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TECHNICAL NOTE

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Translation of the nine item avoidant/restrictive food intake disorder screen (NIAS) questionnaire in French (NIAS-Fr)

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Abstract

Background: The Nine Item Avoidant/Restrictive Food Intake Disorder (ARFID) Screen (NIAS) questionnaire is originally available in English. Given the significant overlap of ARFID-like symptoms in gastrointestinal (GI) diseases, ARFID screening becomes crucial in these patient populations. Consequently, the translation of the NIAS questionnaire into French is necessary for its utilization in French-speaking countries.

Methods: Clinical experts in neuro-gastroenterology and dietetics from four medical centres in two French-speaking countries (France and Belgium) took part in a well-structured questionnaire translation procedure. This process involved six steps before final approval: translation from English to French, backward translation, comparison between the original and retranslated versions, testing the translated version on patients, making corrections based on patient feedback, and testing the corrected version on an additional sample of patients.

Key Results: The NIAS questionnaire in French (NIAS-Fr) was tested on 18 outpatients across the involved centres. For the majority of native French-speaking patients, the translated questionnaire was well understood and clear. After incorporating two relevant modifications suggested by the patients, the translated questionnaire was approved through testing on an additional sample of patients.

Conclusions and Inferences: The involvement of two French-speaking countries was crucial for the harmonization and cultural adaptation of the questionnaire. As a result, the NIAS-Fr is now available for use in 54 French-speaking countries, serving approximately 321 million French speakers across five continents for screening ARFID, for both clinical and research purposes.

KEYWORDS
ARFID, functional Gastrointestinal Disorders, NIAS, questionnaire, screening

1 | INTRODUCTION

According to the Diagnostic and Statistical Manual, 5th Edition (DSM-5), Avoidant/Restrictive Food Intake Disorder (ARFID) is classified as an eating disorder which can be applied to children, adolescents and adults.[1] Unlike other eating disorders, ARFID is not characterized by disturbances related to body weight or shape. As a consequence of their restrictive and avoidant eating behaviors, ARFID patients have at least one of the following conditions: a significant weight loss, a significant nutritional deficiency, a dependence on enteral feeding or oral nutritional supplements, or a marked interference with psychosocial functioning.[2]

The Nine Item ARFID Screen (NIAS) is a 9-item self-report questionnaire used as an assessment tool for detecting avoidant/restrictive eating patterns. This questionnaire includes three subscales: picky eating, appetite, and fear of aversive consequences, which are intended to align with the three presentations that are currently included in the DSM-5 diagnostic criteria.[3] When used alongside a negative screening on a measure of symptoms related to other eating disorders, such as the SCOFF, the NIAS can be used for ARFID screening.[4] In the end, the diagnosis remains clinically based.

Studies have shown that ARFID may co-occur with anxiety disorders and neurodevelopmental disorders, including attention-deficit/hyperactivity disorder and autism spectrum disorder.[5] In addition, ARFID symptoms are common in gastroenterology, especially in patients with disorders of gut-brain interaction (DGBI).[6] In a subgroup of patients with Irritable bowel syndrome (IBS), severe food avoidance has been reported, and these symptoms may be indicative of ARFID.[7] While restrictive diets are one aspect of IBS management, it is important to screen these populations for ARFID to prevent the prescription of such restrictive diets to patients who might be at risk for nutritional deficiencies and disordered eating.[8]

To date, the NIAS has been originally available in English. Therefore, there is a need for a validated French version of the NIAS for research and clinical purposes. Henceforth, a collaborative work was initiated involving two French and two Belgian medical centres. In this paper, we report the structured translation of the NIAS from English to French (NIAS-Fr) and its subsequent validation.

Key points

- A well-structured translation procedure of the NIAS questionnaire from English to French was conducted by clinical experts in two French-speaking countries.
- Cultural adaptation and the identification of shared terms and meanings in Francophone countries were essential in the translation process to create a harmonized French version.
- The NIAS-Fr can now be used for clinical and research purposes in all French-speaking countries.

2 | MATERIALS AND METHODS

The translation process was initiated by clinical experts in neurogastroenterology (C.M., F.M., H.L., H.P., S.R., G.C.) and in dietetics (P.V.O.) from France (Rouen, Lyon) and Belgium (Brussels). The original version of the questionnaire used for the translation process was in English.

2.1 | Structures and roles

Roles were defined at the beginning of the process. There was a coordinator who managed the whole process and communication between all members (C.M.). Three translators, native speakers of the target language (French) and fluent in English (P.V.O., H.L., F.M.), translated the original questionnaire into French. They worked independently from each other, then compared and combined the 3 versions in one. A backward translator highly experienced in English, as well as native French speaker, translated the final French translation back into the original language, i.e. English (R. M-L.). Two external reviewers compared all original version with the backward versions at the end of the process (C.M., G.C.).

2.2 | Translation procedure

First, the original NIAS questionnaire was translated from English to French independently by the three translators, who then compared their versions. Identified differences were confronted and combined into one common French-translated version. Second, the backward translator translated this first French version back into English. Third, a revision was performed to compare the original NIAS questionnaire and its backward translated version. Some sentences were therefore revised in the French version when discrepancies were identified. Then, a pre-final version of the NIAS questionnaire in French (NIAS-Fr) was approved by the clinical experts. The comprehension of this version was tested on patients in French and Belgian centers. Patients anonymously completed a form to assess whether they perceived the questionnaire easy to understand, unambiguous and clear on a 6-points scale (Strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree). At no point were health-related data collected. The patients were finally asked if some queries should be modified ("yes" or "no") and had the opportunity to add suggestions. Based on the patients' feedback and expertise of the clinicians, it was decided whether modifications of the questionnaire were needed to obtain a final, clear and well-understood version of the translated NIAS questionnaire in the targeted language (NIAS-Fr) all while preserving the original meanings from the English version. The corrected version of the NIAS-Fr was therefore evaluated on an additional sample of patients in order to be approved. (Figure 1).

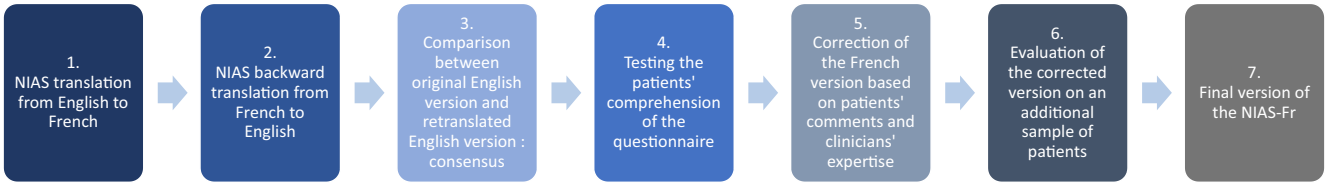

FIGURE 1 Process for validation of the French version.

TABLE 1 Translated French version of the NIAS questionnaire (NIAS-Fr) (Dépistage des troubles de restriction/évitement de la prise alimentaire (NIAS – Fr)).

		Pas du tout d'accord	Pas d'accord	Légèrement pas d'accord	Légèrement d'accord	D'accord	Tout à fait d'accord
Mangeur difficile (échelle positive si score ≥ 10)							
1	Je fais la fine bouche (je suis difficile avec la nourriture)						
2	Je n'aime pas la plupart des aliments que les autres personnes mangent.						
3	La liste des aliments que j'aime et que je mange est plus courte que la liste des aliments que je ne mange pas.						
Petit appétit (échelle positive si score ≥ 9)							
4	Manger ne m'intéresse pas particulièrement: j'ai l'impression d'avoir un plus petit appétit que les autres personnes.						
5	Je dois me forcer à manger des repas réguliers pendant la journée ou à manger une quantité suffisante de nourriture pendant le repas.						
6	Même quand je mange des aliments que j'aime vraiment, c'est difficile pour moi d'en manger une quantité suffisante lors des repas.						
Peur de manger (échelle positive si score ≥ 10)							
7	J'évite de manger ou je m'arrête de manger parce que j'ai peur d'avoir un inconfort digestif, de m'étouffer ou de vomir.						
8	Je me limite à certains aliments parce que j'ai peur que d'autres aliments déclenchent un inconfort digestif, un étouffement ou un vomissement.						
9	Je mange des petites portions parce que j'ai peur d'avoir un inconfort digestif, de m'étouffer ou de vomir.						

Note: Interprétation du score: les réponses à chaque question correspondent à un score entre 0 (« *Pas du tout d'accord* ») et 5 (« *Tout à fait d'accord* »). Il y a 3 sous-échelles (« mangeur *difficile* », questions 1 à 3; « petit *appétit* », questions 4 à 6; « *peur* de manger», questions 7 à 9) pour chaque présentation de l'ARFID, chacune scorée entre 0 et 15. Les valeurs seuil pour les sous-échelles sont: difficile ≥10, appétit ≥9, peur ≥10. Il est important de noter que ces valeurs seuils correspondent à celles de la version originale du NIAS (en anglais) et ont été validées en conjonction avec un dépistage négatif sur l'EDE-Q8 (Burton Murray H et al.[4]). Les valeurs seuils n'ont pas encore été établies pour le NIAS-FR. Ainsi, un dépistage de l'ARFID doit être accompagné d'un dépistage négatif d'autres troubles du comportement alimentaire.

3 | RESULTS

The French translated version of the questionnaire (NIAS-Fr) was submitted to 18 outpatients who had a schedule visit at the hospital for a carbohydrate hydrogen breath test in the three centres involved ($n=8$ in Brussels, $n=5$ in Lyon, $n=5$ in Rouen). Eighty-three percent of the patients found that the questionnaire was easy to understand (7/18 "strongly agree"; 7/18 "agree"; 1/18 "slightly agree"). Thirteen out of 18 patients agreed that the questions were clear and without ambiguity, while 4 patients disagreed on this point and one patient did not answer. Half of the patients (10/18) suggested to do some modifications of question number 1 (7/18), and question number 3 (2/18). Suggested modifications for the first question were related to misunderstanding of the terms used, particularly concerning "je fais la fine bouche", which translates to "I am a picky eater" in French. Even though the translation was correct, an explanation was added in brackets "je suis difficile avec la nourriture", translating to "I am picky with food", since "je fais la fine bouche" might also be understood as someone demanding (not only with food). Concerning Question 3, it was related to a redaction mistake. Corrections were made for those two queries. The final version of the NIAS-Fr questionnaire is presented in Table 1, with the same cut-off scores utilized as in the original English version (Table 1).[4] This version underwent testing on 18 other outpatients across the three centres ($n=5$ in Brussels, $n=8$ in Lyon, $n=5$ in Rouen). Nearly all patients, with the exception of

one, found the questionnaire easy to understand (7/18 "strongly agree"; 10/18 "agree"; 1/18 "strongly disagree") and clear without ambiguity (8/18 "strongly agree"; 5/18 "agree"; 4/18 "slightly agree"; 1/18 "strongly disagree").

4 | DISCUSSION

The aim of this collaborative work was to have a French-translated version of the NIAS for screening ARFID in clinical and research contexts among patients with disorders of gut-brain interaction (DGBI).

Up to 40% of DGBI patients meet criteria for symptoms of ARFID,[9] particularly those with a history of restrictive diets.[10] While ARFID-like symptoms are common among DGBI patients, we found only eight papers that meet keywords for both ARFID and DGBI on PubMed to date.[9,11–17] In addition, since ARFID has been first described by the DSM-5 in 2013, the current literature on this eating disorder among adult population is very limited. Studies are heterogeneous with regard to their methodology. We found only 12 studies including the use of the NIAS questionnaire published since its validation in 2018.

Given that the number of native French speakers is estimated to 321 million worldwide, having a validated French version of the NIAS will be crucial for a better understanding of the association between DGBI and ARFID. On the one hand, a French version of the NIAS is necessary for advancing clinical research. On the other hand, the clinical purpose of the NIAS, when used in combination with other detection methods such as the EDE-Q8 or the SCOFF questionnaire, is to screen the risk of eating disorders.[4] The identification of eating disorders, namely ARFID, will help to deliver an adapted dietetic approach.[18] Indeed, restrictive diets such as low FODMAPs are often part of the clinical management in DGBI, especially IBS.[19] Screening these patients for the presence of ARFID is therefore important to prevent the risk of developing or exacerbating eating disorders.

Similar to the SCOFF questionnaire,[20] a back-translation method was also used to obtain a French version of the NIAS. The French translated version of the NIAS questionnaire (NIAS-Fr) was well understood and clear for a majority of the native French speaking patients. The inclusion of two different French-speaking countries (France and Belgium) was important for harmonization, acknowledging cultural differences, and identifying shared terms and meanings in all Francophone countries. The translation process was well-structured, and the final version incorporated two relevant patient-suggested modifications, resulting in an improved questionnaire understood by a majority of the patients. Without a rigorous and standardized translating process, the questionnaire can have deleterious effects on results, especially in the absence of cultural adaptation.[21]

In conclusion, a French translated version of the NIAS questionnaire (NIAS-Fr) has been tested and approved among French and Belgian patients. This structured translation of the NIAS expands its use to the 54 French-speaking countries (members of the International Organization of La Francophonie) with an estimated 321 million French speakers across five continents to screen ARFID for clinical and research purposes.

AUTHOR CONTRIBUTIONS

C.M. and F.M. initiated the study. C.M., F.M., H.L., H.P., S.R., G.C., and P.V.O planned the study. P.V.O. collated the information. P.V.O. and H.M.M. drafted the manuscript. Each author has approved the final draft submitted.

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There was no funding for this study.

CONFLICT OF INTEREST STATEMENT

CM has served as a consultant/advisory board member for Kyowa Kirin, Norgine, Biocodex, Mayoly Spindler, Tillots, Ipsen, and Nestlé HealthScience. FM has served as a consultant/speaker for Laborie, Medtronic, Dr Falk Pharma. HL has served as a consultant/speaker for Johnson&Johnson, Dr Falk Pharma, Ipsen, Menarini and Takeda. SR has served as a consultant for Dr Falk Pharma, Sanofi, Medtronic and research support from Medtronic and Diversatek Healthcare. GG has served as a consultant/speaker for Laborie, Medtronic, Kyowa Kirin, Lilly and Enterra medical. Other authors have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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