

Turkish Adaptation of the Supportive and Palliative Care Indicators Tool (SPICT): A Validity and Reliability Study

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Abstract

Background

One of the major challenges in clinical practice in Türkiye is the lack of objective criteria for the early identification of patients requiring palliative care. The Supportive and Palliative Care Indicators Tool (SPICT™), developed by Murray SA and colleagues and updated in 2025, is an internationally recognized clinical decision-support tool designed to systematically identify deteriorating health and unmet palliative care needs. This study aims to evaluate the validity and reliability of the Turkish version of the SPICT (SPICT-TR).

Methods

This descriptive and methodological study was conducted through face-to-face interviews involving 24 physicians and 356 patients. The linguistic adaptation process followed the Beaton protocol and the five-stage translation and cultural adaptation guidelines recommended by the World Health Organization. The data collection form consisted of two sections: sociodemographic information of physicians and patients, and the SPICT-TR along with the "Surprise Question/Reverse Surprise Question." Data were analyzed using descriptive statistics, Chi-square, and Chi-square Exact tests. Internal consistency was evaluated using the Kuder–Richardson 20 (KR-20) coefficient, and inter-rater reliability was assessed using Cohen's Kappa coefficient.

Results

The mean age of the 356 patients included in the study was 70.7 ± 11.5 years, with the majority of the sample consisting of patients with multimorbidity. The internal consistency coefficient was found to be $KR-20 = 0.87$, and the agreement with physicians' clinical assessments was Cohen's Kappa = 0.93 ($p < 0.001$). Patients identified as needing palliative care according to SPICT-TR had a significantly higher rate of hospitalization within the last month ($p < 0.001$). A strong correlation was found between SPICT-TR and Surprise Question responses; specifically, the accuracy of mortality prediction was significant in dementia and malignant diseases ($p < 0.001$).

Conclusions

The SPICT-TR is a culturally adapted, valid, and reliable assessment tool for identifying patients with palliative care needs within the Turkish healthcare system. Its high internal consistency and strong agreement with physician clinical judgment suggest that it can serve as a structured support tool in clinical practice. Integrating SPICT-TR into routine practice may contribute to earlier recognition of palliative care needs and timely care planning.

INTRODUCTION

According to the World Health Organization (WHO), palliative care is a comprehensive approach aimed at preventing and relieving suffering for patients and their families facing life-threatening illnesses through early identification, holistic assessment, and treatment. This holistic understanding, which encompasses not only medical but also psychosocial and spiritual needs, forms the cornerstone of palliative care—a critical field of modern medicine. Palliative care is an active care model that aims to improve quality of life and serves as a transition from purely curative approaches in advanced stages of disease. It is not limited to end-of-life care but extends to any individual suffering from a serious illness, regardless of the diagnosis (1).

The 2020 Global Atlas of Palliative Care estimates that the annual global need for palliative care is approximately 56.8 million people. About 52.8 million (93%) of this need belongs to the adult population (≥ 20 years). Despite this, access to these services remains severely limited; globally, only about 12% of individuals in need receive appropriate and high-quality palliative care. This disparity is more pronounced in low- and middle-income countries, where a large portion of the global palliative care burden is concentrated (2).

The development of palliative care services in Türkiye has become a priority area for the healthcare system over the last fifteen years, undergoing a comprehensive transformation at both policy and implementation levels. The increasing burden of chronic diseases, aging population dynamics, and changing social roles of caregivers have significantly heightened the demand for these services. While initially defined by limited capacity and a cancer-centric focus, the position of palliative care in Türkiye has now expanded toward a multidisciplinary, tiered, and community-based model (3–6). The relatively delayed development of these services in Türkiye compared to global trends is attributed to cultural characteristics and family structures favoring home care, a persistent drive for exhaustive medical interventions until the end of life, human resource challenges, the absence of a distinct palliative care sub-specialty, and insufficient public awareness (7).

Palliative care services in Türkiye play a vital role in enhancing the quality of life for patients and their families, optimizing symptom control (e.g., pain, dyspnea, nausea), reducing the burden on intensive care units and hospital beds, increasing cost-effectiveness, and decreasing readmission rates (6). Therefore, it is essential for healthcare professionals in this field to recognize symptoms, understand the complex processes caused by symptom clusters, plan symptom-specific management, and translate research findings into clinical practice (8). In this context, inter-level information and experience sharing are gain importance to ensure continuity of care, highlighting that family physicians, as the first point of contact for patients, should play a key role in sustaining the system. Consequently, validated diagnostic tools are required to recognize patients' palliative care needs early and ensure effective planning.

Effective delivery of palliative care services depends on the early identification of individuals in need. However, in clinical practice, failure to recognize supportive or palliative care needs in a timely manner

can lead to delayed referrals to appropriate services (9, 10). To address this issue, various screening and assessment tools have been developed.

The Supportive and Palliative Care Indicators Tool (SPICT™) is a practical and user-friendly tool aimed at helping clinicians identify individuals with palliative care needs earlier and more systematically (11). Originally developed by the University of Edinburgh in Scotland, SPICT has been translated and validated in numerous languages for international use (12). The tool consists of six general indicators of deteriorating health, 23 disease-specific clinical indicators, and core recommendations for care review and planning (11).

Introducing the SPICT into the Turkish language will enable earlier initiation of palliative care services in our country, improving clinical decision-making and increasing patient and family satisfaction. The use of this scale for screening purposes will serve as a guide for assessing requirements and emergency planning, thereby enhancing patients' quality of life and facilitating access to healthcare services while contributing to the efficient use of health resources. Accordingly, the aim of this study is to perform the cultural adaptation of the Turkish version of SPICT (SPICT-TR) and to evaluate its validity and reliability.

METHODS

Ethical Approval and Permissions

Prior to the study, formal permission was obtained via email from Dr. Scott Murray, one of the primary developers of the SPICT™. Additionally, ethical approval was granted by the Non-Interventional Clinical Research Ethics Committee of Izmir University of Health Sciences, Tepecik Training and Research Hospital (Date: 15/04/2022; Decision No: 2022/04-38). All participants were provided with comprehensive information regarding the study, and written informed consent was obtained. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Study Population and Sample

This research is a descriptive, methodological, validity, and reliability study. It was conducted between June 1, 2025, and August 31, 2025, at Izmir University of Health Sciences, Tepecik Training and Research Hospital. The study population included inpatient and outpatient individuals over the age of 18 followed by resident and specialist physicians. The study was completed using face-to-face interviews with 24 physicians and 356 patients under their clinical follow-up.

Linguistic Adaptation and Cultural Adaptation Process

The linguistic translation process was carried out in accordance with the Beaton protocol and the World Health Organization (WHO) recommendations for translation and cultural adaptation. The scale was translated into Turkish by two independent translators who are native Turkish speakers with advanced proficiency in English. A single consolidated Turkish version was created by evaluating these translations. This version was then back-translated into English to ensure conceptual and semantic

equivalence with the original text. The research team compared the Turkish and English versions to finalize the Turkish translation.

Subsequently, an expert panel of 10 professionals—including family medicine specialists, internal medicine specialists, and nurses—reviewed the translation for grammatical and semantic errors. Necessary refinements were made based on their suggestions to establish the final version. The Turkish adaptation was titled the "Supportive and Palliative Care Indicators Tool (SPICT-TR)."

Data Collection

Data collection forms were administered via face-to-face interviews after obtaining legal permissions. The first section of the questionnaire included sociodemographic information for both the physician and the patient, while the second section included the SPICT-TR and the Surprise Question (SQ) / Reverse Surprise Question (RSQ). The Surprise Question was posed to physicians as: *"Would it surprise you if this patient, whom you evaluated using SPICT-TR, were to die within the next 12 months?"*; the Reverse Surprise Question was: *"Would it surprise you if this patient remained alive in the next 12 months?"*.

Before data collection, participating physicians received a brief orientation on the purpose, evaluation criteria, and application method of the SPICT-TR to ensure a standardized approach. Evaluations were performed by the physicians clinically managing the patients. A patient was considered to have palliative care needs if at least two general indicators and at least one disease-specific clinical indicator were present in the SPICT-TR assessment.

Statistical Analysis

Statistical analyses were performed using SPSS Statistics version 25.0. Descriptive statistics were presented as mean $\pm$ standard deviation or median (minimum-maximum) for continuous variables, and as frequencies (n) and percentages (%) for categorical variables. The Chi-square test was used to evaluate relationships between categorical variables; in cases where expected cell frequencies were insufficient, the Chi-square Exact test was utilized. Due to the dichotomous nature of the tool, the internal consistency reliability of the SPICT-TR was evaluated using the Kuder–Richardson 20 (KR-20) coefficient. The agreement between the SPICT-TR results and physicians' clinical judgments was assessed using Cohen's Kappa coefficient. A p-value of < 0.05 was considered statistically significant.

RESULTS

Sociodemographic Characteristics

The mean age of the patients (N = 356) was 70.7 ± 11.5 years, with a median age of 72 (range: 23–101). Of the participants, 51.1% were female (n = 182) and 48.9% were male (n = 174). Twenty-four physicians (specialists or residents) working in the field of internal medicine participated in the study.

Reliability and Feasibility of the Tool

The internal consistency of the SPICT-TR was found to be **KR-20 = 0.87**, indicating high internal consistency and reliability.

Table 1
Distribution of Physicians’ SPICT-TR Evaluation Characteristics (n = 24)

Characteristics	Mean ± SD	Median (Min-Max)
Number of Daily Patient Evaluations	30 ± 14	27.5 (15–65)
Daily Number of Patients with Palliative Care Needs per SPICT-TR	3 ± 1	2 (1–7)
SPICT-TR Application Time (minutes)	5 ± 1.5	5 (3–10)
	n	%
Specialty – Internal Medicine	24	100
Feasibility Assessment of SPICT-TR		
Feasible	24	100
Not Feasible	-	-

Physicians reported an average application time of 5 ± 1.5 minutes for the SPICT-TR. All physicians (100%) were from internal medicine specialties and stated that the SPICT-TR tool is feasible for clinical use.

Validity and Clinical Agreement Analysis

A high level of agreement was observed between the SPICT-TR results and the physicians' clinical judgments regarding the need for palliative care.

Table 2
Agreement Between Physician Judgment and SPICT-TR Decision (Validation) (n = 356)

Physician’s Decision				
SPICT-TR Result	No Palliative Care Need n(%)	Palliative Care Need n(%)	Kappa (κ)	p value
No Palliative Care Need	196 (96.1)	4 (2.6)	0.93	< 0.001
Palliative Care Need	8 (3.9)	148 (97.4)		

For the 196 patients identified by SPICT-TR as having no palliative care need, 96.1% (n = 196) of physicians reached the same conclusion. Among the 156 patients identified by SPICT-TR as requiring palliative care, 97.4% (n = 148) were evaluated similarly by physicians. The calculated Cohen's Kappa coefficient was 0.93 (p < 0.001), demonstrating excellent agreement.

Relationship with Clinical Indicators and Surprise Questions

Patients identified as having palliative care needs via SPICT-TR had a significantly higher rate of hospitalization within the last month. Furthermore, mortality within the next 12 months was predicted more strongly for these patients.

Table 3
Relationship Between Palliative Care Need (via SPICT-TR), Hospitalization, and SQ/RSQ (n = 356)

	No Palliative Care Need (n = 200)	Palliative Care Need (n = 156)	
	n(%)	n(%)	p value
Hospitalization (Last 1 Month)			
No	149 (74.5)	50 (32.1)	< 0.001
Yes	51 (25.5)	106 (67.9)	
Would it surprise you if this patient died within 12 months? (SQ)			
Yes	177 (88.5)	15 (9.6)	< 0.001
No	23 (11.5)	141 (90.4)	
Would it surprise you if this patient was alive after 12 months? (RSQ)			
Yes	2 (1)	128 (82.1)	< 0.001
No	198 (99)	28 (17.9)	

Chi-Square test, p < 0.05 significant.

In conclusion, based on the evaluation of 356 patients, the rate of hospitalization within the last month was found to be significantly higher in patients with palliative care needs. Furthermore, for patients identified by SPICT-TR as requiring palliative care, the predicted likelihood of mortality within the next 12 months was substantially stronger, while the probability of remaining alive after 12 months was predicted to be significantly lower. These findings demonstrate that the identification of palliative care

needs using SPICT-TR highly correlates with both the surprise/reverse surprise questions and the patients' recent hospitalization history.

DISCUSSION

Early and systematic identification of palliative care needs in the course of life-threatening chronic illnesses is critical for improving the quality of life for patients and families, reducing symptom burden, and preventing unnecessary healthcare utilization (2). To meet this need, the Supportive and Palliative Care Indicators Tool (SPICT™), developed in the United Kingdom and validated in numerous countries, serves as an internationally recognized assessment instrument (11). Any scale or tool must be validated in a patient sample before being implemented in the general population. Accordingly, this study evaluated the validity and reliability of the Turkish version of the SPICT (SPICT-TR).

The primary findings of this research demonstrate that the SPICT-TR possesses high internal consistency (KR-20 = 0.87) and shows a high level of agreement with physicians' clinical assessments (Kappa = 0.93, $p < 0.001$). According to the Landis and Koch classification, a kappa value at this level represents "almost perfect" agreement (13). These results provide strong evidence that the scale is a valid and reliable tool for identifying palliative care needs within the Turkish healthcare system, ensuring that clinical practice in Türkiye aligns with international standards.

Regarding the feasibility of the SPICT-TR in clinical settings, the average application time was found to be 5 ± 1.5 minutes. All participating physicians stated that the SPICT-TR is feasible. Similar adaptation studies in the literature (e.g., studies from Spain, Thailand, and Taiwan) have likewise reported that the SPICT can be administered in a short duration (14, 15, 16). In our study, physicians managed an average of 30 ± 14 patients daily; despite this heavy clinical workload, the fact that the SPICT-TR could be completed quickly indicates that the tool is practical and compatible with clinical workflow. This finding supports the potential for integrating palliative care assessments into routine clinical evaluations in the Turkish healthcare system. Given that this is the first validation study of the SPICT in Türkiye, the slightly longer application time is considered acceptable; this duration is expected to decrease as clinical experience with the tool grows.

The dual-track approach using the Surprise Question (SQ) and Reverse Surprise Question (RSQ) within the SPICT-TR provides an original contribution compared to the single-track SQ applications prevalent in the literature. Conventionally, the SQ is applied unilaterally as: *"Would you be surprised if the patient died in the next 12 months?"* In this study, we additionally evaluated the question: *"Would you be surprised if the patient was still alive in the next 12 months?"* This method enhances clinical sensitivity by allowing physician foresight to be assessed from the perspectives of both mortality and life expectancy. In this regard, the SPICT-TR stands out as a powerful tool not only for identifying palliative care needs but also for supporting physician decisions with objective criteria.

Limitations of the Study

The application of the SPICT-TR was conducted only by residents and specialist physicians. However, international literature (e.g., China, Thailand, Taiwan) shows that the tool is also utilized by nurses and multidisciplinary team members. Therefore, additional studies testing the tool's feasibility among different professional groups could enhance the multidisciplinary validity of the SPICT-TR in the field.

Another limitation is that the data were collected from a single center (Izmir Tepecik Training and Research Hospital), which may affect the generalizability of the results to the entire Turkish population. Nevertheless, the large sample size of 356 patients and the diversity of participants balance this limitation and increase the methodological strength. Additionally, all 24 participating physicians were from internal medicine specialties (Family Medicine, Internal Medicine, Neurology, Oncology, Hematology, etc.). Future multicenter studies covering different specialties, including surgical branches, are needed to evaluate the effectiveness of the SPICT-TR more broadly.

Recommendations for Future Research

To more clearly demonstrate the effectiveness of the SPICT-TR as a clinical decision-support mechanism, longitudinal studies tracking actual 12-month mortality and hospitalization data following the application of the scale are recommended. Furthermore, the impact of using the tool in primary care settings (Family Health Centers) on referring patients to palliative care should be evaluated.

CONCLUSIONS

In conclusion, the SPICT-TR stands out as a scientifically validated, rapidly applicable, and culturally adapted palliative care assessment tool for the Turkish healthcare system. The utilization of this tool will facilitate the early identification of patients in need of palliative care by healthcare professionals, support clinical decision-making with objective criteria, and contribute to the holistic and sustainable development of palliative care services in our country.

Declarations

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Conflict of Interest Disclosure:

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary Information

The original version of this tool and its adaptation into our language have been included as Supplementary Material 1 and 2.

Ethics approval and consent to participate:

Prior to the study, necessary permissions were obtained via email from Dr. Scott Murray, one of the developers of the SPICT™ tool. Furthermore, ethical approval for this study was granted by the Non-Interventional Clinical Research Ethics Committee of Izmir University of Health Sciences, Tepecik Training and Research Hospital (Date: 15/04/2022; Decision No: 2022/04–38). All participants were provided with comprehensive information regarding the study, and written informed consent was obtained. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Consent for publication:

Informed consent was obtained from all subjects involved in the study for publication in accordance with the requirements of the institutional ethics committee.

Patient Consent Statement

Informed consent was obtained from all subjects involved in the study in accordance with the requirements of the institutional ethics committee.

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Author Contribution

Ö.K.Ç.(ORCID iD: 0009-0002-9544-8133): Writing, literature review, data collection and analysis of results. H.I. (0000-0002-9648-2029): Supervision, data collection. Y.K.Ö.(0000-0003-1463-6627): Supervision.

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Data Availability

Availability of data and materials: The datasets generated and/or analyzed during the current study are not publicly available due to patient privacy and confidentiality requirements but are available from the corresponding author on reasonable request.

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Supplementary Files

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

- [SPICT2025OriginalEnglishVersionSupplementaryMaterial1.pdf](#)
- [SPICTTurkishTranslateVersionSupplementaryMaterial2.docx](#)