choosing the right food is difficult because there isn't enough information on the menu sheet*	Escolher o alimento/comida ideal é difícil porque não há informação suficiente no cardápio.
	04	*Meals are served at times that suit me*	As refeições são servidas em horários adequados para mim
	05	*When the food arrives, I always want what I've ordered.*	Quando a comida chega, eu sempre quero o que pedi
		Agree strongly	Concordo fortemente
		Agree	Concordo
		Disagree	Discordo
		Disagree strongly	Discordo fortemente

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Organizational Barriers	06	*I did not receive the food that I ordered*	Eu não recebi a comida que pedi
	07	*When I was eating I was disturbed. For example, by activities, noises or unpleasant smells?*	Quando eu estava comendo fui incomodado(a). Por exemplo, por atividades, barulhos ou cheiros desagradáveis.
	08	*My mealtimes are interrupted by the hospital staff wanting to speak to me or give me treatment?*	Meus horários de refeição são interrompidos pelos funcionários do hospital querendo falar comigo ou administrar algum tratamento.
	09	*I missed my meals because I was not available when they were served*	Eu perdi minhas refeições porque eu não estava no momento em que elas foram servidas.
	10	*When I missed my meals, I was given hospital food by staff*	Quando eu perdi minhas refeições, por exemplo, quando fui levado(a) para fazer um exame no horário da refeição, recebi comida oferecida pelos funcionários do hospital.
		I never lost a meal	Eu nunca perdi uma refeição
	11	*When I needed help, I got the help I needed to eat my meals*	Eu recebi ajuda para comer as refeições quando precisei.
		I don't need help	Eu não precisei de ajuda
		Every meal	Todas as refeições
		Some meals, not every meal	Muitas refeições
		A few meals	Poucas refeições
		Never happened	Nunca aconteceu
Hunger		*Since you came into hospital, how often did these experiences apply to you?*	Desde que você veio para o hospital, com que frequência essas situações aconteceram?
	A1	*My visitors bring in food for me because I am hungry*	Meus acompanhantes/visitantes trazem comida porque eu sinto fome
	A2	*I get hungry because the time between meals are too long?*	Eu sinto fome porque o período entre as refeições é muito longo
	A3	*I felt hungry but I could not ask staff for food*	Eu senti fome mas não consegui pedir comida para os funcionários do hospital
	A4	*I felt hungry and wanted something to eat but no food was available from the hospital*	Eu senti fome e queria algo para comer, mas não tinha comida fornecida pelo hospital
		Every day	Todos os dias
		Some days, not every day	Muitos dias
		A few days	Poucos dias
		Never happened	Nunca aconteceu
Physical Barriers		*Have any of the following made it difficult to eat your meals*	Alguns dos seguintes itens causaram dificuldades para você fazer as suas refeições?
	Ph1	*Being in an uncomfortable position to eat in*	Estar em uma posição desconfortável para comer
	Ph2	*Difficulty reaching my food*	Dificuldade para alcançar a comida
	Ph3	*Difficulty cutting up my food*	Dificuldade para cortar os alimentos
	Ph4	*Difficulty opening packets/ unwrapping food*	Dificuldade para abrir pacotes ou desembrulhar os alimentos
	Ph5	*Difficulty feeding myself*	Dificuldade para me alimentar sozinho
	Ph6	*Not enough time to eat all the food that I wanted to eat*	Não tenho tempo suficiente para comer toda a comida que quero comer
	Ph7	*I need help to eat my meals*	Eu preciso de ajuda para me alimentar
		Every meal	Todas as refeições
		Some meals, not every meal	Muitas refeições
		A few meals	Poucas refeições
		Never happened	Nunca aconteceu

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Food Quality		*In general how satisfied are you with the quality of hospital food?*	Em geral, quanto satisfeito(a) você está com a qualidade da comida do hospital?
	Q1	*Taste*	Sabor
	Q2	*Appearance*	Aparência
	Q3	*Smell*	Cheiro
	Q4	*Portion size*	Tamanho das porções
	Q5	*Temperature of food*	Temperatura da comida
		Extremely satisfied	Extremamente Satisfeito(a)
		Satisfied	Satisfeito(a)
		Dissatisfied	Insatisfeito(a)
		Extremely dissatisfied	Extremamente Insatisfeito(a)
	Q6	*Rate portion size*	Avalie o tamanho das porções
		Too small	Muito pequeno
		Alright	Tamanho adequado
		Too big	Muito grande
	Q7	*Rate temperature of food*	Avalie a temperatura da comida
		Too cold	Muito frio
		Alright	Temperatura adequada
		Too hot	Muito quente
		Effects of illness and treatment	Efeitos da doença e tratamento
		Directions: how often have any of the following affected the amount of food you've eaten during mealtimes?	Instruções: com que frequência os seguintes itens afetaram a quantidade de comida que você comeu durante as refeições?
	E1	*Loss of appetite/didn't feel like eating*	Perda de apetite ou falta de vontade de comer
	E2	*Sickness*	Doença
	E3	*Pain*	Dor
	E4	*Tired*	Cansaço
	E5	*Worry*	Preocupação
	E6	*Depressed*	Depressão (tristeza)
	E7	*Breathing difficulties*	Dificuldade para respirar
	E8	*Chewing or swallowing difficulties*	Dificuldades para mastigar ou engolir

*Source: Naithani et al., 2009[11]. **Source: Authors.

For the item "When I missed my meals, I was given hospital food by staff", translated as "Quando eu perdi minhas refeições, recebi comida oferecida pelos funcionários do hospital", it was decided to include an example to facilitate understanding, resulting in the following version: "Quando eu perdi minhas refeições, por exemplo, quando fui levado(a) para fazer um exame no horário da refeição, recebi comida oferecida pelos funcionários do hospital".

Some response options also prompted discussion among the committee members. The responses "Every meal", "Some meals, not every meal", "A few meals", and "Never happened" were translated as "Todas as refeições", "Algumas refeições, não em todas as refeições", "Poucas refeições", and "Nunca aconteceu", respectively. It was observed that the distinction between "Algumas refeições, não em todas as refeições" and "Poucas refeições" was unclear and could cause confusion. Therefore, the response "Algumas refeições, não em todas as

refeições" was adapted to "Muitas refeições". Similarly, the response options "Some days, not every day" and "A few days", translated as "Alguns dias, não todos os dias" and "Poucos dias", respectively, also raised questions. The committee decided to adapt "Alguns dias, não todos os dias" to "Muitos dias".

In the section of the questionnaire translated as "Efeitos da doença e tratamento", adaptations were made to the Portuguese version to ensure consistency. The terms were converted into nouns. Thus, "Tired" was translated as "Cansaço" to be consistent with the other terms, such as "Doença" and "Dor". The term "Depressed" was translated as "Depressão". However, considering the possibility that this term could be interpreted as referring only to patients with a formal diagnosis, it was decided to include sadness, a symptom relevant to food acceptance, resulting in "Depressão (tristeza)" (Depression [sadness]).

The CVI obtained from the assessment of the original and back-translated versions, as well as the original and pre-final Portuguese versions, was ≥ 80%, confirming the equivalence of the items and allowing the pre-test to be conducted.

The mean age of patients included in the pre-test (Stage 1) was 50.8 ± 17.4 years, and mean dietary acceptance was 88.6 ± 18.5%. Most patients were female (54.5%), White (70%), had elementary education (63.6%), and had a monthly income between 1 and 3 minimum wages (54.5%). The mean BMI was 23.4 ± 3.4 kg/m². Of the total sample, the questionnaire was completed by 36.4% of patients and 27.3% of companions, while 36.4% of patients required assistance from the researchers to read and complete it. The MI was below 20% for all items. Thus, the final version of the questionnaire was obtained.

In Stage 2, the questionnaire was administered to 53 patients, with a mean age of 60.8 ± 16.2 years. Mean dietary acceptance was 80.7 ± 26.9%. Similar to the pre-test sample, most patients were female, White, had elementary education, and had a monthly income between 1 and 3 minimum wages. The mean BMI was 26.3 ± 4.4 kg/m². It should be noted that anthropometric measurements could not be obtained for some patients due to physical limitations (Table 2).

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Table 2. Socioeconomic, clinical, and nutritional status characteristics of patients included in the study conducted at HU-UFGD using the final version of the questionnaire (n=53).

Characteristics	n (%)
Sex	
Male	25 (47.2)
Female	28 (52.8)
Race	
White	32 (60.4)
Black	2 (3.8)
Brown	18 (34.0)
Asian	1 (1.9)
Monthly Family Income**	
< 1 minimum wage	16 (30.2)
1–3 minimum wages	30 (56.6)
3–5 minimum wages	4 (7.5)
> 5 minimum wages	3 (5.7)
Educational Level	
No formal education/Illiterate	8 (15.1)
Incomplete elementary education	24 (45.3)
Completed elementary education	5 (9.4)
Incomplete secondary education	5 (9.4)
Completed secondary education	9 (17.0)
Higher education	2 (3.8)
Occupation	
Unemployed	14 (26.4)
Self-employed	3 (5.7)
Salaried employee	9 (17.0)
Retired	23 (43.4)
Comorbidities	
Systemic arterial hypertension	26 (49.1)
Diabetes Mellitus	15 (28.3)
Kidney disease	18 (34.0)
Heart disease	12 (22.6)
Liver disease	5 (9.4)
Surgery performed in the last 6 months	12 (22.6)
Presence of vomiting*	5 (9.4)
Presence of diarrhea*	3 (5.7)
Presence of pain*	26 (50.9)
Nutritional Status – BMI Classification	
Underweight	3 (6.7)
Normal weight	23 (51.1)
Overweight or obesity	19 (42.2)

*Last 24 hours. **Minimum wage: BRL 1,420.00. BMI: Body Mass Index. Source: Authors.

The data regarding the classification of the Hospital Food Access Questionnaire are presented in Table 3. A higher frequency of patients classified as compromised or at risk was observed for organizational barriers, followed by physical barriers. Considering the sum of these categories, most patients reported organizational (56.6%) and physical (56.6%) barriers.

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Table 3. Classification of patients assessed (n=53) according to risk or compromised food access.

Domains of the Hospital Food Access Questionnaire	No Risk n (%)	At Risk n (%)	Compromised n (%)
Organizational Barriers	23 (43.4)	16 (30.2)	14 (26.4)
Hunger	41 (77.4)	10 (18.9)	2 (3.8)
Physical Barriers	23 (43.4)	18 (34.0)	12 (22.6)
Food Quality	41 (77.4)	8 (15.1)	4 (7.5)

Source: Authors.

Table 4 presents the frequencies of affirmative responses for each questionnaire item. Regarding organizational barriers, the most frequently reported situation was missed meals: 30.2% of patients reported missing a meal, for example, due to examinations or procedures, without subsequently being provided with food by staff on every occasion. Once patients are allowed to resume eating, hospital staff should provide them with the missed meal. Other frequently reported organizational barriers (26.4% each) were: (a) lack of assistance with eating at every meal; (b) interruptions during meals by staff to administer treatments or talk; and (c) disturbances during meals, such as activities or noise.

Regarding physical barriers, difficulty reaching food was the most frequently reported (30.2%), followed by difficulty cutting food (28.3%) and being in an uncomfortable position to eat (28.3%) (Table 4).

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Table 4. Frequency of affirmative responses to each item of the Hospital Food Access Questionnaire.

Barriers to Food Access	Affirmative n (%)
Barreiras organizacionais	
I did not receive the food that I ordered	13 (24.5)
When I was eating I was disturbed. For example, by activities, noises or unpleasant smells?	14 (26.4)
My mealtimes are interrupted by the hospital staff wanting to speak to me or give me treatment?	14 (26.4)
I missed my meals because I was not available when they were served	6 (11.3)
When I missed my meals, for example, when I was taken for a medical examination during mealtime, I was given hospital food by staff	16 (30.2)
When I needed help, I got the help I needed to eat my meals	14 (26.4)
Hunger	
My visitors bring in food for me because I am hungry	3 (5.7)
I get hungry because the time between meals are too long?	7 (13.2)
I felt hungry but I could not ask staff for food	3 (5.7)
I felt hungry and wanted something to eat but no food was available from the hospital	4 (7.5)
Physical Barriers	
Being in an uncomfortable position to eat in	15 (28.3)
Difficulty reaching my food	16 (30.2)
Difficulty cutting up my food	15 (28.3)
Difficulty opening packets/ unwrapping food	13 (24.5)
Difficulty feeding myself	14 (26.4)
Not enough time to eat all the food that I wanted to eat	1 (1.9)
I need help to eat my meals	14 (26.4)
Food Quality*	
Taste	4 (7.5)
Appearance	7 (13.2)
Smell	6 (11.3)
Portion size	7 (13.2)
Temperature of food	3 (5.7)
Effects of Illness and Treatment****	
Loss of appetite/didn’t feel like eating	34 (64.2)
Sickness	31 (58.5)
Pain	21 (39.6)

Tired	19 (35.8)
Worry	17 (32.1)
Depressed (sadness)	14 (26.4)
Breathing difficulties	15 (28.3)
Chewing or swallowing difficulties	18 (34.0)

*Dissatisfaction; **Symptoms that affected the amount of food consumed. Source: Authors.

DISCUSSION

The Portuguese version of the Hospital Food Access Questionnaire, translated and cross-culturally adapted, was adequately understood by the target population, demonstrating its applicability in the Brazilian context. This finding is particularly relevant given the lack of an instrument in Portuguese for the systematic assessment of barriers to food intake in hospital settings. In the present study, organizational and physical barriers were the most frequently reported, indicating that factors related to the care process and conditions of food access play an important role in food intake among hospitalized patients.

These findings are particularly relevant given the high prevalence of hospital malnutrition in Brazil, which has not changed substantially over time. The Brazilian Survey on Hospital Nutritional Assessment (IBRANUTRI), conducted in 1998, identified a malnutrition prevalence of 48.1% among patients admitted to public hospitals[22]. More recent data from the NutritionDay study, conducted in ten Latin American countries, including Brazil, showed a prevalence of malnutrition risk of 39.6% in a sample of 14,515 hospitalized patients, as well as a high frequency (50%) of inadequate food intake and weight loss [8], highlighting the persistence of this problem in hospital settings. Malnutrition is associated with reduced immune response, increased risk of infectious and surgical complications, delayed wound healing, and a higher risk of pressure injuries, directly affecting length of hospital stay and hospital costs[25–27]. In this context, hospital malnutrition represents a major public health problem.

To prevent malnutrition, food intake and nutritional status of hospitalized patients should be regularly assessed and monitored. The various factors that may influence dietary acceptance and intake, such as patients' signs and symptoms, the quality of the food served, and

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the hospital environment, should also be considered[1,4,26]. Therefore, investigating barriers to food intake in hospitals is of great importance.

Identifying these barriers allows a better understanding of potentially modifiable factors related to food intake, contributing to improvements in nutritional care, particularly in a context of high malnutrition prevalence[8]. In addition, food insecurity in Brazil must be considered, as many patients may already experience food-related vulnerabilities before hospitalization, potentially increasing the risk of deterioration in nutritional status during their hospital stay[13]. Evidence indicates that patients experiencing food insecurity have a higher risk of postoperative complications and longer hospital stays compared with those without this condition. In this context, adequate nutritional care may reduce these negative impacts[27], and access to food in hospitals is an essential component of this care. Therefore, the use of instruments capable of systematically identifying barriers that interfere with this process is essential.

The Hospital Food Access Questionnaire is an easy-to-administer instrument that can be completed by patients themselves or their companions. Previous studies have demonstrated adequate internal consistency for most domains, with the following Cronbach's alpha values: hunger = 0.886; physical barriers = 0.809; organizational barriers = 0.632; food choice = 0.414; and food quality = 0.738[10,11]. These results indicate that the instrument has good capacity to assess relevant aspects of the food-related experience in hospital settings. The organizational barriers and food quality domains showed moderate reliability, whereas the physical barriers and hunger domains showed high reliability[28].

In the present study, a high frequency of organizational and physical barriers was observed, a finding consistent with international studies[7,11,12]. These results reinforce that difficulties related to food access and intake are not isolated events but reflect characteristics of the hospital care process. In this regard, interventions aimed at reducing these barriers, such as implementing protected mealtimes and providing mealtime assistance, have been associated with improved food intake and reduced nutritional risk[29,30]. Furthermore, evidence suggests that mealtime assistance, resulting from the involvement of the multidisciplinary team, reduces the need for additional oral nutritional supplements, the risk of developing nutritional deficits, and food waste[31].

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In Brazil, although systematic data on barriers to food intake in hospital settings are still unavailable, experiences from other countries have been incorporated into documents such as the Position Statement of the Brazilian Society of Parenteral and Enteral Nutrition (BRASPEN) on oral diets in hospitals. The document addresses the importance of mealtime assistance and protected mealtimes by promoting an environment free from distractions and noise and avoiding interruptions during meals[4]. In this context, the availability of a validated instrument in Portuguese represents an important advance, enabling the generation of national data and supporting the implementation of evidence-based care practices.

For this instrument to be effectively applicable in the Brazilian context, it is essential to consider the cultural and social characteristics of the target population. In this regard, cross-cultural adaptation goes beyond language translation, involving the adaptation of terms, concepts, and experiences that differ from those of the target-language population. Considering that Brazil is a culturally diverse country, literal translation alone may not ensure adequate understanding of the instrument, making it essential to adapt its original components[14]. In this regard, the translation and cross-cultural adaptation process took into account educational inequalities in Brazil. It is estimated that only 53.1% of the Brazilian population aged 25 years or older have completed compulsory basic education[32], reinforcing the need to develop instruments accessible to individuals with different educational levels. In the present study, the low MI observed in the pre-test, conducted in a hospital that is part of the Brazilian Unified Health System (SUS), with patients predominantly having elementary education, indicates that the questionnaire was adequately understood in this context.

Despite these positive aspects, the present study has some limitations. The absence of a menu selection system at HU-UFGD required an adaptation when administering one of the questionnaire domains. However, after clarification, the items were understood by the target population, and the committee's assessments of the original, back-translated, and Portuguese versions also support the reliability of the translation and cross-cultural adaptation process. Regarding the results obtained from administering the final questionnaire, the sample size in Stage 2 reflects the number of patients admitted and eligible during the established data collection period, which may limit the generalizability of the findings. Nevertheless, the

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consecutive inclusion of participants helps reduce selection bias and improve the representativeness of the study setting.

The present cross-culturally adapted questionnaire allows the assessment of relevant aspects of the food-related experience in hospital settings that may compromise food intake, such as organizational and physical barriers to food access, as demonstrated in this study. Future studies with larger, multicenter samples are needed to broaden the understanding of these barriers in Brazil and support interventions aimed at improving hospital nutritional care.

CONCLUSION

The translation and cross-cultural adaptation of the Hospital Food Access Questionnaire were conducted according to methods and procedures recommended in the literature, resulting in a version that was adequately understood by the target population. A considerable frequency of barriers to food intake was observed among the patients assessed, particularly organizational and physical barriers.

Given the scarcity of instruments adapted into Portuguese to assess barriers to food intake in hospital settings, this study contributes to advancing clinical practice and research by providing a questionnaire that enables the identification of these barriers and supports the implementation of strategies to improve the quality of nutritional care, considering the high prevalence of hospital malnutrition in Brazil. Furthermore, it enables the generation of internationally comparable data, contributing to the consolidation of knowledge in this field.

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TRANSLATION AND CROSS-CULTURAL ADAPTATION OF THE HOSPITAL FOOD ACCESS QUESTIONNAIRE FOR THE BRAZILIAN POPULATION

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