Linguistic and content validity of the Swedish version of the PedsQL™ gastrointestinal symptoms scales and symptoms module for paediatric patients

Matilda Bräutigam1,2 | Michaela Dellenmark-Blom1,2 | Vladimir Gatzinsky1,2 | Jenny Bergström2 | Kate Abrahamsson1,2

Abstract
Aim: To describe the process of linguistic and content validity of the Swedish version of the PedsQL™ Gastrointestinal Symptoms Scales and Symptoms Module, measuring health-related quality of life (HRQOL) in children with gastrointestinal (GI) disorders.

Methods: The establishment of linguistic and content validity was carried out in compliance with international standards on patient-reported outcome measurements. The process included forward translation, expert review and reconciliation, backward translation, backward translation review and interviews with 15 children aged 5–18 years with GI tract symptoms and 20 parents of children with GI tract symptoms aged 2–18 years.

Results: The Swedish version of the PedsQL™ Gastrointestinal Symptoms Scales and Symptoms Module (child report 5–18 years, parent report for children 2–18 years) was achieved without major difficulties. Eight issues needed discussion after forward translation, and there was one change after backward translation and three revisions following patient and parent testing.

Conclusion: A conceptually equivalent Swedish language version of PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module for children aged 2–18 years old was developed. This enables improved HRQOL evaluations in children with GI disorders in Sweden. Future research using a larger sample is recommended to evaluate validity and reliability of the Swedish language version of the module.

Keywords
children, content validity, gastrointestinal disorders, health-related quality of life, linguistic validity

Abbreviations: GI, Gastrointestinal; HRQOL, Health-related quality of life.
1 | INTRODUCTION

Health professionals within paediatric health care meet children with gastrointestinal (GI) disorders in their clinical practice and provide them with treatment, advice and psychosocial support. It is important to discover whether their efforts have an impact on the child’s Health-Related Quality Of Life (HRQOL). HRQOL refers to the individual’s perception of the impact of the disease and its treatment on physical, social and psychological function and well-being and is becoming an increasingly important outcome measure in both clinical practice and research. HRQOL questionnaires can provide insights from a child’s perspective, reveal concealed problems and are important for a full understanding of the influence of a health condition on the child. While generic HRQOL instruments enable comparison of outcomes with general references, symptom-specific measures are more sensitive to clinically relevant questions. In Swedish language, PedsQL 4.0 and DISABKIDS are validated for assessment of generic HRQOL in children. Moreover, there are Swedish versions of disease-specific HRQOL instruments, which measure relevant outcomes for a specific condition, such as the IMPACT-III for children with Inflammatory Bowel Disease, HAQL for Hirschsprung disease/anorectal malformation and the EA-QOL questionnaires for children bornoesophageal atresia. Spiegel et al. describe PROMIS Gastrointestinal Symptom Scales, an excellent instrument in US English to be system target for GI symptoms overall rather than disease targeted, but it was validated for adults not children and it does not focus on HRQOL. The PedsQL Measurement Model, however, offers a modular approach, integrating both generic core scales (PedsQL 4.0) and symptom-specific modules for functional and organic diseases (PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module) into one measurement system. Moreover, the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module span the breadth and depth of GI symptoms and HRQOL for children 2–18 years old. As recommended by the Food and Drug administration, these instruments were developed in US English using experiences of children with GI diseases and of their parents for item generation and evaluation of validity and reliability.

PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module are a set of HRQOL questionnaires for paediatric patients with functional and organic GI disorders. These were developed in US English and are reliable, valid and useful for measuring HRQOL in children with different GI disorders. Using these instruments it has been established that, as a group, children with functional GI disorders have lower HRQOL than children with organic GI disorders, while for example children with duodenal atresia have similar HRQOL to healthy controls. Despite its potentially broad application to paediatric GI disorders, this module is currently not available in Swedish. HRQOL instruments need to be translated and evaluated for validity and reliability according to recommended standards. The aim of this study was therefore to establish the linguistic and content validity of the Swedish version of the PedsQL™ Gastrointestinal Symptoms Scales and Symptoms Module for children (5–18 years of age) and for the parents of children (2–18 years of age).

2 | MATERIAL AND METHODS

The study was approved by the national Swedish Ethical Review Board (2019–04634). The PedsQL™ Gastrointestinal Symptoms Scale (58 items) and PedsQL™ Gastrointestinal Symptoms Module (74 items) measure GI-related HRQOL in paediatric patients aged from 2 to 4 (parent report), 5 to 7 (separate child and parent reports), 8 to 12 (separate child and parent reports) and 13 to 18 (separate child and parent reports) with functional and organic GI disorders. The PedsQL™ Gastrointestinal Symptoms Scale measures the impact of symptoms from the upper and lower gastrointestinal tract in ten domains. The PedsQL™ Gastrointestinal Symptoms Module adds a further four HRQOL domains including worries, medicines and communication, giving a total of 14 domains (Table 1). Permission was obtained from Mapi Research Institute and instrument developer Dr. James W. Varni to translate and validate the questionnaires from US English into Swedish according to their study protocol.

2.1 Framework and Definitions

An evaluation of linguistic and content validity of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module, developed in US English, complies with international recommendations as to patient-reported outcome measurements. Foreign-language translations of the module shall provide conceptual equivalence, which refers to the absence of differences in meaning and content between the source language and the translated version. They must also prove content validity, that is evidence that the items and domains are appropriate and comprehensive relative to their intended measurement concept (e.g., HRQOL), population (e.g. paediatric patients with GI disorders) and use (e.g., research, follow-up).
2.2 | Step 1–4 Translation

2.2.1 | Step 1 Forward translation

A professional translation agency was consulted for the recruitment of two independent forward translators, who were native speakers of Swedish and bilingual in US English and with previous experience of translating medical questionnaires. The translators produced two independent Swedish versions of each age-specific and reporter-specific PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module.

2.2.2 | Step 2 Expert review and reconciliation

The two forward translations of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module underwent a reconciliation process conducted by the project committee, a multidisciplinary group of researchers, representing competencies in paediatric surgery, paediatric gastroenterology, paediatric nursing and enterostomal therapy. During discussions and consultations with translators and three paediatric enterostomal therapists when needed, the project committee reached consensus regarding which translations of the instructions, items and response scales were conceptually equivalent to the original questionnaire, and which were most clear and appropriate for the patient’s age. The first Swedish version of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module for children from 2 to 18 years of age was produced. A report of the process was written and sent to Mapi Research Institute and Dr. James W. Varni.

2.2.3 | Step 3 Backward translation

A backward translator from a professional translation agency, a native US English speaker and bilingual in Swedish, performed the backward translation of the reconciled version 1 of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module into US English. The backward translator had no access to the original US English version of the questionnaires.

2.2.4 | Step 4 Backward translation review

The project committee reviewed and compared the backward translated version with the original source and discussed any issues with the results with the backward translator. This was to detect and correct any misunderstandings, mistranslations or inaccuracies in version 1 of the questionnaires. This produced the second Swedish version of the instruments. A report of the process and results was written and sent to Mapi Research Institute and Dr. James W. Varni.

2.2.5 | Step 5 Cognitive debriefing interviews

Cognitive debriefing interviewing, which is a qualitative technique used to understand whether the target population understands the questionnaire in the way the instrument developer intended and to establish content validity, was used before creating the definitive Swedish version.

| Domains                     | Symptom Scale | Symptom Module | Number of Items |
|-----------------------------|---------------|----------------|-----------------|
| Stomach pain and hurt       | X             | X              | 6               |
| Stomach discomfort when eating | X             | X              | 5               |
| Food and drink limits       | X             | X              | 6               |
| Trouble swallowing          | X             | X              | 3               |
| Heartburn and reflux        | X             | X              | 4               |
| Nausea and vomiting         | X             | X              | 4               |
| Gas and bloating            | X             | X              | 7               |
| Constipation                | X             | X              | 14              |
| Blood in bowel movement     | X             | X              | 2               |
| Diarrhoea                   | X             | X              | 7               |
| Worry about bowel movements | X             |                 | 5               |
| Worry about stomach aches   | X             |                 | 2               |
| Medicines                   | X             |                 | 4               |
| Communication               | X             |                 | 5               |
| Total number of domains     | 10            | 14             |                 |

*Three-point response scale—‘not at all’, ‘sometimes’, ‘a lot’.

Five-point response scale—‘never’, ‘almost never’, ‘sometimes’, ‘often’, ‘almost always’.

**TABLE 1** PedsQL™ gastrointestinal symptoms module and symptom scales for ages 2 to 4°, 5 to 7°, 8 to 12° and 13 to 18° for children and their parents
Families of children aged from 2 to 18 years of age with functional and organic GI disorders were identified from the outpatient services for paediatric surgery, ostomy/bowel care and paediatric gastroenterology at Queen Silvia Children's Hospital, Sweden. As presented in Table 2, five children from each age group 5 to 7, 8 to 12 and 13 to 18 years old and five parents of children in each age group—2 to 4, 5 to 7, 8 to 12 and 13 to 18, were invited to participate in the study. The election of the study sample involved consensus between paediatric gastroenterologists, paediatric surgeons and paediatric nurses. Most important in this study phase was to ensure samples with the relevant symptom experiences to capture their perception of the questionnaire. Therefore, the GI diagnoses were chosen to give an even distribution of the GI tract symptoms, as presented in Table 2.

**Data collection**

The study participants were invited to the outpatient service at the study centre to participate in a cognitive debriefing with an independent researcher. Parents and children were encouraged by the researcher to complete separate questionnaires by themselves. Most of the cognitive debriefing was done with the children and parents separately. However, if children wanted, their parent could attend the cognitive interview with them in which case the parent was advised not to interfere with the child's responses. All participants were asked whether the instructions, response scale, domains and the whole questionnaire (overall evaluation) were clear and easy to understand. Each domain was separately and carefully analysed together with the respondent. The researcher used cognitive probes that would elicit comments from the respondent's perspective such as 'In your own words, how would you make them clearer or easier to understand?' 'Based on your experience of illness /your child's illness, which items are of importance to you/your child?' The transcription of the cognitive debriefing interviews was made verbatim by a research assistant.

**Data analysis and expert panel discussion**

The content of the transcribed interviews was analysed by the project committee. The number and proportion of respondents (n, %), in each age group and in total, who found the elements of the module clear and easy to understand, were analysed. These elements included instructions, response scale, domains and the questionnaire as a whole.

### 2.3 Step 6 Production of the final Swedish version

The final version was created based on Steps 1 to 5, after which a report was written to Mapi Research Institute and sent to Dr. James W. Varni for approval.

### 3 RESULTS

Translation and linguistic validation of PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module for children aged 2–18 with functional and organic GI disorders and their parents led to conceptually equivalent versions in the Swedish language.

#### 3.1 Step 1–4 Translation

#### 3.1.1 Step 1 Forward translation

In the forward translation of the of PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module, there were few semantical differences between the two Swedish versions produced by the two translators. The semantical differences regarded eight expressions in the five domains: 'Stomach pain and hurt', 'Constipation', 'Heartburn and reflux', 'Food and Drink Limits' and 'Communication'. Three expressions concerned all age-specific versions. The semantical differences led to careful discussion, Step 2.

---

**Table 2** Study population— the sample of patients and parents participating in cognitive debriefing

| Main symptoms | Hirschsprung’s disease | Obstruction | Ulcerative colitis | Oesophageal atresia | Crohn’s disease |
|---------------|------------------------|-------------|-------------------|-------------------|-----------------|
| Age group     | 2-4 years (parents)    | 2           | 2                 | 0                 | 1               |
|               | 5-7 years (parent and child) | 1           | 1                 | 0                 | 2               |
|               | 8-12 years (parent and child) | 1           | 0                 | 1                 | 2               |
|               | 13-18 years (parent and child) | 0           | 1                 | 1                 | 2               |
| Total number of participants | 4           | 4           | 2                 | 7                 | 3               |
3.1.2 | Step 2 Expert review and reconciliation

The project committee reached consensus on the most appropriate Swedish translation of all eight expressions. Most issues which needed discussion concerned which words the target group would use and questions were therefore adapted to child age. It was also taken into account whether the words were intended for the child version or the parent version of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module, as detailed in Table S1.

3.1.3 | Step 3 Backward translation

There were no semantical issues in the backward translation process regarding the questionnaire instructions or the response scales.

3.1.4 | Step 4 Backward translation review

One item, 'Gets stomach aches', was changed from the initial backward translation 'Gets stomach cramps' to 'Får magvärk'. For further details, see Table S2.

3.1.5 | Step 5 Cognitive debriefing interviews

Twenty out of the 21 families invited accepted the invitation to participate in the study and returned informed consent, giving a total number of 15 children and 20 parents. The cognitive debriefing interviews of children lasted a median 13.5 min (range 8–19) and for parents a median 14 min (range 3–27). The Swedish translations of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module were assessed as good by the respondents. More extensive discussions in the project committee were due mainly to comments provided in the qualitative interviews.

The questionnaire instructions, response scales and overall evaluation were perceived as clear and easy to understand by 93%–100% of children and parents. Eleven out of 14 domains were perceived as clear and easy to understand by 93%–100% of participants. Altogether, the cognitive debriefing interviews led to changes in the following three domains.

Domain: Stomach pain and hurt

Parents gave ten negative comments concerning the similarity of the items, especially items 1 to 3 (1—Feels pain or hurt in his/her stomach, 2—Gets stomach aches, 3—Stomach hurts). Children gave six negative comments on these questions. Following a review of the translators’ suggestions for items 1 to 3, another option for item 2 (‘Får magknip’ instead of ‘Får magvärk’) was chosen in order to create variation in items 1 to 3. Items 1 and 3 could not be changed since they were very similar to the original questionnaire.

Parents gave nine negative comments, and children gave eight negative comments on this domain. Five of the parents’ comments and four of the children’s comments concerned item number 4 (Stomach feels heavy when he/she eats). The translation ‘Magen kännas tung när han/hon äter’ was difficult to understand despite it being a correct translation, and both forward translators suggesting this translation. Following discussion in our project committee, we ended up with the translation ‘Magen kännas full och spänd när han/hon äter’.

Domain: Gas and bloating

Parents gave eleven, and children gave five negative comments regarding this domain. All the parents’ negative comments and two child comments said the items were very similar. Three children encountered difficulties understanding the word ‘gasig’, which is the translation of gassy/gas. The decision was made to change the translation of item 6 (6—’Stomach feels gassy’) ‘Magen kännas gasig’ and instead use, ‘Magen kännas uppbäst’. This gave a better variation of the items but did not change the semantics. Table 3.

3.1.6 | Step 6 Approval of the final Swedish version

The final version of the Swedish PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module for children aged between 2 and 18 with functional and organic GI disorders was created (child and parent reports), and a report was written to Mapi Research Institute and Dr. James W. Varni, who approved the work.

4 | DISCUSSION

In addition to mortality and morbidity, HRQOL has become increasingly important as an outcome measure used in clinical practice and in research involving children.2 This study reports the linguistic and content validity of the Swedish version of PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module, which are symptom-specific HRQOL instruments for children with functional and organic GI disorders, originally developed and validated in US English.8,10 The process, which complies with a study protocol from MAPI Research Trust, makes these instruments available for use in academic research on populations of Swedish children with GI disorders.9

All translations of the questionnaire and evaluations for validity and reliability in a new language must be of very high quality.17 In children, there may be differences between countries and cultures in regard to healthcare systems, the amount of information given to children about the disease, children’s reading ages and different social activities that may impact on the understanding of a HRQOL questionnaire.15 According to international standards, there are different types of validity. The first types of validity that need to be established in this process relate to linguistics and content validity,18 which ensure that the questionnaire’s instructions, questions and response scales are properly understood by the target population.
In this study, the use of evaluated instructions and professional medical translators provided the process with a sound basis.

So far, the instrument has been translated into, and validated in, four different languages: Italian, Dutch, Portuguese and Spanish. The instrument has established that children with inflammatory bowel disease have greater symptoms and worry compared to healthy controls and that children with functional dyspepsia have improved HRQOL when treated with gastric electric stimulation. The instrument is shown valid and applicable to children with cystic fibrosis. All the participants were recruited from the same centre, but the interviews were performed by an independent researcher. In summary, this is the first of two studies on the evaluation of the validity and reliability of the Swedish version of the PedsQL™ Gastrointestinal Symptoms Scale and Symptoms Module. This study has enabled future research into the instrument(s), but they preferably require further evaluation of validity and reliability with a larger sample of different conditions of the GI tract.

**TABLE 3** Results from cognitive debriefing of the PedsQL™ Gastrointestinal Symptoms Module and Symptom Scales

| Domains                        | % of respondent perceiving the item and domain as clear | Qualitative data                                                                 | Local project committee |
|-------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------|
|                               | Children 5–18 years | Parents of children 2–18 years | Type difficulties encountered | Discussion about possible change | Changes made |
| Stomach pain and hurt         | 93             | 100                   | Similarity of items             | Yes                      | Yes         |
| Stomach discomfort when eating | 93             | 100                   | Unclear wording of question ‘Stomach feels heavy when he/she eats’             | Yes                      | Yes         |
| Food and drink limits         | 93             | 100                   | Questions contained negations and were therefore difficult to understand         | Yes                      | No          |
| Trouble swallowing            | 100            | 100                   |                                                                                 |                         |             |
| Heartburn and reflux          | 87             | 100                   | Some children had difficulties in understanding ‘heartburn’ but after discussion we found out that those were the children that had diseases without this symptom. | Yes                      | No          |
| Nausea and vomiting           | 100            | 100                   |                                                                                 |                         |             |
| Gas and bloating              | 93             | 100                   | Similarity of items             | Yes                      | Yes         |
| Constipation                  | 100            | 100                   |                                                                                 |                         |             |
| Blood in bowel movement       | 100            | 100                   |                                                                                 |                         |             |
| Diarrhoea                     | 100            | 100                   |                                                                                 |                         |             |
| Worry about bowel movements   | 100            | 100                   |                                                                                 |                         |             |
| Worry about stomach aches     | 100            | 100                   |                                                                                 |                         |             |
| Medicines                     | 100            | 100                   | For those that do not use medicines these items were not relevant                | Yes                      | No          |
| Communication                 | 93             | 100                   | Many children with constipation do not consider themselves as having an illness and therefore the domain might not be considered relevant for them | Yes                      | No          |
|                              | Total 7        | Total 3               |                                                                                 |                         |             |
ACKNOWLEDGEMENTS
We wish to thank Ms Louise Dellenmark-Blom for transcribing the cognitive interviews and our paediatric enterostomal therapists for good advice in the translation process. The study was financed by grants from the Swedish state under the agreement between the Swedish government and the county councils, the ALF-agreement.

CONFLICT OF INTEREST
The authors declare no conflict of interest.

ORCID
Matilda Bräutigam https://orcid.org/0000-0002-1136-9300

REFERENCES
1. Testa MA, Simonson DC. Assessment of quality-of-life outcomes. N Engl J Med. 1996;334(13):835-840.
2. Haverman L, Limperg PF, Young NL, Grootenhuis MA, Klaassen RJ. Paediatric health-related quality of life: what is it and why should we measure it? Arch Dis Child. 2017;102(5):393-400.
3. Petersen S, Hagglof B, Stenlund H, Bergstrom E. Psychometric properties of the Swedish PedsQL. Acta Paediatr. (Oslo, Norway: 1992) 2009;98(9):1504-1512.
4. Simeoni MC, Schmidt S, Muehlan H, Debensason D, Bullinger M. Field testing of a European quality of life instrument for children and adolescents with chronic conditions: the 37-item DISABKIDS Chronic Generic Module. Qual Life Res. 2007;16(5):881-893.
5. Wigander H, Frenckner B, Wester T, Nisell M, Öjmyr- Joelsson M. Translation and cultural adaptation of the Hirschsprung's Disease/ Anorectal Malformation Quality of life Questionnaire (HAQL) into Swedish. Pediatr Surg Int. 2014;30(4):401-406.
6. Dellenmark-Blom M, Dingemann J, Witt S, et al. The esophageal atresia-quality-of-life questionnaires: feasibility, validity and reliability in Sweden and Germany. J Pediatr Gastroenterol Nutr. 2018;67(4):469-477.
7. Spiegel BM, Hays RD, Bolus R, et al. Development of the NIH Patient-Reported Outcomes Measurement Information System (PROMIS) gastrointestinal symptom scales. Am J Gastroenterol. 2014;109(11):1804-1814.
8. Varni JW, Bendo CB, Denham J, et al. PedsQL gastrointestinal symptoms module: feasibility, reliability, and validity. J Pediatr Gastroenterol Nutr. 2014;59(3):347-355.
9. Varni JW, Bendo CB, Shulman RJ, et al. Interpretability of the PedsQL gastrointestinal symptoms scales and gastrointestinal worry scales in pediatric patients with functional and organic gastrointestinal diseases. J Pediatr Psychol. 2015;40(6):591-601.
10. Varni JW, Kay MT, Limbers CA, Franciosi JP, Pohl JF. PedsQL gastrointestinal symptoms module item development: qualitative methods. J Pediatr Gastroenterol Nutr. 2012;54(5):664-671.
11. Guidance for industry: Patient-reported outcome measures: use in medical product development to support labeling claims: draft guidance. Health Qual Life Outcomes. 2006;4:79.
12. Varni JW, Bendo CB, Nurko S, et al. Health-related quality of life in pediatric patients with functional and organic gastrointestinal diseases. J Pediatr. 2015;166(1):85-90.
13. Vinycomb T, Browning A, Jones MLM, Hutson JM, King SK, Teague WJ. Quality of life outcomes in children born with duodenal atresia. J Pediatr Surg. 2020;55(10):2111-2114.
14. Mapi Research Institute. Linguistic validation of the PedsQL: a quality of life questionnaire: research and evaluation, limited use translation of PedsQL. Lyon, France. 2002.
15. Matza LS, Patrick DL, Riley AW, et al. Pediatric patient-reported outcome instruments for research to support medical product labeling: report of the ISPOR PRO good research practices for the assessment of children and adolescents task force. Value Health. 2013;16(4):461-479.
16. DeMuro CJ, Lewis SA, DiBenedetti DB, Price MA, Fehnel SE. Successful implementation of cognitive interviews in special populations. Expert Rev Pharmacoeconom Outcomes Res. 2012;12(2):181-187.
17. Wild D, Grove A, Martin M, et al. Principles of good practice for the translation and cultural adaptation process for Patient-Reported Outcomes (PRO) measures: report of the ISPOR task force for translation and cultural adaptation. Value Health. 2005;8(2):94-104.
18. Patrick DL, Burke LB, Gwaltney CJ, et al. Content validity–establishing and reporting the evidence in newly developed patient-reported outcomes (PRO) instruments for medical product evaluation: ISPOR PRO good research practices task force report: part 1–eliciting concepts for a new PRO instrument. Value Health. 2011;14(8):967-977.
19. eProvide. Pediatric Quality of Life Inventory™ (PedsQL™). 2021.
20. Varni JW, Franciosi JP, Shulman RJ, et al. PedsQL gastrointestinal symptoms scales and gastrointestinal worry scales in pediatric patients with inflammatory bowel disease in comparison with healthy controls. Inflamm Bowel Dis. 2015;21(5):1115-1124.
21. Lu PL, Teich S, Di Lorenzo C, Skaggs B, Alhaji M, Mousa HM. Improvement of quality of life and symptoms after gastric electrical stimulation in children with functional dyspepsia. Neurogastroenterol Motil. 2013;25(7):e456.
22. Boon M, Claes I, Havermans T, et al. Assessing gastro-intestinal related quality of life in cystic fibrosis: validation of PedsQL GI in children and their parents. PLoS One. 2019;14(12):e0225004.

SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Bräutigam M, Dellenmark-Blom M, Gatzinsky V, Bergström J, Abrahamsson K. Linguistic and content validity of the Swedish version of the PedsQL™ gastrointestinal symptoms scales and symptoms module for paediatric patients. Acta Paediatr. 2021;110:3124–3130. https://doi.org/10.1111/apa.16066