Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Translation and Validation of the SPICT-4All™ into the Sinhala language in the Sri Lankan healthcare context: SPICT-4All-SIN™

GVC Fernando

chemetf@sjp.ac.lk

University of Sri Jayewardenepura

JJ Sundararaj

Christian Medical College

MDI Karunamuni

College of General Practitioners of Sri Lanka

Wijewardana D

College of General Practitioners of Sri Lanka

S Prathapan

University of Sri Jayewardenepura

Research Article

Keywords: palliative care, decision support models, decision aids, validation studies, primary care, translations

Posted Date: August 14th, 2025

DOI: https://doi.org/10.21203/rs.3.rs-7092473/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Abstract

Background

The Supportive and Palliative Care Indicators Tool (SPICT™), initially developed in English, helps identify patients whose deteriorating health may benefit from a palliative care approach. The SPICT-4All™ version is designed using simplified language to facilitate its use by mid-level healthcare workers and persons without a clinical background. In Sri Lanka, where palliative care is progressively integrated into national public health frameworks, mid-level healthcare workers are critical in assessing patients' palliative care needs. This validation study involved translating, cross-cultural adapting, and validating the content of the SPICT-4All™ tool for the Sinhala-speaking healthcare context.

Methods

This study used a forward-backwards translation method and a modified Delphi technique involving healthcare professionals and laypersons to ensure the tool’s linguistic accuracy, cultural relevance and content validity.

Results

This study employed a two-round modified Delphi method involving 12 expert panellists to culturally and linguistically adapt the SPICT4-All™ tool into Sinhala for use in Sri Lanka. Among the 53 items analysed for clarity, appropriateness, and cultural relevance in the first round, only six received unanimous ratings of ‘no issues’, and 19 responses were left unrated. Based on this, 47 items were revised in the second round to address issues such as unclear language, lack of semantic and idiomatic equivalence, and cultural inappropriateness. Seventeen items were deemed acceptable in their original form, while 30 were modified through iterative consensus, making it 100% consensus on all items and the finalised tool was named SPICT-4All-SIN™. An average administration time of 19.6 minutes was reported.

Conclusion

The validated tool, SPICT-4All-SIN™, presented through this publication, is expected to support healthcare professionals in identifying patients with palliative care needs early and facilitating holistic care planning within Sri Lankan healthcare settings.

BACKGROUND

The World Health Organization (WHO) defines palliative care as an approach that enhances the quality of life for patients and their families facing life-threatening illnesses by preventing and alleviating suffering. This includes early identification, meticulous assessment and treatment of physical, psychosocial and

spiritual problems (*WHO | WHO Definition of Palliative Care*, 2020). Early identification of people with deteriorating health due to illness or ageing provides an opportunity for holistic assessment, advance care planning and palliative care implementation. This approach improves health-related quality of life and reduces hospitalisations among those with life-limiting conditions (2–4). However, recognising such patients in primary care can be challenging (5,6).

Palliative care is a vital component of primary healthcare and is recognised as a human right, and it must be accessible to all without financial hardship (7). Many developed countries have integrated palliative care into their national healthcare frameworks (8). Lower- and middle-income countries (LMICs) are progressively following the same course of action (9).

The SPICT™ and SPICT4-All™:

The Supportive and Palliative Care Indicators Tool (SPICT™) was first developed in English in 2010 to help identify patients who would benefit from a palliative care approach (10). It includes general indicators of deteriorating health and specific indicators for life-limiting conditions. Studies show that SPICT™ improves healthcare professionals' confidence in the early identification of people with palliative care needs (11). Various translations of the tool have been adapted for diverse cultural settings, with the SPICT-4All™ version designed using minimal medical language to be accessible to carers, families and non-medical staff (12).

Status of Palliative Care in Sri Lanka:

Sri Lanka, a lower-middle-income nation with a human development index of 0.78, has an efficient public health system (13). However, palliative care remains in its infancy, with isolated services available across the country (8). The Ministry of Health has developed the National Strategic Framework for Palliative Care Development (2019-2023) to promote palliative care across all healthcare levels (*National Cancer Control Programme*, 2020). While integrating palliative care into the mainstream health system and capacity building among health professionals are in progress (15), it is also essential to build a system to identify and refer patients with palliative care needs to such services.

Sinhala Language Context:

The 2012 census reported that 75% of Sri Lanka's population are native Sinhala language speakers (*Department of Census and Statistics, Sri Lanka*, 2023). Over 87% of the population is able to speak Sinhala as a first or second language (Reis, 2021). Hence, translating the SPICT-4All™ into Sinhala is critical to ensuring that palliative care delivery aligns with the linguistic and cultural context of Sri Lanka. This is particularly valuable in community-based settings where palliative care needs are identified by nurses, social workers and family members (Nawaratne, 2023; *Palliative Care on the Move in Northern Province, Sri Lanka - Ehospice*, 2018; Ramadasa et al., 2023). This article outlines the process of translating, cross-culturally adapting and validating the SPICT-4All™ in Sinhala.

METHODS

The study involved translating, cross-cultural adapting and validating the content of the SPICT-4All™ tool for the Sinhala-speaking healthcare context. This translation and cultural validation study was conducted in primary care settings across Sri Lanka from May 2024 to January 2025. The processes were conducted in parallel for two languages, Sinhala and Tamil, the two most spoken languages in Sri Lanka.

All methods involved in translating the SPICT-4All™ followed national and international guidelines for ethical research involving humans, and specifically the WHO recommendations for translation and adaptation of instruments (21). According to their preferences, potential participants were provided with information sheets and consent forms in English or Sinhala.

Step 1: Forward Translation (English to Sinhala):

In the Sinhala counterpart of the study, SPICT-4All™ was translated into Sinhala using the forward-backwards translation method, a widely accepted approach for cross-cultural adaptation (22,23). Two bilingual professionals whose mother tongue is Sinhala independently translated the SPICT-4All™ into Sinhala. By using translators with native proficiency, the translation process aimed to capture the nuances of Sinhala. The translators focused on maintaining conceptual and idiomatic equivalence, avoiding literal translations where necessary. They used simple, natural language to make the tool accessible to target groups. The principal investigator (PI) and the bilingual experts compared the two translations to each other and the original English version. A few discrepancies were resolved by consensus, and the finalised forward translation was prepared for backwards translation.

Step 2: Backwards Translation (Sinhala to English):

Two independent bilingual translators, unfamiliar with the original SPICT-4All™, translated the Sinhala versions back into English. They then compared these translations to the original English SPICT-4All™ to identify any discrepancies or conceptual errors in the translation process. Once these were resolved through consensus among the bilingual experts and the PI, a common Sinhala version was formulated for cultural adaptation.

Step 3: Cross-Cultural Adaptation and Content Validity:

A modified real-time Delphi technique was employed to achieve consensus among 12 bilingual personnel from diverse backgrounds to ensure the tool was culturally and contextually relevant. These 12 bilingual experts evaluated the translated SPICT-4All™ for its appropriateness, clarity and relevance to the Sinhala-speaking Sri Lankan clinical practice. The modified Delphi process involved two rounds.

In the initial round, a group of bilingual experts rated each of the 53 phrases, hereafter termed ‘items’, of the translation for ambiguity, jargon, double-barrelled questions and value-laden words. Each sentence was marked 1. hard to answer, 2. confusing, 3. hard to understand, 4. disturbing/offensive, and 5. no issues. The experts provided their feedback to the PI. The PI analysed the experts' comments for each

item, and the percentages of agreement for each item were summarised after each round. If there was no total disagreement or an agreement of 100% for any of the items by the experts, those items were accepted.

In the second modified Delphi round, the items with less than 100% agreement (i.e., received ratings other than five) were highlighted to all experts. All participants met virtually and engaged in iterative modification of these phrases until a unanimous agreement was reached while constantly comparing with the original English version. A delicate balance was maintained between rendering the validated tool a precise translation of the original English version and being attentive to the nuances of the Sinhala language to make it comprehensible to native speakers. The team made judicious decisions to amend specific phrases of the original version based on their idiomatic, semantic, conceptual and experiential equivalences. The final adjudicated Sinhala version of the tool was named SPICT-4All-SIN™.

Further, as per Bergenholtz et al.'s (2022) validation process, the final tool was tested for applicability once culturally validated. The following open-ended interview questions were posed to the personnel involved in the cross-cultural validation phase. 1. How easy do you believe it will be to use the SPICT-4All-SIN™? 2. How do you see SPICT-4All-SIN™ being used and implemented in your clinical practice? 3. How long do you think it takes to complete the checklist?

RESULTS

The bilingual expert panel comprised twelve Sinhalese members fluent in English, of whom nine (75%) were women. Table 1 illustrates their age distribution and educational, professional and religious backgrounds.

Table 1. Expert Panel Members’ Characteristics

Characteristics	Number	Percentage
Sex		
Female	9	75.0
Male	3	25.0
Age		
30 – 40 years	7	58.33
40 – 50 years	3	25.0
50 – 60 years	2	16.66
Ethnicity		
Sinhala	12	100.0
Religion		
Buddhist	9	75.0
Christian	2	16.66
None	1	8.33
Highest level of educational qualification		
Advanced level	2	16.66
Diploma	3	25.0
Undergraduate degree	4	33.33
Postgraduate degree	3	25.0
Current employment		
Academic (immunology)	1	8.33
Dental surgeon	1	8.33
Doctor	3	25.0
Healthcare aid	1	8.33
Nursing Officer	3	25.0
Public health nursing sister	1	8.33
Radiographer	1	8.33
Unemployed	1	8.33

Delphi Round 1

Table 2 summarises the distribution of ratings of the 12 members for the 53 items (i.e., 636 responses) of the SPICT4-All™. Except for six items, the remaining 47 items did not receive a score of five or 'no issues' from all participants. Nineteen responses were left unrated by the participants.

Table 2: Results of the Delphi Study – Round 1

	Hard to answer	Confusing	Hard to understand	Disturbing/ offensive	No issues	None	Total responses
Number of responses	12	39	54	13	499	19	**636**

Delphi Round 2

The panellists modified the 47 items, which lacked consensus regarding their appropriateness, as illustrated in Appendix 1, until 100% agreement was reached. Of the 47 items that did not receive 100% consensus, 17 were deemed suitable to retain in their existing form and, hence, were not modified further. The remaining 30 were modified several times during this iteration until everyone agreed that each item suitably represented the original English statement, free of Sinhala spelling or grammatical errors and was acceptable to the Sri Lankan Sinhala-speaking community's cultural sensitivities. The main reasons for the modification of phrases in Delphi 2 were to ensure best-suited wording for the phrase (n=9), the precision of the translation (n=5), idiomatic equivalence (n=5), spelling and grammar accuracy in Sinhala (n=5), unambiguity/ clarity (n=3), experiential equivalence (n=1), semantic equivalence (n=1) and conceptual equivalence (n=1). Table 3 demonstrates the original English phrases against the Sinhala back-translations, the percentage agreements among the 12 experts regarding the suitability of these translations, the final adjudicated Sinhala phrases, their approximate English translations and the main reasons for the modifications in the Delphi round 2. The phrases modified based on idiomatic, semantic, conceptual and experiential equivalence are as follows.

Idiomatic equivalence (ensuring natural language use)

If the term 'toolkit' were to be directly translated, it would not make sense in the natural use of the language. Therefore, the term 'tool', which is more familiar to Sinhala speakers, was used instead.

The term 'moving' in the phrase 'Short of breath when resting, moving…' does not linguistically translate well into Sinhala. As such, the team decided to substitute 'moving' with '*when engaged in minor activities*'.

The direct translation of the phrase, 'has poor control of bladder and bowels' does not make clear sense in Sinhala language. Accordingly, the phrase was modified to 'uncontrolled urination and defecation', which is understandable by native Sinhala speakers.

The phrase ' share it with people who need to see it ' was slightly amended to ' share it with people who need to *know about* it ' to indicate that the care plans need to be shared with those who need to know the

directives and act on them.

Semantic equivalence (ensuring meaning accuracy)

The phrase ‘unplanned (emergency) admission(s) to hospital’ was perceived to be too complicated. Given that emergency admissions would invariably be unplanned, ‘sudden hospitalisation(s)’ was substituted to simplify the phrase.

To clarify the phrase' not well enough for cancer treatment’, it was amended to ‘not in a good health status to receive cancer treatment’. Its straightforward translation to Sinhala may have led to ambiguity as to what is meant by ‘well enough’.

It was felt that ‘Frequent infections; pneumonia’ may lead the respondent only to mark ‘yes’ if the patient suffers exclusively from pneumonia. Therefore, it was decided that amending the phrase to ‘Frequent infections *such as* pneumonia’ would be more inclusive regarding infections in different organs or systems.

Conceptual equivalence (aligning with the intended meaning)

The phrase ‘Ask these questions:’ may imply that these questions are to be raised with the patients. Therefore, the team agreed that ‘ask these questions *regarding such patients*’ would be more suitable.

The Sinhalese language does not have a suitable conceptual term or phrase for ‘…never quite recovers from *being more unwell*’. Therefore, ‘…often does not recover from *illness*’ was substituted to ensure the phrase captures the appropriate concept in simpler terms.

The neurological conditions ‘Parkinson’s, MS, stroke, and motor neurone disease’ do not have specific terms in the common Sinhala language. Therefore, in addition to their direct translations, the English terms were retained within brackets, which the respondents will likely be more familiar with.

Experiential equivalence (reflecting cultural and healthcare contexts)

Retaining *‘palliative care’* alone rather than ‘supportive and palliative care’ ensures it aligns with the growing usage of the term in Sri Lanka.

The Sinhala term for ‘dialysis’ is unfamiliar to the general population. Accordingly, while this term was included in the tool, it was elaborated further within brackets as ‘*the process of eliminating waste products from blood’* for clarity.

The phrase, ‘…professional who can *assess the person* and their family and help plan care’ was perceived to be too long and complex, which could lead to confusion among respondents. Accordingly, it was modified as ‘professional to plan care for that person and his family’.

The finalised Sinhala version of the SPICT4-All™ was named ‘SPICT-4All-SIN™’ (Chart 1).

Nine of the 12 participants responded to one or all three optional questions. Those who responded unanimously agreed that the developed tool is user-friendly and helpful in identifying patients who would benefit from a palliative care approach. Four respondents indicated an approximate time consumed in administering the tool, which averaged 19.625 minutes.

Chart 1: [illegible] (SPICT-4All™)

DISCUSSION

The translation and cultural adaptation of the SPICT-4All™ into Sinhala (SPICT-4All-SIN™) aligns with international best practices for cross-cultural validation of healthcare tools. Different versions of the SPICT™ tool have been translated into many languages worldwide, mainly in Europe, the Americas and Asia. SPICT-4All-SIN™ will be the first Asian translation for the SPICT-4All™ and the third in Asia for any SPICT™. Our study demonstrated a rigorous translation process using forward-backwards translation, expert consensus, and iterative refinement, ensuring the final adjudicated version's linguistic fidelity and contextual relevance.

A key strength of this study was the modified Delphi technique, which facilitated expert consensus on idiomatic, semantic, conceptual, and experiential equivalence. Similar methodologies have been employed in validating tools like the Palliative Performance Scale (PPS) and Karnofsky Performance Status (KPS) for non-English-speaking populations (24,25). The process followed in the current study also aligns closely with that adapted by other Asian settings such as Thailand (26). The need for such adaptation is well documented, particularly in palliative care settings where communication barriers hinder timely intervention (27). The SPICT-4All-SIN™ ensures greater applicability for mid-level healthcare professionals and informal caregivers in Sri Lanka by addressing linguistic challenges and refining culturally sensitive terminology.

One notable modification involved simplifying complex medical terms. For instance, the phrase ‘unplanned (emergency) admission(s) to hospital’ was replaced with ‘sudden hospitalisation(s)’ to enhance comprehension. This approach mirrors strategies employed in previous translations of SPICT™ across non-Western contexts, where medical jargon often poses barriers to use by non-specialists (26). Moreover, terms such as ‘dialysis’ were elaborated with explanatory notes to ensure clarity, a practice recommended for tool adaptation in lower- and middle-income countries (LMICs) (28).

Another significant adaptation involved retaining English terms for neurological conditions like Parkinson’s disease, multiple sclerosis, and motor neurone disease, as Sinhala lacks commonly understood equivalents. This decision is supported by literature indicating that bilingual terminology retention facilitates better recognition of medical conditions in multilingual populations (29). Additionally, refining directive phrases such as ‘Ask these questions’ to ‘Ask these questions regarding such patients’ ensured that the tool’s instructions were unambiguous.

STRENGTHS AND LIMITATIONS

Our findings suggest that SPICT-4All-SIN™ is both user-friendly and practical in primary care settings. The time durations consumed to administer SPICT™ in actual practice ranged from 2.3 (nurses) and 4.3 minutes (doctors) for the Thai version (26) to 8.5 ± 5.3 minutes for the Italian one (30). However, the average of 19.6 minutes for the Sinhala tool was based on the validators' approximate speculations, not on the tool's actual administration. Simulation-based training and repeated exposure to tools used in healthcare lead to a reduced time to administer them in practice (31). As such, implementing and testing the use of the SPICT-4All-SIN™ tool is warranted in a further stage of the study.

While our study provides a robust methodological framework, further research is required to assess the tool's utility in actual practice and its sensitivity and specificity in diverse clinical settings. With the growth of palliative care services in Sri Lanka, future studies should also evaluate their long-term impact on palliative care access and patient outcomes. Despite these limitations, SPICT-4All-SIN™ represents a crucial step towards integrating palliative care within Sri Lanka's healthcare landscape, thus fostering community-based identification of patients and appropriate referral systems. This initiative may ensure equitable access to quality end-of-life care in the long term.

CONCLUSION

The translation and cross-cultural adaptation of the SPICT-4All™ into Sinhala (SPICT-4All-SIN™) ensures that palliative care identification tools are accessible to a broader population in Sri Lanka. By employing a rigorous validation process, including expert consensus and linguistic modifications for idiomatic, semantic, conceptual and experiential equivalence, the final version aligns with the cultural and healthcare context of Sinhala-speaking communities. The findings indicate that SPICT-4All-SIN™ is user-friendly and applicable in primary care settings. This validated tool can potentially improve early identification of individuals requiring palliative care, facilitating timely interventions and enhancing the quality of life for patients and families. Further research and implementation studies will be essential to assess its impact in real-world healthcare settings.

Abbreviations

ERC: Ethics Review Committee

KPS: Karnofsky Performance Status

LMICs: Low- and Middle-Income Countries

MS: Multiple Sclerosis

PI: Principal Investigator

PPS: Palliative Performance Scale

SPICT™: Original English Supportive and Palliative Care Tool

SPICT-4All™: Original English Supportive and Palliative Care Tool for All.

SPICT-4All-SIN™: The newly developed Supportive and Palliative Care Tool for All in the Sinhala Language.

WHO: World Health Organization

Declarations

Ethics approval and consent to participate: The Research Ethics Committee of the Faculty of Medical Sciences at the University of Sri Jayewardenepura in Sri Lanka approved the study protocol on 7 May 2024 (approval number: ERC 04/24). All participants gave written informed consent.

Consent for publication: Not applicable.

Availability of data and materials: Data and materials are presented within the article or as appendices.

Competing interests: The authors declare that they have no competing interests.

Funding: This research did not receive a specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' contributions: All authors contributed to the study and read and approved the submitted version of the manuscript. Fernando GVC designed the study and oversaw the entire process through data collection, analysis and article drafting. Prathapan S supervised the study design, contributed to the methods and critically revised the articles. Karunamuni MDI, Wijewardana D and Sundararaj DJ coordinated the study participants, conducted the data collection and critically revised the final version of the article.

Acknowledgements: The guidance and support from the SPICT™ International Programme Lead, Kirsty Boyd, representing the Usher Institute of the University of Edinburgh, is appreciated. We sincerely acknowledge those who contributed their time and effort in translating, back-translating and validating the tool: Kalpanie Dulanthi Wijewardana, Malsha Seneviratne, LAS Shashikala, Suraji Liyanarachchi, BCD Balasooriya, N Rajakaruna, WDNN Weerasinghe, Priyanka Rajapakse, Inoka Sepali Aberathna, Hasara Kulatunga, NAD Indralal, PKGN Sanjeewani, Chadeeka Jayasuriya and RSS Senanayake.

References

1. WHO [2020]. [cited 2016 Dec 17]. WHO | WHO Definition of Palliative Care. Available from: http://www.who.int/cancer/palliative/definition/en/
2. Haun MW, Estel S, Rücker G, Friederich HC, Villalobos M, Thomas M, et al. Early palliative care for adults with advanced cancer. Cochrane Database Syst Rev. 2017 Jun 12;6(6):CD011129.

3. Qureshi D, Tanuseputro P, Perez R, Pond GR, Seow HY. Early initiation of palliative care is associated with reduced late-life acute-hospital use: A population-based retrospective cohort study. Palliat Med. 2019 Feb;33(2):150–9.
4. Vanbutsele G, Pardon K, Van Belle S, Surmont V, De Laat M, Colman R, et al. Effect of early and systematic integration of palliative care in patients with advanced cancer: a randomised controlled trial. Lancet Oncol. 2018 Mar;19(3):394–404.
5. Bergenholtz H, Weibull A, Raunkiær M. Supportive and palliative care indicators tool (SPICT™) in a Danish healthcare context: translation, cross-cultural adaptation, and content validation. BMC Palliat Care. 2022 Mar 24;21(1):41.
6. Raunkiær M, Timm H. Development of palliative care in nursing homes: evaluation of a Danish project. Int J Palliat Nurs. 2010 Dec;16(12):613–20.
7. Brennan F. Palliative care as an international human right. J Pain Symptom Manage. 2007 May;33(5):494–9.
8. Clark D, Baur N, Clelland D, Garralda E, López-Fidalgo J, Connor S, et al. Mapping Levels of Palliative Care Development in 198 Countries: The Situation in 2017. J Pain Symptom Manage. 2020 Apr;59(4):794.
9. De Lima L, Pastrana T. Opportunities for Palliative Care in Public Health. Annu Rev Public Health. 2016;37(1):357–74.
10. Highet G, Crawford D, Murray SA, Boyd K. Development and evaluation of the Supportive and Palliative Care Indicators Tool (SPICT): a mixed-methods study. BMJ Support Palliat Care. 2014 Sep 1;4(3):285–90.
11. Lunardi L, Hill K, Crail S, Esterman A, Le Leu R, Drummond C. 'Supportive and Palliative Care Indicators Tool (SPICT) improves renal nurses' confidence in recognising patients approaching end of life'. BMJ Support Palliat Care. 2020 Nov 3;bmjspcare-2020-002496.
12. SPICT [Internet]. 2017 [cited 2024 Feb 14]. SPICT-4ALL™. Available from: https://www.spict.org.uk/spict-4all/
13. Aturupane H, Glewwe P, Isenman P. Poverty, Human Development, and Growth: An Emerging Consensus? Am Econ Rev. 1994;84(2):244–9.
14. National Cancer Control Programme [Internet]. [cited 2022 Nov 21]. Available from: https://www.nccp.health.gov.lk/en/posts/national-strategic-framework-for-palliative-care-development-in-sri-lanka-2019-2023
15. Goh CR, Lee SY. Education in pain and palliative care in the low- and middle-income countries of the Asia Pacific region. PAIN. 2018 Sep;159:S74.
16. Department of Census and Statistics, Sri Lanka [Internet]. [cited 2020 Jun 26]. Available from: http://www.statistics.gov.lk/PopHouSat/Pop_Chra.asp. 2020
17. Reis S. Pritzker Legal Research Center: Sri Lanka: Center for International Human Rights: Population, Ethnic Groups, and Languages [Internet]. [cited 2024 Feb 14]. Available from:

https://library.law.northwestern.edu/c.php?g=1182176&p=8644721. 2021

18. Nawaratne S. Putting community-based palliative care into practice through primary health care: policy, education and service delivery considerations for Sri Lanka. 2023 Aug 25;1.
19. Palliative care on the move in Northern Province, Sri Lanka - ehospice [Internet]. [cited 2024 Feb 14]. Available from: https://ehospice.com/international_posts/palliative-care-on-the-move-in-northern-province-sri-lanka/ 2015
20. Ramadasa U, Silva S, Udumulla U, Perera S, Lekamwasam S. Caregiver strain among patients of palliative care in Sri Lanka: validation of modified caregiver strain index - Sinhala version. BMC Palliat Care. 2023 Nov 4;22(1):172.
21. World Health Organization. WHODAS 2.0 Translation Package (version 1.0). Translation and linguistic evaluation protocol and supporting material. Geneva Switz World Health Organ. 2023;
22. Gjersing L, Caplehorn JRM, Clausen T. Cross-cultural adaptation of research instruments: language, setting, time and statistical considerations. BMC Med Res Methodol. 2010 Feb 10;10:13.
23. Guillemin F, Bombardier C, Beaton D. Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. J Clin Epidemiol. 1993 Dec;46(12):1417–32.
24. Barallat E, Nabal M, Canal J, Trujillano J, Gea-Sánchez M, Larkin PJ, et al. The Spanish Adaptation of the Palliative Performance Scale (Version 2) Among Cancer Patients at the End of Life: Psychometric Properties. J Pain Symptom Manage. 2017 Oct;54(4):570-577.e5.
25. Dai Y, Ding J, Daveson BA, Chen Y, Connolly A, Johnson CE. Validating performance status and activities of daily living assessment tools for Chinese palliative care in a cancer setting: A cross-cultural psychometric study. Asia-Pac J Oncol Nurs [Internet]. 2024 Dec 1 [cited 2025 Jan 30];11(12). Available from: https://apjon.org/article/S2347-5625(24)00235-X/fulltext
26. Sripaew S, Fumaneeshoat O, Ingviya T. Systematic adaptation of the Thai version of the supportive and palliative care indicators tool for low-income setting (SPICT-LIS). BMC Palliat Care. 2021 Feb 19;20(1):35.
27. Saretta M, Doñate-Martínez A, Alhambra-Borrás T. Barriers and facilitators for an effective palliative care communication with older people: A systematic review. Patient Educ Couns. 2022 Aug 1;105(8):2671–82.
28. Wild D, Grove A, Martin M, Eremenco S, McElroy S, Verjee-Lorenz A, 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 J Int Soc Pharmacoeconomics Outcomes Res. 2005;8(2):94–104.
29. Harkness JA, Villar A, Edwards B. Translation, Adaptation, and Design. In: Survey Methods in Multinational, Multiregional, and Multicultural Contexts [Internet]. John Wiley & Sons, Ltd; 2010 [cited 2025 Jan 30]. p. 115–40. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1002/9780470609927.ch7
30. Casale G, Magnani C, Fanelli R, Surdo L, Goletti M, Boyd K, et al. Supportive and palliative care indicators tool (SPICT^{TM}): content validity, feasibility and pre-test of the Italian version. BMC Palliat

Care. 2020 Jun 6;19(1):79.
31. Elendu C, Amaechi DC, Okatta AU, Amaechi EC, Elendu TC, Ezeh CP, et al. The impact of simulation-based training in medical education: A review. Medicine (Baltimore). 2024 Jul 5;103(27):e38813.

Chart

Chart 1 is available in the Supplementary Files section.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Chart1SPICT4All.docx
- Appendix1.docx