Original Research Article

Turkish Validity and Reliability Study of Spirituality in Palliative Care Scale

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Abstract

Aim: This study aimed to assess the validity and reliability of the "Spirituality in Palliative Care Scale" among nurses in Türkiye.

Methods: The study was carried out with a methodological design. The study population consisted of nurses working in internal medicine and surgical clinics at a training and research hospital located in the western part of Türkiye between November 15, 2022, and April 12, 2023. The data for the study were collected through face-to-face interviews with nurses during their weekday break times in the clinics they worked.

Results: Considering the opinions of the experts, the content validity indices of the scale items ranged between 0.88 and 1.00. As a result of the factor analysis, the number of items in the scale decreased from twelve to eight. The total variance explanatory value of the acceptance and spiritual nursing behaviors subscale was 35.010%, that of the ability to be mindful subscale was 30.783%, and that of the Spirituality in Palliative Care Scale was 65.792%. The factor loadings of the scale items ranged from 0.636 to 0.852. The Cronbach's alpha coefficient for the scale with eight items was found to be 0.851, for the ability to be mindful subscale was 0.728, and for the acceptance and spiritual nursing behaviors subscale was 0.843.

Conclusion: It was determined that the Turkish version of the Spirituality in Palliative Care Scale met the validity and reliability criteria at an acceptable- level. The scale, which has an important place in the evaluation of Spirituality in Palliative Care, can be used in clinical studies.

Key words

Nursing, Spirituality, Validity, Reliability, Palliative care.

Introduction

The World Health Organization (WHO) defines palliative care as an approach that enhances the quality of life for adult/child patients and their families facing problems associated with life-threatening illnesses. In palliative care, the objective is to ensure early detection, accurate assessment, and treatment of pain, as well as physical, psychosocial, and spiritual issues, in addition to relieving or preventing pain [1]. Palliative care, as an integral part of all health services in a human-centered and integrated manner [2], necessitates a comprehensive approach to care [3]. Only 14% of patients worldwide who need palliative care can access this service. Countries are expected to strengthen these services to achieve the “Sustainable Development Goal 3”. Additionally, alleviating patients' physical, social, or mental health pain is considered a global ethical responsibility. Therefore, the WHO aims to integrate palliative care into health systems as a significant component and to enhance equitable- access to palliative care services. It emphasizes the importance of prioritizing palliative care within the framework of primary health care approaches [1].

The multidisciplinary nature of the palliative care process places significant responsibilities on nurses [3]. A holistic approach is crucial in ensuring effective nursing care in the palliative care process. In holistic nursing care, individuals are considered holistically, acknowledging their biological, social, physical, and spiritual aspects as a whole [4, 5]. In addition, nurses need to identify and address the biopsychosocial and spiritual care needs of patients receiving palliative care along with their relatives [6, 7]. Nurses providing palliative care need to have sufficient knowledge and skills to support, encourage, and respond to patients' questions, meeting their physical, emotional, and spiritual needs [3, 8, 9]. Spirituality is a coping process that helps individuals overcome challenges they face [10]. Spiritual care is a holistic approach that involves standing by individuals, providing them with support during crises arising from adverse life conditions or rapid emotional changes, offering counseling, and guiding them [9, 10, 11]. Spiritual care is an essential component of nursing care and it is crucial for nurses to provide personalized spiritual care [10, 12].

The optimal spiritual care to patients is directly related to nurses' knowledge and awareness of it. Delivering spiritual care effectively to patients leads to increased job satisfaction among nurses, fosters positive attitudes toward their profession, enhances their sense of professional value, and elevates their self-esteem [13]. In a study by Hamdan, et al. (2023), intensive care nurses had inadequate knowledge about the spiritual care of patients receiving palliative care and exhibited negative attitudes in their communication with them in the terminal stage [14]. In a systematic analysis study on nurses' spiritual care practices among palliative care patients [15], the spiritual care provided to patients was insufficient, the health staff lacked sufficient knowledge about spiritual care, and there were very few studies on nursing practices related to spiritual care in palliative care patients. It is of great importance that nurses, particularly in the provision of palliative care, can timely and accurately identify and address the spiritual care needs of patients, enabling both patients and their relatives to receive holistic nursing care. Therefore, it is crucial to determine nurses' knowledge of

spiritual care in palliative care and to enhance their knowledge.

Aim

This study aimed to assess the validity and reliability of the "Spirituality in Palliative Care Scale (SPCS)" among nurses in Türkiye.

Materials and methods

Type of Research

This study was methodologically conducted to assess the validity and reliability of the SPCS.

Population and Sample of the Study

The study population consisted of nurses working in internal medicine and surgical clinics at a training and research hospital located in the western part of Türkiye between November 15, 2022, and April 12, 2023. According to the literature, the sample size in scale validity and reliability studies should be five to 10 times the number of scale items [16]. Therefore, the SPCS should include a sample size of at least 120 nurses for its 12 items. The study included 128 nurses who volunteered to participate in the research. Two weeks later, retests were conducted with 67 nurses randomly selected from this sample. The data for the study were collected through face-to-face interviews with nurses during their weekday break times in the clinics they worked.

Data Collection Tools

The data for the study were collected using the nursing assessment form that was prepared by the researchers and included nurses' descriptive characteristics, as well as the SPCS. The data were collected in 10 minutes on average.

Nursing Assessment Form

The nursing assessment form, prepared by the researchers after reviewing the literature, consists of 14 questions regarding age, sex, marital status, education level, department worked, duration of work, educational status in spiritual care, and attitudes towards spiritual care [17, 18].

Spirituality in Palliative Care Scale (SPCS)

The scale, aiming to determine the spirituality of nurses in palliative care, was developed by Sukcharoen and Sakunpongin 2021 [18]. The original scale consists of three subscales and 12 items rated on a five-point Likert scale. The scale comprises three subscales: awareness and belief (four items), acceptance and understanding of others (four items), and spiritual nursing behaviors (four items). All items in the scale are positive and scored as completely wrong (1), partially wrong (2), unsure (3), partially correct (4), and completely correct (5). The lowest obtainable score was 12 and the highest was 60. Higher scores on the scale indicate higher spirituality. The reliability of the 12-item SPCS is 0.804 [18]. The Cronbach's alpha coefficient for the scale with eight items is 0.851, for the ability to be mindful subscale is 0.728, and for the acceptance and spiritual nursing behaviors subscale is 0.843.

Evaluation of the Data

The language equivalence of the scale was evaluated through translation-back translation and its content validity was assessed based on expert opinions using the Davis method. In the evaluation of the study data, the frequency distribution (number, percentage) was used for categorical variables and descriptive statistics (mean, standard deviation, minimum, maximum) for numerical variables. The construct validity of the scale was examined through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Prior to factor analysis, the sample adequacy was determined using the Kaiser-Meyer-Olkin Test (KMO) and the adequacy of the sample size was assessed using the Barlett's test. Internal consistency was determined using the Cronbach's alpha reliability coefficient, while the Intra Class Correlation (ICC) and Pearson Correlation tests were employed to determine the scale's consistency over time. The statistical significance level was set at $p<0.05$. The data were analyzed using the SPSS 23 and Amos 23 software.

Ethical Consideration of the Research

To conduct the study, ethical approval was obtained from the Ethics Committee of a public university (Medical and Health Sciences Ethics Committee-2, Date: July 6, 2022, Decision No: 95). Permission was obtained from the institution where the research was conducted. Written permission was obtained from the owners of the original scale via email. The participants were selected on a voluntary basis, provided with information about the research through an informed consent form, and included in the study if they agreed. The data storage was implemented based on the principle of confidentiality. They were informed that participation was entirely voluntary, personal information did not contain any name or sign for identity and information obtained was kept confidential, and they could withdraw from the research at any time. Every individual participating in the study was treated equally. The research was conducted in accordance with the principles of research and publication ethics of the World Medical Association's Declaration of Helsinki, adhering to the Ethical Principles for Medical Research Involving Human Subjects 2013/64 general assembly decisions.

Results

Sample characteristics (n=128)

The mean age of the participating nurses was 35.27±8.18 (min=25, max=50). Of the nurses, 84.4% were female, 60.2% were married, 93.8% lived in urban areas, 85.9% were graduates, 35.2% had been working for 16 years or more, and the average duration of employment was 13.98±9.64 years (min=1, max=31). Of the nurses, 48.4% worked in internal clinics, 36.8% in intensive care, and 14.8% in surgical clinics. Among the participants, 96.1% defined themselves as spiritual and 96.1% reported not receiving any training/course on spiritual care. In addition, 92.2% believed that nurses should provide spiritual care to patients/individuals, 91.4% acknowledged the impact of spiritual care on patients' recovery, 56.3% were undecided about feeling competent in providing spiritual care. Among them, 89.1% did not make a nursing diagnosis related to spiritual care to their patients, 92.2% provided palliative care to their patients, and 86.7% expressed a desire to receive training on spiritual care.

Language and Content Validity

In the adaptation process of the scale to Turkish, a language validity study was first conducted. For this, the back-translation method, the most commonly used and accepted way, was benefited [18]. In this method, first, the scale was translated from English to Turkish by three independent English language experts proficient in both languages. The translations were then merged into a single form by the researchers in the most appropriate manner. The suitability of the expressions to Turkish was evaluated by a Turkish language expert. This form was subsequently translated from Turkish to English by another independent English language expert. To check whether there was any change in meaning between the back-translation and the original scale items, they were sent to the authors via email. The content validity of the scale was determined using the technique developed by Davis (1992). With Davis technique, experts rate each item on a four-point scale as: a) appropriate, b) should be revised slightly, c) should be revised significantly, and d) not appropriate. By dividing the number of experts who selected options (a) and (b) by the total number of experts, the content validity index (CVI) for the item is obtained [19]. To determine the content validity of the scale items, 10 nursing faculty members were consulted. Considering the opinions of the experts, the content validity indices of the scale items ranged between 0.88 and 1.00. Items rated as (c) and (d) were revised with the most appropriate expressions based on expert opinions. After the revisions, a pilot study involving 10 nurses was conducted to assess the openness, comprehensibility, and clarity of the expressions of the scale items. No changes were made to the scale items since the nurses stated that they were understandable after the implementation. The nurses included in the pilot study were not included in the sample of the study.

Construct Validity

To determine the construct validity of the SPCS, EFA and subsequently CFA were conducted. For the three-factor scale, EFA was used employing the principal component analysis extraction method. The Varimax rotation method, one of the most commonly used techniques, was employed to ensure maximum variance of the factors. Items with factor loadings above 0.50 were retained. In the original structure of the SPCS, the fourth item of the awareness and belief subscale, the second item of the acceptance and understanding of others subscale, and the first and fourth items of the spiritual nursing behaviors subscale were removed due to factor loadings below 0.50 or significant loadings on multiple factors. As a result of the factor analysis, the number of items in the scale decreased from 12 to eight. These eight items gathered in two factors based on the results of content validity, with all factor loadings exceeding 0.50. The eight-item, two-factor scale yielded a KMO value of 0.842. The Bartlett's test of sphericity yielded significant results, indicating high correlations among the variables and suitability for applying factor analysis ($\chi 2$: 454.634, df: 28, $p<0.001$) (**Table - 1**). The total variance explanatory value of the acceptance and spiritual nursing behaviors subscale was 35.010%, that of the ability to be mindful subscale was 30.783%, and that of the Spirituality in Palliative Care Scale was 65.792%. The factor loadings of the scale items ranged from 0.636 to 0.852 (**Table - 2**).

Table 1: Kaiser Meyer Olkin and Bartlett Sphericity test results.

Kasiyer Meyer Olkin		0.842
Bartlett Sphericity Testi	$\chi 2$	454.634
	SD	28
	p	**0.000**

Abbreviations: SD, Standard Deviation, $\chi 2$= Chi-Square

Table - 2: Factor loadings of SPCS the Spirituality in Palliative Care Scale (n=128).

Spirituality in Palliative Care Scale	**Items**	**Factor loading**	**Self-value**	**Variance explanation value**
Acceptance and spiritual nursing behaviors	Item 8	0.787	2.801	35.010
	Item 7	0.762		
	Item 5	0.729		
	Item 4	0.713		
	Item 6	0.679		
Ability to be mindful	Item 2	0.852	2.463	30.783
	Item 1	0.823		
Total	Item 3	0.636		65.792

Abbreviations: SPCS: Spirituality in Palliative Care Scale

According to AFA, the scale consists of two factors including eight items. CFA was conducted based on the data collected. The values obtained for the SPCS are presented in Table- 3. Upon examining the fit indices of the scale, the values are as follows: $\chi 2/df=1.728$, GFI=0.949, TLI=0.954, IFI=0.971, CFI=0.970, RMSEA=0.076, and SRMR=0.062, indicating good fit. Considering the overall fit indices, the SPCS is determined as an acceptable scale (**Table - 3**). The path diagram obtained after DFA is given in **Figure - 1**. In the path diagram, the factor loadings of the items in the scale range from 0.46 to 0.89. In the final stage, fit indices were examined for the two-dimensional first-order DFA model. According to the findings, the

SPCS, consisting of eight items and a 2-factor structure, exhibits good fit in general (**Table - 3**).

Reliability Study

Reliability analysis of the scale relied on Cronbach's alpha coefficient, item-total correlation values, and ICC analysis for test-retest reliability. The Cronbach's alpha coefficient, one of the most commonly used criteria for assessing internal consistency, was used to evaluate the reliability of the scale. Calculation was made for the scales, measuring the Cronbach's alpha value. These values were usually above the acceptable threshold of 0.70 [20]. **Table - 4** shows the item-total score correlation coefficients of the scale items.

Table- 3: Goodness of fit indices and acceptable range of values.

Indexes	Good Fit	Acceptable Fit	Results
χ2/df	0≤χ2/df≤3	3≤χ2/df≤4	1.728
GFI	0.95≤GFI≤1	0.90≤GFI≤0.95	0.949
TLI	0.95≤NNFI ≤1	0.90≤NNFI ≤0.95	0.954
CFI	0.95≤CFI≤1	0.90≤CFI≤0.95	0.970
IFI	0.95≤IFI≤1	0.90≤IFI≤0.95	0.971
RMSEA	0≤RMSEA≤0.05	0.05≤RMSEA≤0.08	0.076
SRMR	0≤SRMR≤0.08	0.05≤SRMR≤0.10	0.062

Abbreviation: χ2= Chi-Square fit test, df= Degrees of Freedom, GFI= goodness of fit index, CFI= comparative fit index, IFI=Incremental Fit Index, RMSEA= root mean square error of approximation., SRMR= Root Mean Square Residual, TLI: Tucker Lewis Index

Table- 4: The Spirituality in Palliative Care Scale and sub-dimensional reliabilities.

	Sub-dimensional	Items	Item-total correlation	When the substance is removed Cronbach's alfa	Cronbach's alfa	
The spirituality in palliative care scale	Ability to be mindful	Item 1	0.607	0.831	0.728	0.851
		Item 2	0.483	0.845		
		Item 3	0.446	0.849		
	Acceptance and spiritual nursing behaviors	Item 4	0.797	0.807	0.843	
		Item 5	0.745	0.815		
		Item 6	0.701	0.821		
		Item 7	0.488	0.852		
		Item 8	0.521	0.843		

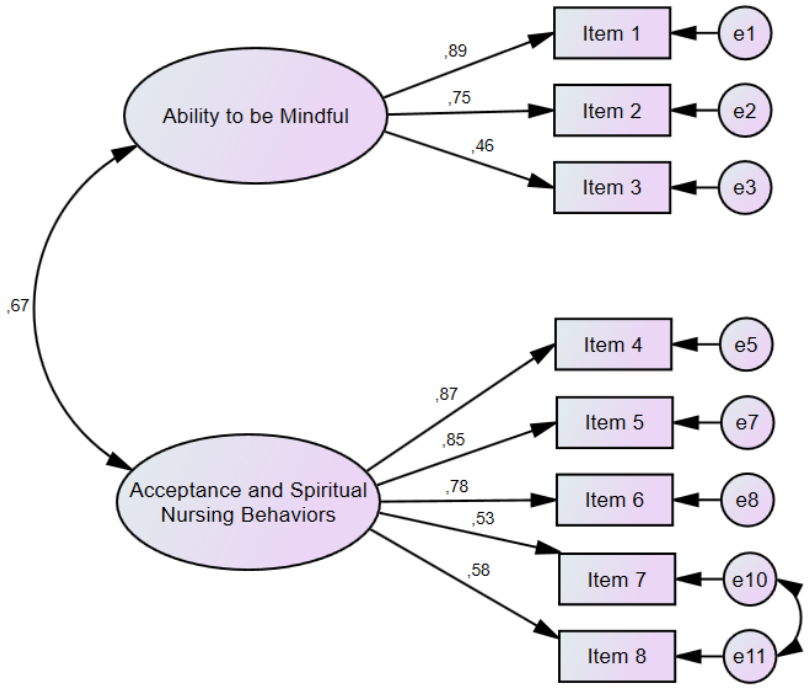
r: Pearson correlation coefficient, *: p<0.05

Table- 5: Examining the relationship between the scale and sub-dimensions.

		Ability to be mindful	Acceptance and spiritual nursing behaviors	Spirituality in palliative care scale
Ability to be mindful	r	1	0531	0.777
	p		**0.000***	**0.000***
Acceptance and spiritual nursing behaviors	r		1	0.946
	p			**0.000***
Spirituality in palliative care scale	r			1
	p			

*: p<0.05; r: Pearson correlation coefficient,

Figure 1: CFA Model.



In the item analysis conducted, it was decided not to remove any items from the scale as the removal of any item did not significantly change the Cronbach's alpha value. The Cronbach's alpha coefficient for the scale with eight items was found to be 0.851, for the ability to be mindful subscale was 0.728, and for the acceptance and spiritual nursing behaviors subscale was 0.843. The scale's test-retest reliability was assessed using the test-retest method. In the study, the same test was repeated with 67 nurses two weeks after the first test. To investigate whether there was a significant correlation between the test and retest, the test-retest results of the scale and its subscales were examined using ICC analysis. The results indicated the followings: ability to be mindful (ICC=0.798, $p<0.001$), acceptance and spiritual nursing behaviors (ICC=0.882, $p<0.001$), and SPCS (ICC=0.865, $p<0.001$). There was a significant positive correlation between the SPCS and its subscales ($p<0.05$) (**Table - 5**).

Discussion

The first step in the adaption of the scale is language adaptation. During scale adaptation, efforts are made to minimize differences and ensure meaningfulness in the translated language. To test the language adaptation of the scale, unilateral translation, translation-back translation, and group translation methods are used, with the translation-back translation method being often preferred due to its cost-effectiveness [20, 21]. During the language adaptation of the SPCS, the most commonly used method worldwide, the translation-back translation method, was benefited. In the translation-back translation method, the scale was first translated from English to Turkish by three English language experts. After these translations were edited, a common form was obtained. Subsequently, the scale was back-translated by a different English language expert. The back-translated English scale was compared to the original English scale and both were found to be consistent. Thus, the language adaptation of the Turkish scale was ensured. Content validity is conducted to determine whether the measurement tool as a whole and the items in the scale adequately measure the concept intended both quantitatively and qualitatively [22]. In this study, 10 faculty members from the nursing field

were consulted to test the content validity of the scale. The CVI of the scale items ranged from 0.88 to 1.00. Davis (1992) accepted 0.80 as the criterion for CVI [23]. The content validity values showed that the scale is quantitatively and qualitatively adequate in measuring nurses' spirituality in palliative care. To determine the clarity of the scale items and the readability of the statements, a pilot study should be conducted with a group that has similar characteristics to the main sample [24]. The pilot study of the scale was conducted with a group of 10 nurses who met the criteria for the sample. No changes were necessary for the pilot study; thus, it was finalized.

The evaluation of construct validity is crucial in scale adaptation studies. Construct validity indicates the capability of the tool to measure the relevant concept. One of the most commonly used approaches for assessing construct validity is factor analysis. Factor analysis has two main purposes: reducing the number of variables and categorizing the variables [22]. As a result of the EFA, in the original structure of the SPCS, the fourth item of the awareness and belief subscale, the second item of the acceptance and understanding of others subscale, and the first and fourth items of the spiritual nursing behaviors subscale were removed due to factor loadings below 0.50 or significant loadings on multiple factors. As a result of the factor analysis, the number of items in the scale decreased from 12 to eight. Following the examination of content validity, these eight items gathered in two factors, with all factor loadings exceeding 0.50 and explaining 65.792% of the variance. In the literature, factor loadings above 0.30 and variance explained around 40-60% are considered adequate [24]. Therefore, the factor loadings and variance adequately measure the relevant concept or construct.

To assess whether the data are suitable for factor analysis, the KMO test and Bartlett's test are recommended. The KMO test is conducted to assess sampling adequacy. The KMO value is interpreted as follows: 'fair' for a score of 0.50-0.70, 'good' for 0.70-0.80, 'great' for 0.80-0.90, and 'perfect' above 0.90.[25] Bartlett's test is performed to evaluate whether the data are normally distributed, whose value should be $p<0.05$ [26]. In light of this information, data were collected from 128 nurses for the factor analysis of the eight-item SPCS with two subscales. The KMO value was found to be 0.842, indicating a 'very good' sample size for factor analysis and demonstrating that the data were homogeneously distributed. The Bartlett's test value was $\chi2=454.634$, SD=28, $p<0.001$, indicating adequate correlations among the items to conduct factor analysis. Based on these findings, the sample size for the research is adequate for factor analysis and the scale is suitable for factor analysis.

CFA was conducted to confirm whether the scale items align with the factors identified in the EFA. Upon examining the fit indices obtained from CFA, $\chi2/df$, GFI, TLI, IFI, CFI, RMSEA, and SRMR values reflected good fit [26]. Considering the overall fit indices, the SPCS is determined as an acceptable scale.

To assess the internal consistency of the scale, the Cronbach's alpha coefficient is considered the most suitable measure, reflecting the overall reliability structure. As this value approaches +1, the reliability is deemed high [27]. In the present study, the Cronbach's alpha coefficient was 0.851 for the eight-item scale, 0.728 for the ability to be mindful subscale, and 0.843 for the acceptance and spiritual nursing behaviors subscale. The original scale had a Cronbach's alpha coefficient of 0.804 [18]. When the Cronbach's alpha coefficient is between 0.70 and 0.90, the scale's reliability level is considered high, indicating that it can be used with confidence [28]. The satisfactory reliability results for SPCS indicate that the scale is reliable.

The test-retest method involves retesting the scale at either long or short intervals, depending on the situation [16, 23]. It is recommended that the time interval for retesting be long enough to

prevent significant recalls but short enough not to cause substantial changes in the measured characteristics (2-6 weeks) [27]. In test-retest applications, retesting can be administered to 25% to 50% of the individuals participating in the previous measurement to calculate the reliability coefficient [16, 28]. In this consideration, two weeks after the data collection process, test-retest was administered to 52.3% of the sample to evaluate time invariance of the adapted scale and the ICC value was calculated. The ICC values for the subscale scores ranged from 0.798 to 0.882, indicating that the scale's time invariance is at a good level. In the literature, ICC is interpreted as follows: <0.40 weak, 0.40-0.59 moderate, 0.60-0.74 good, and 0.75-1.00 excellent [29].

Conclusion

The Turkish version of the SPCS, consisting of two subscales and eight items, meets acceptable validity and reliability criteria. The study findings indicate that the scale meets the criteria for language, scope, construct validity, and reliability, demonstrating its ease of use by nurses in evaluating spirituality in palliative care settings. The SPCS can be used with large sample groups in further research aimed at determining the spiritual status of nurses in palliative care to enhance its generalizability. In addition, testing the scale with care giving midwives, nurse assistants, midwifery, and nursing students in clinical settings is also recommended.

Limitations

This study has some limitations. The Turkish validity and reliability study of the SPCS was conducted on nurses working in a single center. This constitutes a significant limitation for the study. To enhance generalizability, further testing involving nurses from multiple cities and private hospitals is necessary. The measurement tool was adapted for use with nurses and it may exhibit different characteristics in other professional groups such as midwives.

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Referee Evaluation Process: Externally peer reviewed.

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