Indian Journal of Orthopaedics (2025) 59:1420–1426
https://doi.org/10.1007/s43465-025-01443-0

ORIGINAL ARTICLE

# Hindi Translation and Cultural Adaptation of LIMB-Q Kids: A new patient-reported Outcome Measure for Children with Lower Limb Differences

**Harpreet Chhina[1,2] · Ashish S. Ranade[3] · Prajakta Inglikar[3] · Aditya Aggarwal[4] · Anthony Cooper[1,2]**

Received: 9 January 2025 / Accepted: 31 May 2025 / Published online: 20 June 2025


## Abstract

**Background** LIMB-Q Kids is a new patient-reported outcome measure (PROM) for children with lower limb differences (LLDs). It has been developed with input from patients and healthcare professionals globally, including high-, low-, and lower-middle-income countries. This study aimed to translate and culturally adapt (TCA) LIMB-Q Kids into Hindi.

**Methods** The English version was translated independently into Hindi by two translators, reconciled, and back-translated into English by a third translator. This back-translated English version was compared with the original English version by the developers of LIMB-Q Kids, and revisions were made to prepare the Hindi version for cognitive debriefing interviews (CDIs). Children aged 8–18 years with LLDs were recruited from two centers in India for CDIs. Feedback from the CDIs, consultations with clinicians from India, and input from the LIMB-Q Kids developers guided final edits.

**Results** The TCA process ensured conceptual equivalency with the original version, cultural relevance, gender neutrality (where possible), and comprehension by children aged 8–18 years. Ten CDIs were conducted, revealing that 12.6% of items were challenging for some children. The remaining 87.4% of items were understood, requiring no further changes.

**Conclusion** The rigorous TCA process ensured that the Hindi version of LIMB-Q Kids is culturally appropriate and conceptually equivalent to the original version. Hindi version has strong potential as a clinical tool to assess the impact of lower limb differences on children's quality of life in Hindi-speaking populations.

**Keywords** Health-related quality of life · Patient-reported outcome measure · Lower limb deformities · Lower limb differences · Translation · Cultural adaptation · LIMB-Q Kids · Children · Adolescents

## Background

Patient-reported outcomes (PROs) are reports that come directly from the patient about the status of their health condition without amendment or interpretation of their response by a clinician or anyone else [1]. Commonly used PROs in health care include pain, functional health outcomes, and health-related quality of life (HRQL) outcomes. The instruments used to measure PROs are called patient-reported outcome measures (PROMs).

At the individual level, PROs can be used as screening tools for depression or anxiety, physical, social, and emotional functioning [2, 3]. PROs can also be used to monitor changes in outcomes (physical, social, emotional, etc.) over

✉ Harpreet Chhina
hchhina@cw.bc.ca

Ashish S. Ranade
ranadea2@gmail.com

Prajakta Inglikar
ingprajakta@gmail.com

Aditya Aggarwal
adityadocpgi@gmail.com

Anthony Cooper
anthony.cooper@cw.bc.ca

[1] Department of Orthopaedics, University of British Columbia, Vancouver, Canada

[2] Department of Orthopaedics, BC Children's Hospital, 4480 Oak Street, Vancouver, BC V6H 3V4, Canada

[3] Blooming Buds Centre for Pediatric Orthopaedics, Deenanath Mangeshkar Hospital, Pune, India

[4] Department of Orthopaedic Surgery, Postgraduate Institute of Medical Education & Research (PGIMER), Sector 12, Chandigarh, India

time or before or after a treatment. PROs such as HRQL can be used to facilitate discussions around patient priorities for their treatment. Such discussions can encourage patients to be more compliant with the treatment and increase patient's satisfaction with their care [4]. Routine use of PROs in clinical practice can help detect problems which may otherwise remain undetected such as psychological health concerns. At a group level, PRO data can be used to facilitate decision-making by patients when it involves weighing up risks and benefits, sometimes between survival and HRQL [5]. HRQL data from randomized controlled trials comparing treatments can serve as a valuable decision aid.

An individual's perception of their well-being and health is influenced by social and cultural factors. Hence, it is important to consider social, cultural, educational, and economic backgrounds of the individuals during the development of PROMs [6]. To keep the assessment of PROs equitable and inclusive, there should be adequate representation from underserved groups who are often under-represented in research and often receive sub-optimal care [7].

An important barrier to PRO data collection in underserved populations is the lack of relevance of PROs to the patient population and no to minimal involvement of the target patient population during the development of PROM [7]. While it is well-known that standardized outcome measures are crucial to evidence-based practice, but their implementation is still a challenge in low- and middle-income countries [8].

In India, health care decision-making often focuses predominantly on targeted laboratory values and preventable hospitalizations, with limited emphasis on patient-centered, subjective measures [9]. Generally, treatment decisions tend to prioritize laboratory results and the physician's judgment rooted in their experience and available resources over the patient's personal assessment of their well-being following treatment. As a result, patient preferences are frequently overlooked. Patient-centered outcomes research and integration of patient-reported outcomes (PROs) remain in their nascent stages within the Indian health care system.

A survey was conducted in 2022 to assess the use of PROs in routine clinical care and the impact of PRO implementation in India [10]. 85% of the clinicians were aware of the term PROs while only 55% have used PROs in their clinical practice. The highest-voted PRO used in clinical care was HRQL (45%), followed by functional status (20%) and treatment satisfaction (20%).

One of the key challenges in developing PROMs tailored to the Indian population is the country's linguistic diversity. India is home to 22 officially recognized languages, 13 unique scripts, and over 720 dialects, making the translation and cultural adaptation of PROMs a complex and resource-intensive process. A practical starting point could involve translating PROMs into Hindi, the most widely spoken and one of the official languages of India. This approach could serve as a foundation for subsequent regional adaptations while addressing the needs of a significant portion of the population [6].

LIMB-Q Kids is a new PROM for children and adolescents with lower limb differences (LLDs) which has been developed by following the international guidelines for PROM development [11–14]. Development of LIMB-Q Kids involved an international qualitative study involving interviews with children with LLDs and their parents from Canada, Ethiopia, India, and the USA [15]. This was followed by an international content validation study involving collecting feedback from children, and a wide range of health care professionals from Australia, Canada, India, Ethiopia, the UK, and the USA [16]. LIMB-Q Kids has been translated and culturally adapted for use in Danish and German languages and multiple other translations are in progress [17, 18].

The purpose of this study was to perform translation and cultural adaptation (TCA) of LIMB-Q Kids into Hindi. The version of LIMB-Q Kids used for translation into Hindi consisted of 10 independently functioning scales measuring Physical function, symptoms (leg, hip, knee, foot, and ankle), appearance, leg-related distress, school, social function, and psychological function.

## Methods

Ethics approval was obtained from the local institutional ethics boards at the two participating centers in India. Informed consent was obtained from the parents and assent was obtained from children as per the local institutional guidelines. Children between the ages of 8 and 18 years with a confirmed diagnosis of lower limb deformity were recruited for this study. Children who had medical conditions that impacted their ability to read and write Hindi independently were excluded.

We rigorously followed the guidelines for TCA as recommended by the Professional Society for Health Economics and Outcomes Research (ISPOR) in order to obtain a version of LIMB-Q Kids that is linguistically equivalent and culturally relevant to the target patient population [19, 20]. Steps involved in the TCA process are described below (Fig. 1):

- Forward translation: Two independent translators translated English version of LIMB-Q Kids into Hindi. These translators were clinicians trained in India, had Hindi as their mother tongue, and were fluent in English.
- Reconciliation: Two forward translators met and discussed their translations and produced a reconciled Hindi version of LIMB-Q Kids.

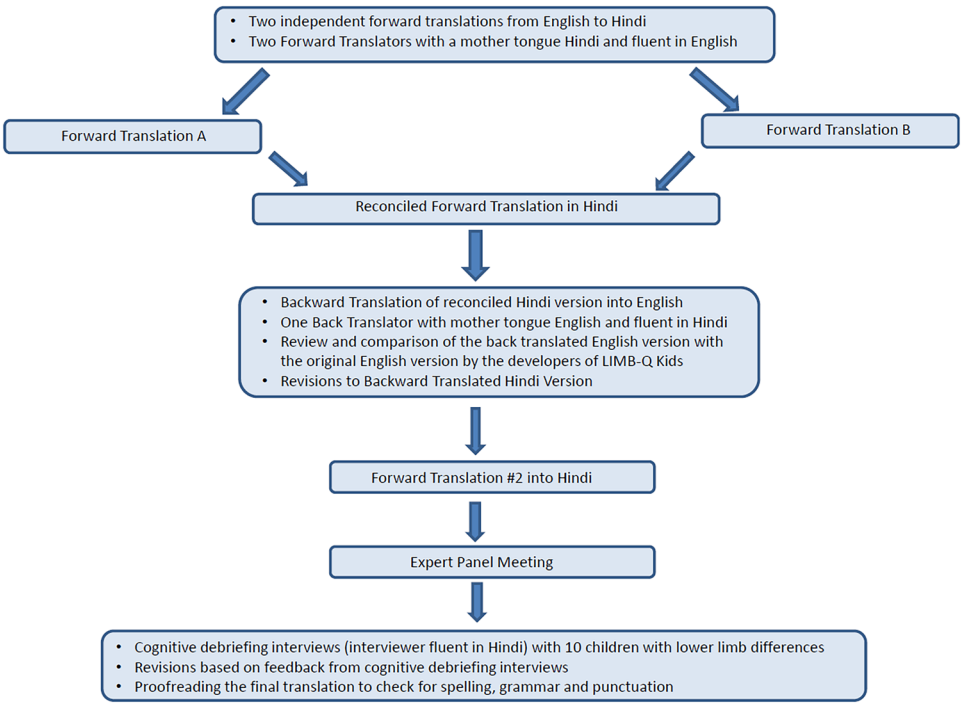



**Fig. 1** Translation and cultural adaptation of LIMB-Q Kids into Hindi

- Backward translation: This reconciled Hindi version was translated back into English by a third independent translator. This translator was fluent in both English and Hindi. They had not seen the original English version of LIMB-Q Kids.
- Comparison with original Version: This back-translated version of LIMB-Q Kids was sent to the developers of LIMB-Q Kids (HC) who compared it with the original English version. Discrepancies were discussed with the translators. Changes were made to the Hindi version as needed and a Hindi version was ready to be used in the next steps. During all the translations, it was ensured that the translations were suitable for the lowest possible reading level in Hindi for children between the ages of 8 and 18 years.
- Expert Panel Review: An expert panel consisting of an orthopaedic surgeon and orthopaedic trainee from India whose mother tongue was Hindi and fluent in English, and developer of LIMB-Q Kids (HC) fluent in Hindi and English reviewed the Hindi version. All items were carefully reviewed for accuracy of translations and to ensure that the translations were appropriate for children between the ages of 8 and 18 years.
- Cognitive debriefing interviews (CDIs): CDIs were conducted at two centers in India. All CDIs at one center were conducted by a local physiotherapist (PI) who has expertise in working with children with orthopaedic conditions and could speak Hindi fluently. The interviews at the other center were performed by the developer of LIMB-Q Kids (HC) who is fluent in Hindi. Training for CDIs was provided by the developers of LIMB-Q Kids (HC) to ensure that a consistent methodology is used in all CDIs. LIMB-Q Kids has been translated into Danish and German languages following the same approach [17, 18]. All CDIs were conducted face-to-face in-person at the participating hospitals in India. All interviews were conducted in Hindi and were recorded for analysis.

CDI process followed the approach suggested by Willis [21, 22]. A semi-structured interview guide was followed. A 'Think Aloud' protocol along with verbal probing was used [21]. Children were asked to read each instruction, item, and response option out loud. If there was any hesitation while reading, probing was done such as asking the participant to reformulate an item or to define that term in their own words. During the interviews, children were asked to comment on the ease of completion of LIMB-Q Kids, and their understanding of instructions, items, and response options. They were also asked to explain why they chose a specific response option. This allowed us to examine a participant's understanding of each item and their interpretation of the instructions and response options. If participants identified certain items or words as difficult to understand, or the interviewer noted any hesitation from the children while they were reading a specific word or item, they were asked to suggest alternate words. Edits were made based on the CDIs and consultation with the clinical team from Pune and developers of LIMB-Q Kids.

- Final Proof Reading: Final Hindi version was proofread by the clinical team from Pune and developers of LIMB-Q Kids.

## Results

- Forward Translation and Reconciliation: Two forward translators met and discussed any discrepancies between their translations. There were minor discrepancies in 23 out of 159 items primarily due to different ways of phrasing the translated items. These discrepancies were resolved to produce one forward translation.
- Backward Translation Review: The comparison of the back-translated English version and the original English version highlighted 7 out of 159 items and response options for the Appearance scale and Scar-related item. These included items 8 for the Hip symptoms scale, items 9, and 10 for the knee symptom scale, item 6 for the Ankle symptoms scale, item 12 for the Leg-Related distress scale, Item 4, 12 for the School scale. These highlighted items were reviewed for the accuracy of Hindi translations. For items 8 for the Hip symptoms scale, 9 and 10 for the knee symptom scale, and 6 for the Ankle symptoms scale, the back-translated item in English was not grammatically correct. Hindi translations for these items were found to be grammatically correct. Hence no changes were made. Response options for the Appearance scale and Scar item were corrected.
- Expert Panel Review and Edits: The reconciled Hindi version along with the items under consideration for edits from the back translation review was discussed in an expert panel. In the instructions section, the Hindi word used for 'week' was replaced with a more commonly used word instead.

  A major point of discussion during this expert panel was to make items and response options gender-neutral to avoid having slightly different versions of items for boys and girls. 31 out of 159 items had been translated into Hindi with a male-gender-appropriate grammatical structure. This included items 5, 6 for the Leg Symptom scale items, items 1, 5, 7 for the Hip Symptom Scale, items 1, 6, 7, 8 for the Knee Symptom Scale, item 5 for the Ankle Symptom Scale, item 1,5 for the Foot Symptom Scale, items 1,2, 6–10 and 12–14 for the Leg-Related Distress Scale, items 7, 9 for the School Scale, items 2, 10 for the Social Function Scale and items 2, 4, 6, 7, 9, 10 for the Psychological Function Scale. All 31 items listed above were modified to either make them gender-neutral or provide options for both boys and girls. Response options (I cannot do this and I can do this) for the Physical Function Scale were translated into Hindi for both boys and girls. Eighteen out of these 31 items were edited to make them gender-neutral. The remaining 13 items were edited to provide options for both girls and boys.

  Additionally, Hindi translations for certain words were also identified as potentially difficult words for children. These included Hindi words for toilet, cross-legged, tingly (pins and needles), click or pop, not able to move it, wobbly (going to give out), and teased. At this time, the orthopaedic surgeon and the orthopaedic trainee on the expert panel consulted with their other orthopaedic colleagues in India to find suitable and easy Hindi words that can be used instead. No alternate words were found for toilet, cross-legged, tingly (pins and needles) and wobbly. Hence, the existing translations were retained.

  Hindi translations for words 'hip' and 'ankle' were also identified to be potentially difficult for children to understand as English words for 'hip' and 'ankle' are being used more commonly. To resolve this issue, the developers of LIMB-Q Kids produced labeled pictures of the legs with specific labeling to highlight the parts of the leg that the scale was referring to. For example, the image used for the Hip symptom scale had a label and an arrow pointing toward the Hip (images provided in the supplement).

  Some words, such as 'click or pop' and 'not being able to move it', were removed from the translation as the Hindi translations for these words were considered potentially challenging for children.

  Following these edits, the Hindi version of LIMB-Q Kids was ready to be used for CDIs.
- Cognitive Debriefing Interviews (CDIs): Ten CDIs were conducted in total. Demographic characteristics of interview participants are presented in Table 1. Details of edits made based on the CDIs are presented in Supplementary Table 1. Overall, there were only 12.6% of items that were either found difficult by some interviewed children or they had asked for some explanation for those items. The remaining 87.4% of the items were understood by the children during the CDIs and there were no further changes made to these items.

## Discussion

Our team translated, and culturally adapted LIMB-Q Kids into Hindi before the Hindi version could be used for the international field-test study. Following a valid and scientifically sound methodology for TCA is important to achieve conceptual equivalence and culturally relevant versions of items, instructions, and response options [19].

During the translation process, we encountered challenges due to the complexity of the Hindi language. Hindi, like many languages derived from Sanskrit, has an inherently gendered grammatical structure [23]. Words, verbs,

**Table 1** Characteristics of interview participants

| ID | Age at interview (years) | Sex (M/F) | Diagnosis | Type of treatment | Stage of treatment at the time of the interview |
|---|---|---|---|---|---|
| 1 | 11 | F | Ollier disease with left proximal fibula enchondroma, left ankle valgus with left leg and lateral malleolus shortening | Left distal tibial complex osteotomy and plating | Pre-surgery |
| 2 | 16 | F | Bilateral genu valgus and adolescent idiopathic scoliosis | Bilateral growth modulation (8 plate) | 6 Months from treatment |
| 3 | 14 | F | Bilateral genu valgus | Right distal femoral osteotomy, plate fixation | Post-surgery |
| 4 | 12 | M | Multiple osteochondromatosis with bilateral genu valgus | Observation | N/A |
| 5 | 11 | F | Right Fibular Hemimelia and right Genu Valgus with Limb Length Discrepancy | Shoe lift | shoe lift |
| 6 | 9 | M | Right recurrent club foot with equinus, cavus and adductus deformity | Osteotomy, deformity correction with external fixator and soft tissue release | Post-surgery |
| 7 | 9 | F | Osteogenesis Imperfecta | Multi-level osteotomies and intramedullary rodding | Right femur & tibia multi-level osteotomy & link rod insertion |
| 8 | 14 | M | Bilateral Slipped capital femoral epiphysis | Surgery | 3 Days post surgery |
| 9 | 14 | F | Right genu valgus and tuberculosis | Information not available | No active treatment at the time of interview |
| 10 | 11 | F | Post-septic deformity | Surgery | In frame at the time of interview |

and adjectives often change based on the gender of the subject or object being referred to. Unlike languages such as English, which has "they" as a neutral pronoun, Hindi lacks a commonly accepted gender-neutral pronoun. While some attempts have been made to introduce gender-neutral terms, these are not widely adopted and may be confusing in traditional contexts. Languages evolve with the cultures they belong to. In Hindi-speaking regions, gender has historically been a central concept in both language and culture. This makes gender-neutral adaptations less common or less intuitive for speakers. However, gender-neutral language in Hindi is now becoming common in India but is still not universally understood or accepted. When translating into Hindi, achieving neutrality often requires restructuring sentences or choosing words that don't specify gender something that can make translations feel unnatural and cumbersome and may change the tone and directness of the original sentence. Our team spent a lot of time discussing this issue during the expert panel meeting and ensuring that we tried our best to make the items gender-neutral when possible. However, there were 18 items and 1 response option (Response options for Physical Function Scale) where making them gender-neutral was not possible and hence we included both boy and girl-appropriate words, verbs, and adjectives as options within the same item. We were able to provide gender-neutral translations for 13 items.

Additionally, there has been a modernization of languages in India influenced by technological advances, Bollywood, various media platforms, social media, globalization, educational reforms, and government policies. These modernization efforts though crucial often focus on dominant or newer languages. Modernization of languages has also led to the integration of other more common languages or words from languages such as English into day-to-day lives of people living in India [24]. This was seen during the interviews when children from India who have Hindi as their mother tongue found certain Hindi words difficult to understand as they have been using English more often. This could be due to several factors, such as lack of conceptually equivalent words in Hindi, academic background of families, and social desirability to use English more often.

## Conclusion

TCA processes demonstrated the transferability of the LIMB-Q Kids into Hindi. These processes ensured semantic, idiomatic, experiential, and conceptual equivalence across items, instructions, and response options. The methods outlined for translating and culturally adapting the LIMB-Q Kids can be used to evaluate the quality and validity of translations and guide future translations of the LIMB-Q Kids

and other PROMs. LIMB-Q Kids is now available for use in clinical practice and research.

## Implications and Future Research

The Hindi version of LIMB-Q Kids holds significant potential as a clinical tool to assess the impact of lower limb differences on the overall quality of life of children and adolescents. Limb differences are typically considered as cosmetic deformities in India and their effect on social and psychological well-being is generally not taken into consideration. Looking beyond the physical deformity itself and its impact on physical function only, LIMB-Q Kids can provide a standardized way to assess the social and psychological well-being of children with lower limb differences.

LIMB-Q Kids can also aid in evaluating the effectiveness of various treatment options based on patient-reported outcomes, enabling clinicians and families to make well-informed decisions and select interventions that provide optimal results. This is especially important in resource-limited settings, where the judicious allocation of available resources is vital. Although improving the quality of life in low- and middle-income countries may seem challenging due to the widespread lack of access to basic health care in those countries, the use of PROMs like LIMB-Q Kids can play a critical role in raising awareness, fostering dialog, and addressing essential patient concerns, including appearance-related concerns, emotional and psychological well-being, that might otherwise remain overlooked. Future work needs to be done to translate LIMB-Q Kids into other languages to facilitate its use in non-Hindi-speaking populations in India.

**Supplementary Information** The online version contains supplementary material available at https://doi.org/10.1007/s43465-025-01443-0.

**Acknowledgements** Dr. Anne Klassen and the Q-Portfolio (https://qportfolio.org/) team for sharing their experience and expertise for the translation process.

**Author Contributions** Country where work was performed: The translation process was done in India in collaboration with the developers of LIMB-Q Kids in Canada. All interviews were conducted in India. Analysis was done by investigators from India in collaboration with the developers of LIMB-Q Kids in Canada.

**Funding** Hindi translation and cultural adaptation was funded by the Canadian Institute of Health Research Project Grant. Development of LIMB-Q Kids was funded by the Department of Orthopaedics, University of British Columbia, BC Children's Hospital Foundation, the Canadian Orthopaedic Foundation, and the Canadian Institute of Health Research Project Grant. Anthony Cooper is a co-PI on a research study funded by OrthoPediatrics. He is a consultant and invited educational speaker for OrthoPediatrics. He is a medical advisor for the BCCH digital lab. Dr. Cooper is also the course director for the Canadian Orthopaedic Trauma Couse which receives sponsorship from OrthoPediatrics and Depuy Synthes. Grants have also been received from the following: POSNA Registry Grant June 1, 2022-May 31, 2025, Canadian Orthopaedic Research Legacy (CORL) Grant 05/2022-05/2024, BC Children's Hospital Foundation 03/2021-03/2026, CFRI Investigator Grant Award Program (IGAP) 2016 -2026 and Investigator initiated research study (POISE), Orthopediatrics.

**Data availability** Data requests can be made to the corresponding author.

## Declarations

**Conflict of interest** McMaster University and the University of British Columbia hold the copyright of LIMB-Q Kids and its translations. Drs. Chhina, Cooper and Klassen are co-developers of LIMB-Q Kids and may receive a share of any license revenue associated with its use by 'for-profit' organizations.

**Ethical Approval** Ethics approval was obtained from the local institutional ethics board at the Deenanath Mangeshkar Hospital and Research Center Institute, Pune, India, and the Post-graduate Institute of Medical Education and Research, Chandigarh, India.

**Informed Consent** Informed consent was obtained from the participants as per the local institutional guidlines.

## References

1. U.S Food and Drug Administration. U.S Department of Health and Human Services Food and Drug Administration Guidance for Industry: Patient-Reported Outcome Measures: Use in Medical Product Development to Support Labeling Claims. Vol. 2014. 2009. Retrieved February 19, 2016, from http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM193282.pdf
2. Rubenstein, L. V., McCoy, J. M., Cope, D. W., Barrett, P. A., Hirsch, S. H., Messer, K. S., et al. (1995). Improving patient quality of life with feedback to physicians about functional status. *Journal of General Internal Medicine, 10*, 1. https://doi.org/10.1007/BF02602744
3. Mazonson, P. D., Mathias, S. D., Fifer, S. K., Buesching, D. P., Malek, P., & Patrick, D. L. (1996). The mental health patient profile: Does it change primary care physicians' practice patterns? *Journal-American Board of Family Practice, 9*, 336–345.
4. Stimson, G. V. (1974). Obeying doctor's orders: A view from the other side. *Social Science and Medicine, 8*(2), 97–104.
5. Connor, A. M. (2007). Using decision aids to help patients navigate the "grey zone" of medical decision-making. *Canadian Medical Association Journal, 176*(11), 1597–1598.
6. Dang, A., Kanukula, R., Shah, C., & Shetye, V. (2017). The emerging role of patient-reported outcomes (PROs) in clinical trials: An Indian perspective. *Value Heal Reg Issues, 12*(6), 24–26. https://doi.org/10.1016/j.vhri.2016.05.002
7. Calvert, M. J., Cruz Rivera, S., Retzer, A., Hughes, S. E., Campbell, L., Molony-Oates, B., et al. (2022). Patient reported outcome assessment must be inclusive and equitable. *Nature Medicine, 28*(6), 1120–1124. https://doi.org/10.1038/s41591-022-01781-8
8. Pathak, A., Abbott, J. H., Bajracharya, N., Gurung, G., Nepal, G. M., & Sharma, S. (2023). Barriers and facilitators to implementation of outcome measures among physiotherapists in Nepal: A mixed-methods study. *Musculoskeletal Science & Practice, 68*(June), 102859. https://doi.org/10.1016/j.msksp.2023.102859
9. Dang, A., & Vallish, B. (2015). The emerging role of patient-centered outcomes research in shaping the future of healthcare

delivery in India: A brief review. *International Journal of Medicine and Public Health, 5*(2), 125.
10. Lal, P., Patel, D., Khambholja, K., & Marulkar, S. (2022). Use of patient-reported outcomes (PROs) and its implementation in clinical care in India: A clinician's perspective. *Value Heal, 25*(12), S51. https://doi.org/10.1016/j.jval.2022.09.247
11. Chhina, H., Klassen, A., Kopec, J. A. (2016). CA. Development of a patient-reported outcome instrument to measure quality of life of children with lower limb deformities: Preliminary results. Quality of Life Research 25(138).
12. Chhina, H., Klassen, A., Kopec, J. A., Oliffe, J., & Cooper, A. (2019). International multiphase mixed methods study protocol to develop a patient-reported outcome instrument for children and adolescents with lower limb deformities. *British Medical Journal Open, 9*(5), 1–8.
13. Chhina, H., Klassen, A., Kopec, J., & Oliffe, J. (2019). What matters to children with lower limb deformities; an international qualitative study informing the development of LIMB-Q Kids. *Quality of Life Research, 5*, 1–2.
14. Chhina, H., Klassen, A., Kopec, J., Oliffe, J., Cooper, A. (2021). Establishing the content validity of LIMB-Q Kids: A new patient-reported outcome measure for children with lower limb deformities [Abstract]. In: *Proceedings of ISOQOL annual meeting 2021. Quality of Life Research, 30*(1), 1–177.
15. Chhina, H., Klassen, A. F., Kopec, J. A., Oliffe, J., Iobst, C., Dahan-Oliel, N., et al. (2021). What matters to children with lower limb deformities: an international qualitative study guiding the development of a new patient-reported outcome measure. *Journal of Patient-Reported Outcomes, 5*(1), 1–2.
16. Chhina, H., Klassen, A., Bade, D., Kopec, J., & Cooper, A. (2022). Establishing content validity of LIMB-Q Kids: A new patient-reported outcome measure for lower limb deformities. *Quality of Life Research, 31*(9), 2805–2818.
17. Vogt, B., Fresen, J., Gosheger, G., Chhina, H., Brune, C. S., Toporowski, G., et al. (2022). LIMB-Q kids-German translation and cultural adaptation. *Children, 9*(9), 1405.
18. Jønsson, C. E., Poulsen, L., Rölfing, J. D., Chhina, H., Cooper, A., & Sørensen, J. A. (2023). Danish linguistic validation and cultural adaptation of the LIMB-Q kids. *Children, 10*(7), 1–10.
19. Wild, D., Grove, A., Martin, M., Eremenco, S., McElroy, S., Verjee-Lorenz, A., et al. (2005). Principles of good practice for the translation and cultural adaptation process for patient-reported outcomes (PRO) measures: Report of the ISPOR task force for translating adaptation. *Value Health, 2*(2), 94–104.
20. Wild, D., Eremenco, S., Mear, I., Martin, M., Houchin, C., Gawlicki, M., et al. (2009). Multinational trials-recommendations on the translations required, approaches to using the same language in different c. *Value Health, 12*(4), 430–440.
21. Willis, G. (2005). *Cognitive interviewing: A tool for improving questionnaire design*. Sage.
22. Willis, G. B. (2015). *Analysis of the cognitive interview in questionnaire design: Understanding qualitative research* (pp. 1–275). Oxford University Press.
23. Hall, K. (2002). Hindi. "Unnatural" gender in Hindi (pp. 133–162).
24. Thomas, M. T. (2024). The modernization of English language in India. *Educational Administration: Theory and Practice, 30*(5), 8170–8176.

**Table 2: Overview of Translation Process with Edits**

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| Instruction at the top of the scales | How easy is it to use your leg (s)? Answer each question by circling one number. Please answer thinking of the past week. | No change | No change | Hindi word used for 'week' 'सप्ताह' was replaced with a more commonly used word 'हफ्ता' instead. | No change |
| Instruction at the top of the scales | These questions ask about the leg you are seeing the doctor or nurse about. | No change | No change | Hindi word used for 'questions' 'प्रश्न' was replaced with a more commonly used word 'सवाल' instead. | No change |
| Instruction at the top of the scales | If you wear a special shoe, shoe-lift or a brace or have an artificial leg (prosthetic leg), please answer the questions thinking of when you have them on. | No change | No change | No change | Hindi word for 'Artificial leg' (कृत्रिम टांग) was difficult to understand for the first participant, an easier word (नकली टांग) was suggested by this participant. This new word was used in brackets along with the original Hindi word for the subsequent interviews. Hindi translations for special shoe (विशेष जूता), shoe-lift (जूता लिफ्ट) or brace ( ब्रेस) were also difficult for 5/10 participants. However, upon consultation with the local clinical team in India, no edits were made. It was suggested that the participants who use special shoe, shoe-lift or brace will be able to relate to these words and understand them. |
| Response options for Appearance and Scar Item | Not at all, A little bit, Quite a bit, Very Much | No change | Hindi translations were corrected to reflect the original options in English | No change | No change |
| Response options for Appearance Scale | How does your leg look? Answer each question by circling one number. Please | No change | No change | No change | 5/10 had problems understanding instructions and linking them to the response options. It was decided to add the word 'like' |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | answer thinking of how your leg looks now. How much do you like….., Response Options: Not at all, A little bit, Quite a bit, Very Much | | | | (पसंद) after each response option; बिलकुल पसंद नहीं, थोड़ा सा पसंद, थोड़ा बहुत पसंद, बहुत ज़ादा पसंद |
| Response options for Physical Function Scale | I CANNOT do this, I have A LOT of trouble doing this, I have A LITTLE trouble doing this, I CAN do this | No change | No change | First and last response options were edited to provide options for both boys and girls I CANNOT do this (मैं ऐसा नही कर सकता / सकती हूँ), I CAN do this (मैं यह कर सकता / सकती हूँ) | No change |
| Physical Function Scale # 4 | Sit on a toilet? | No change | No change | No change | Hindi word for 'toilet' (शौचालय) was difficult for 5/10 participants. Two participants suggested using word 'Toilet' in brackets along with Hindi word for 'Toilet' (शौचालय) (टाय्लेट). This edit was made for the final version. |
| Physical Function Scale # 5 | Sit cross legged on the floor? | No change | No change | No change | Hindi word used for 'Cross-legged' (चोकडी) was difficult to understand for 4/10 participants. An alternate word was suggested by 3 participants. The consensus was to use the original Hindi word along with the alternate word suggested by the participants in brackets (चोकडी) (पालथी) |
| Physical Function Scale # 12 | Walk on a bumpy road? | No change | No change | No change | Hindi word used for 'bumpy road' (ऊबड़-खाबड़) was difficult to understand for 3/10 participants. An alternate word was suggested by 2 participants. The consensus was to use the original Hindi word along with the alternate word suggested by the participants in brackets (ऊबड़-खाबड़) (ऊँचा निचा) |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| Leg Symptom # 5 | My leg hurts when I run. | No change | No change | Male-gender-appropriate grammatical structure was modified to make the items gender neutral दौड़ते समय मेरी टांग में दर्द होता हैं। | No change |
| Leg Symptom # 6 | My leg hurts when I touch it. | No change | No change | male-gender-appropriate grammatical structure जब मैं इसे छूता हूं तो मेरी टांग में दर्द होता है was modified to provide options for both boys and girls जब मैं इसे छूता / छूती हूं तो मेरी टांग में दर्द होता है। | 2/10 participants didn't understand the item, consensus was to slightly re-phrase the time for clarity जब में अपनी टांग को छूता / छूती हूं तो मेरी टांग में दर्द होता है.<br>This item was further edited to make it gender neutral<br>मेरी टाँग को छूने पर उसमें दर्द होता है |
| Leg Symptom # 9 | My leg feels weak (shaky). | No change | No change | No change | Hindi word used for ' Shaky' (अस्थिर) was difficult for 2/10 participants. All 10 preferred to use Hindi word for 'Weak' (कमजोर) only. Hence the Hindi word for 'Shaky' was removed. |
| Leg Symptom # 10 | My leg feels numb (cannot feel it). | No change | No change | No change | Hindi word for 'Numb' (सुन्न) was understood by 5/10 participants. Later on when the spelling of Hindi word for 'Numb' were edited to सुन, subsequent participants were able to understand. |
| Leg Symptom # 13 | My leg feels itchy. | No change | No change | No change | Hindi word used for 'Itchy' (खुजली)was difficult to understand for 2/10 participants. An alternate word was suggested by 3 participants. The consensus was to use the original Hindi word along with the alternate word suggested by the participants in brackets खुजली ( खारिश) |
| Hindi Word used for Hip and Ankle | N/A | No change | No change | No change | Hindi word used for 'hip' ( कूल्हा) and 'Ankle' (टखना) difficult to understand for 5/10 and 8/10 participants respectively. When an image of the leg with an arrow |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | | | pointing towards hip and ankle was used, it made it easier for participants to understand. Hence, images of the leg pointing to each part of the leg were included for all scales. |
| Hip Symptom # 1 | My hip hurts when I rest or relax. | No change | No change | Male-gender-appropriate grammatical structure was modified to make the items gender neutral आराम करते समय मेरे कूल्हे में दर्द होता है। | No change |
| Hip Symptom # 5 | My hip hurts when I walk up the stairs. | No change | No change | Male-gender-appropriate grammatical structure was modified to make the items gender neutral सीढ़ियाँ चढ़ने पर मेरा कूल्हा दर्द करता है। | No change |
| Hip Symptom # 7 | My hip hurts when I run. | No change | No change | Male-gender-appropriate grammatical structure was modified to make the items gender neutral दौड़ते समय मेरे कूल्हे में दर्द होता है। | No change |
| Hip Symptom # 8 | My hip hurts when it makes sound (clicks or pops). | No change | The back-translated item in English was not grammatically correct. Hindi translation was verified and was found to be grammatically correct | Item was rephrased in Hindi for clarity. Words in bracketts (click or pop) (क्लिक या पॉप) were removed. Hindi translations of these words were considered potentially difficult for children . मेरा कूल्हा जब आवाज करता है तब मुझे दर्द होता है । | 5/10 participant had some difficulty with this item. Upon probing, it was found that these participants had never experienced these symptoms. Upon consultation with the local clinical team in India, no edits were made. It was suggested that the participants who had experienced this symptom will be able to relate and understand the item. |
| Hip Symptom # 9 | My hip gets stuck (not able to move it). | No change | No change | मेरा कूल्हा अटक जाता है (इसे हिलाने में सक्षम नहीं), Explanation for word 'Stuck' (इसे हिलाने में सक्षम नहीं)was removed. | 1/10 participants had difficulty understanidng this item. Upon consultation with the local clinical team in India, the explanation for word 'Stuck' was added back to the item. मेरा कूल्हा अटक जाता है (इसे हिलाने में सक्षम नहीं) |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| Knee Symptom # 1 | My knee hurts when I rest or relax. | No change | No change | जब मैं आराम करता हूं तो मेरा घुटना दर्द करता है male-gender-appropriate grammatical structure was modified to make the items gender neutral आराम करने पर मेरे घुटने में दर्द होता है। | No change |
| Knee Symptom # 6 | My knee hurts when I run. | No change | No change | जब मैं दौड़ता हूं तो तो मेरा घुटना दर्द करता है male-gender-appropriate grammatical structure was modified to make the items gender neutral दौड़ते समय मेरे घुटने में दर्द होता है | No change |
| Knee Symptom # 7 | My knee hurts when I bend it. | No change | No change | जब मैं इसे मोड़ता हूं तो मेरे घुटने में दर्द होता है male-gender-appropriate grammatical structure was modified to make the items gender neutral घुटना मोड़ने पर मुझे दर्द होता है | No change |
| Knee Symptom # 8 | My knee hurts when I straighten it. | No change | No change | जब मैं इसे सीधा करता हूं तो मेरा घुटना दर्द करता है male-gender-appropriate grammatical structure was modified to make the items gender neutral घुटना सीधा करने पर मुझे दर्द होता है | No change |
| Knee Symptom # 9 | My knee hurts when it makes a sound (clicks or pops). | No change | The back-translated item in English was not grammatically correct. Hindi | Item was rephrased in Hindi for clarity. Words in bracketts (click or pop) were removed. Hindi translations of these words were considered potentially | 2/10 participants asked for an explanation but were still able to understand मेरा घुटना जब आवाज करता है तब मुझे दर्द होता है, no edits were made |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | translation was verified and was found to be grammatically correct | difficult for children . मेरे घुटने में दर्द होता है जब यह आवाज करता है (क्लिक या पॉप)। | |
| Knee Symptom # 10 | My knee gets stuck (not able to move it). | No change | The back-translated item in English was not grammatically correct. Hindi translation was verified and was found to be grammatically correct | Item was rephrased in Hindi for clarity. Translation for 'not being able to move it' was considered not required and hence removed. मेरा घुटना अटक जाता है (इसे हिलाने में सक्षम नहीं) । | 1/10 participants were not able to understand the item without the translation for 'not being able to move it' (इसे हिलाने में सक्षम नहीं) in brackets. This was added back again. मेरा घुटना अटक जाता है (इसे हिलाने में सक्षम नहीं) । |
| Knee Symptom # 11 | My knee feels wobbly (like it is going to give out). | No change | No change | No change | 2/10 participants asked for an explanation for 'Wobbly'. An alternate word for 'Wobbly' (लड़खड़ाने ) was suggested and added in brackets मेरा घुटना डगमगाने (लड़खड़ाने ) लगता है |
| Ankle Symptom # 4 | My ankle hurts when I walk on a bumpy road. | No change | No change | No change | 2/10 participants asked for an explanation for 'Bumpy'. An alternate word for 'Bumpy' (उची नीची) was suggested and added in brackets उबड़-खाबड़ (उची नीची) सड़क पर चलने पर मेरे टखने में दर्द होता है। |
| Ankle Symptom # 5 | My ankle hurts when I run. | No change | No change | जब मैं दौड़ता हूं तो मेरे टखने में दर्द होता है male-gender-appropriate grammatical structure was modified to make the items gender neutral दौड़ते समय मेरे टखने में दर्द होता है। | No change |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| Ankle Symptom # 6 | My ankle hurts when it makes a sound (clicks or pops). | No change | The back-translated item in English was not grammatically correct. Hindi translation was verified and was found to be grammatically correct | मेरे टखने में दर्द होता है जब यह आवाज करता है (क्लिक या पॉप) Item was rephrased in Hindi for clarity. Words in brackets (click or pop) (क्लिक या पॉप) were removed. Hindi translations of these words were considered potentially difficult for children . मेरा टखना जब आवाज करता है तब मुझे दर्द होता है | No change |
| Foot Symptom # 1 | My foot hurts when I rest or relax. | No change | No change | जब मैं आराम करता हूं तो मेरे पैर में दर्द होता है male-gender-appropriate grammatical structure was modified to make the items gender neutral आराम करने पर मेरे पैर में दर्द होता है | No change |
| Foot Symptom # 3 | My foot hurts when I walk on a bumpy road. | No change | No change | | 2/10 participants asked for an explanation for 'Bumpy'. An alternate word for 'Bumpy' (ऊची नीची) was suggested and added in brackets उबड़-खाबड़ (ऊची नीची) सड़क पर चलने पर मेरे पैर में दर्द होता है। |
| Foot Symptom # 5 | My foot hurts when I walk with shoes on. | No change | No change | जब मैं जूते पहन कर चलता हूं तो मेरे पैर में दर्द होता है male-gender-appropriate grammatical structure was modified to make the items gender neutral जूते पहनकर चलने पर मेरे पैर में दर्द होता है | No change |
| Foot Symptom # 7 | My foot gets stuck (not able to move it). | No change | No change | मेरा पैर अटक जाता है Item was edited to remove explnation for 'not able to | No change |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | | move it' (हिलने-डुलने में असमर्थ) | |
| Leg-Related Distress # 1 | I hide my leg when I go out. | No change | No change | जब मैं बाहर जाता हूं तो मैं अपनी टांग छुपाता हूं Item was edited to provide options for both boys and girls जब मैं बाहर जाता/ जाती हूं तो मैं अपनी टांग छुपाता/ छुपाती हूं। | No change<br>Item was further edited slightly to make it simpler and verified with patients<br>बाहर जाते समय मैं अपनी टांग छुपाकर रखता/रखती हूं |
| Leg-Related Distress # 2 | I avoid wearing shorts or skirts that show my leg. | No change | No change | मैं ऐसे शॉर्ट्स या स्कर्ट पहनने से बचता हूं जो मेरी टांग को दिखाते हों Item was edited to provide options for both boys and girls मैं ऐसे निकर या स्कर्ट पहनने से बचता / बचती हूं जो मेरी टांग को दिखाते हों | 2/10 had not heard of the Hindi translation of word 'Shorts'. It was suggested to add words 'Shorts and Half-pants' in brackets मैं ऐसे निकर (शॉर्ट्स/हाफ पैन्ट्स) या स्कर्ट पहनने से बचता / बचती हूं जो मेरी टांग को दिखाते हों |
| Leg-Related Distress # 6 | I get upset when people look at my leg. | No change | No change | जब लोग मेरी टांग को देखते हैं तो मैं परेशान हो जाता हूं Item was edited to make it gender neutral<br>जब लोग मेरी टांग को देखते हैं तो मुझे परेशानीं होती है | No change<br>. |
| Leg-Related Distress # 7 | I get upset when people ask about my leg. | No change | No change | जब लोग मेरी टांग के बारे में पूछते हैं तो मैं परेशान हो जाता हूं Item was edited to make it gender neutral<br>जब लोग मेरी टांग के बारे में पूछते हैं तो मुझे परेशानीं होती है. | No change |
| Leg-Related Distress # 8 | I dislike photos that show my leg. | No change | No change | मैं उन तस्वीरों को ना पसंद करता हूं जो मेरी टांग को दिखाते हैं Item was edited to | No change |

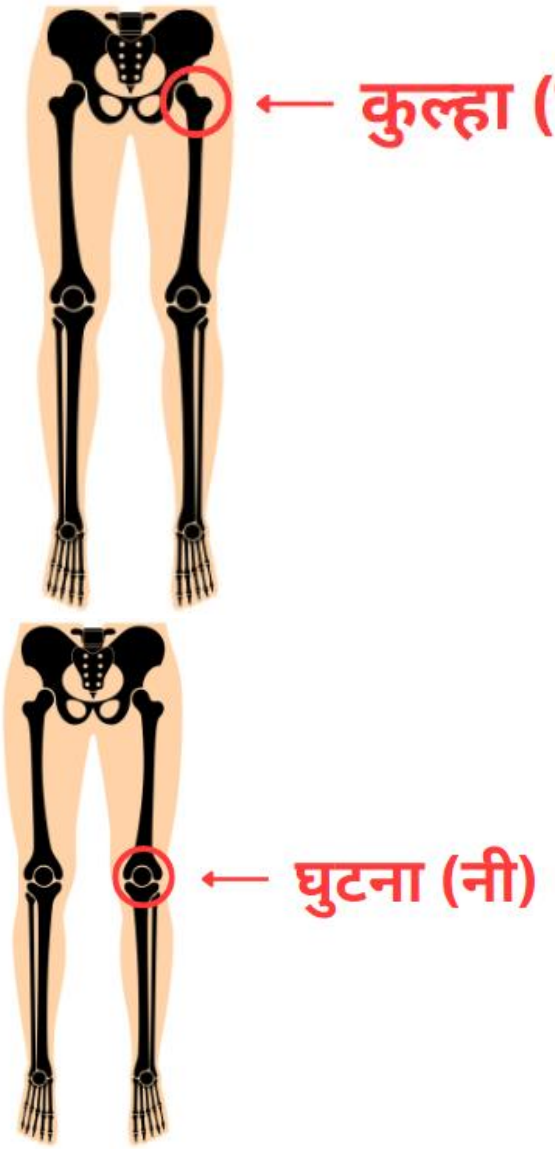
| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | | provide options for both boys and girls मैं उन तस्वीरों को ना पसंद करता / करती हूं जो मेरी टांग को दिखाते हैं | |
| Leg-Related Distress # 9 | I avoid going out because of my leg (like to a party). | No change | No change | मैं अपनी टांग (जैसे की पार्टी) के कारण बाहर जाने से बचता हूं Item was edited to provide options for both boys and girls मैं अपनी टांग के कारण बाहर घूमने जाने से बचता/ बचती हूं | No change |
| Leg-Related Distress # 10 | I dislike how I look when I walk. | No change | No change | जब मैं चलता हूं तो मुझे ना पसंद होता है कि मैं कैसा दिखता हूं Item was edited to provide options for both boys and girls चलते समय मैं कैसा दिखता / दिखती हूँ वह मुझे पसंद नहीं है | No change |
| Leg-Related Distress # 12 | I get teased about my leg. | No change | Back translated item in English had used a different word for 'teased'. Hindi translation was verified. | मैं अपनी टांग को लेकर चिढ़ जाता हूं Item was rephrased in Hindi मेरे टांग को लेकर मेरा मज़ाक उड़ाया जाता है | No change |
| Leg-Related Distress # 13 | I get upset when my leg stops me from having fun. | No change | No change | जब मेरी टांग मुझे मस्ती करने से रोकती है तो मैं परेशान हो जाता हूं Item was edited to make it gender neutral जब मेरी टांग मुझे मस्ती करने से रोकती हैं तो मुझे परेशानीं होती है. | No change |

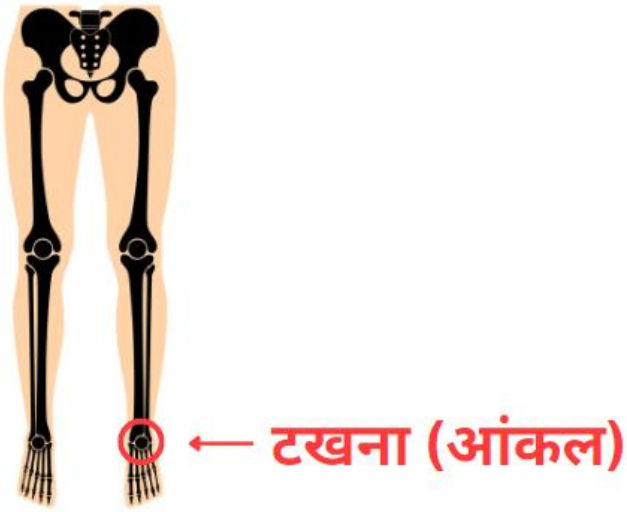
| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| Leg-Related Distress # 14 | I get upset when I am not able to wear the type of shoes I like. | No change | No change | जब मैं अपने पसंद के जूते नहीं पहन पाता तो मैं परेशान हो जाता हूंItem was edited to provide options for both boys and girls जब मैं अपने पसंद के जूते नहीं पहन पाता/ पाती तो मैं परेशान हो जाता / जाती हूं | No change |
| School # 1 | I like seeing my friends at school. | No change | No change | | 1/10 didn't understand the Hindi word for 'Friends' as it was male version of the word. Female version of Hindi word for 'Friends' (सहेलियों )was added aswell. मुझे अपने दोस्तों/सहेलियों को स्कूल में मीलना अच्छा लगता है। |
| School # 2 | My teachers help me at school. | No change | No change | | 1/10 didn't understand the Hindi word used for 'Teacher'. An alternate word for teacher (अध्यापक) was suggested by 2 participants and was added in brackets along with the original word. मेरे शिक्षक (अध्यापक) स्कूल में मेरी मदद करते हैं। |
| School # 3 | I feel accepted at school. | No change | No change | | मुझे स्कूल में स्वीकार्यता महसूस होती है 3/10 didn't understand the item. Alternate version मुझे लगता है कि मुझे स्कूल में अपनाया गया है was used for 7/10 participants who were able to understand. |
| School # 4 | Other students like me. | No change | Back translated item in English was incorrectly translated as 'Other students are like me'. Hindi translation was also found to be incorrect. | Item was translated to match the original item in English. | अन्य छात्र मुझे पसंद करते हैं 3/10 didn't understand the Hindi word used for 'students'. An alternate word was suggested by 2 participants and used in brackets in the subsequent interviews अन्य छात्र (विद्यार्थी) मुझे पसंद करते हैं |

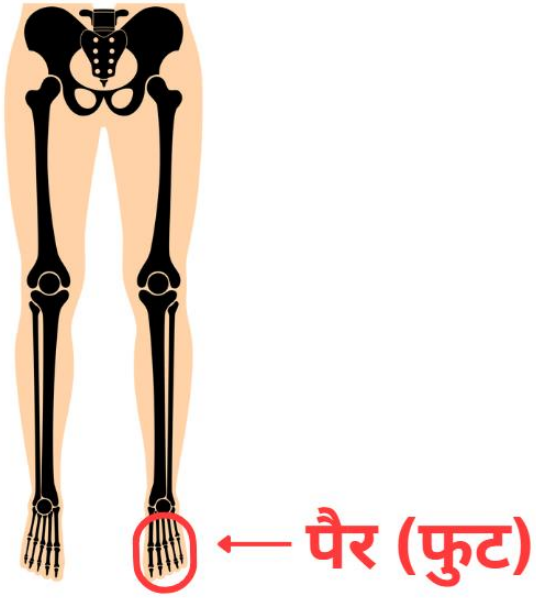
| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| School # 7 | Other students listen to me when I talk. | No change | No change | जब मैं बात करता हूं तो अन्य छात्र मेरी बात सुनते हैं Item was edited to provide options for both boys and girls, alternate word for student was added in brackets जब मैं बात करता हूं / करती हूँ तो अन्य छात्र (विद्यार्थी) मेरी बात सुनते हैं। | No change |
| School # 9 | I feel safe at school (not bullied). | No change | No change | मैं स्कूल में सुरक्षित महसूस करता हूं (धमकाया नहीं जाता) Item was edited to provide options for both boys and girls and easier version of 'not bullied' (मुझे बच्चे परेशान नहीं करते हैं) was added to bracktes मैं स्कूल में सुरक्षित महसूस करता हूं / करती हूँ (मुझे बच्चे परेशान नहीं करते हैं) | No change |
| School # 12 | I fit in at school. | No change | Back translated item in English was incorrectly translated as 'I am fit in school'. Hindi translation was also found to be incorrect. मैं स्कूल में फिट हूं। | Item was translated to match the original item in English. में स्कूल मे घुल मिल जाता / जाती हूँ | No change |
| Social Function # 2 | I have fun with friends. | No change | No change | मैं दोस्तों के साथ मस्ती करता हूं। item was modified to provide options for both | No change |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | | girls/boys मैं दोस्तों/सहेलियों के साथ मस्ती करता / करती हूं | |
| Social Function # 4 | People treat me the same as everyone else. | No change | No change | | 1/8 didn't understand the Hindi word used for 'Treat'. An alternate word for 'Treat' (वर्ताव) was suggested by two participants and was added in bracketts in subsequent interviews लोग मेरे साथ दूसरे लोगों की तरह ही व्यवहार (वर्ताव) करते हैं। |
| Social Function # 6 | I feel confident when I go out (like to a party) | No change | No change | Item was edited further to make it gender neutral बाहर जाते समय (जैसे किसी पार्टी में) मुझे अपने आप पर ि◌वशवास महसूस होता है। | No change |
| Social Function # 10 | I feel the same as other people my age. | No change | No change | मैं अपनी उम्र के अन्य लोगों की तरह ही महसूस करता हूं Item was edited to make it gender neutral मुझे अपनी उम्र के दूसरे लोगों जैसा ही महसूस होता है। | No change |
| Psychological Function # 2 | I enjoy life. | No change | No change | मैं जीवन का आनंद लेता हूं Item was edited to provide options for both boys and girls मैं जीवन का आनंद लेता / लेती हूं | No change |
| Psychological Function # 4 | I feel okay about myself. | No change | No change | मैं अपने बारे में ठीक महसूस करता हूं Item was edited to provide options for both boys and girls मैं अपने बारे में ठीक महसूस करता/करती हूं | No change |
| Psychological Function # 7 | I like myself. | No change | No change | मैं खुद को पसंद करता हूं Item was edited to provide options for both boys and | No change |

| Scale Name and item number/Instruction/Response Option | Original Instruction/Item/Response option in English | Forward Translation Discussion | Backward Translation Discussion | Expert Panel Meeting Discussion | Cognitive Debriefing Interviews |
|---|---|---|---|---|---|
| | | | | girls मैं खुद को पसंद करता /करती हूं | |
| Psychological Function # 9 | I feel great about myself. | No change | No change | मैं अपने बारे में बहुत अच्छा महसूस करता हूं Item was edited to make it gender neutral मुझे अपने बारे में अच्छा महसूस होता है। | No change |
| Psychological Function # 10 | I feel good about how I look. | No change | No change | मैं कैसा दिखता हूं, इसके बारे में मुझे अच्छा लगता है Item was edited to provide options for both boys and girls मैं कैसा दिखता / दिखती हूं, इसके बारे में मुझे अच्छा लगता है | No change |


← कुल्हा (हिप)
← घुटना (नी)


← टखना (आंकल)


← पैर (फुट)