Journal of Religion and Health (2023) 62:3563–3578
https://doi.org/10.1007/s10943-023-01878-5

ORIGINAL PAPER

Psychometric Properties of the Turkish Version of the Nurse Spiritual Therapeutic Scale for Oncology Patients and Caregivers

Remziye Semerci[1] · Aslı Akdeniz Kudubeş[2] · Özlem Uğur[3] · Yağmur Yaşa[3]

Accepted: 17 July 2023 / Published online: 29 July 2023

Abstract

This study evaluated the Turkish version of the Nurse Spiritual Therapeutic Scale for assessing oncology patients' and caregivers' needs. It involved 200 participants from July 2022 to May 2023. The scale demonstrated high validity (content validity index = 0.97) and good internal consistency (Cronbach's alpha = 0.879). Factor analysis revealed a 20-item single-factor structure with satisfactory representation (factor loadings: 0.29–0.89). Item-total score correlations indicated moderate to strong relationships (0.236–0.761). The model showed a good fit (goodness-of-fit indices > 0.90). The Turkish version of the scale is valid and reliable for assessing oncology patients' and caregivers' spiritual care needs.

Keywords Nurse Spiritual Therapeutic Scale · Oncology · Nursing · Patients · Caregivers

✉ Remziye Semerci
remziyesemerci@gmail.com

Aslı Akdeniz Kudubeş
asliakdeniz@hotmail.com

Özlem Uğur
ozlem.ugur@deu.edu.tr

Yağmur Yaşa
yagmuryasa5@gmail.com

[1] Department of Child Health and Disease Nursing, School of Nursing, Koç University, Istanbul, Turkey

[2] Department of Child Health and Disease Nursing, Faculty of Health Science, Bilecik Şeyh Edebali University, Bilecik, Türkiye

[3] Department of Oncology Nursing, Faculty of Nursing, Dokuz Eylül University, İzmir, Türkiye

Introduction

Spirituality is widely acknowledged as a significant component that can contribute to an individual's overall quality of life (Panzini et al., 2017). The World Health Organization defines the quality of life as encompassing an individual's aspirations, expectations, standards, and priorities, which are deeply rooted in their cultural and value systems (Mohebbifar et al., 2015). Quality of life encompasses various dimensions, including social and cognitive functioning, as well as physical and mental well-being (Mohebbifar et al., 2015). On the other hand, spirituality can be understood as an inherent search for meaning and purpose in life, encompassing subjective experiences and emotions related to a transcendent realm of existence (Wang & Lin, 2016). It is considered an essential and complementary aspect of an individual's existence (Xie et al., 2019). By providing a source of strength and hope, spirituality enhances an individual's quality of life (Chiang et al., 2016).

Various factors influence the quality of life and spiritual needs of individuals, with chronic diseases playing a prominent role in this regard (Koenig & Al Zaben, 2021). Among the prevalent chronic diseases worldwide, cancer stands out as a significant concern (Mohebbifar et al., 2015). Notably, advancements in medical interventions and technology have led to improved survival rates among cancer patients (Delgado-Guay et al., 2013; Kim & Yi, 2015). Despite these advances, patients still encounter a wide range of physical, emotional, social, and spiritual challenges that can persist over extended periods (Dündar & Aslan, 2022; Kim & Yi, 2015). The impact of cancer extends beyond the patients themselves, affecting their family members in multiple dimensions, encompassing physical, social, and psychological aspects (Delgado-Guay et al., 2013; Kim & Yi, 2015). The prolonged duration of cancer treatments intensifies the emotional and financial burdens faced by family members, thereby amplifying the caregiving responsibilities and potentially leading to diminished physical and mental well-being among caregivers (Bektas & Ozer, 2009; Burnette et al., 2017; Delgado-Guay et al., 2013).

Caregivers of cancer patients share similar spiritual needs with the patients themselves, including the desire for love, being loved, and a sense of belonging (Vespa et al., 2018). When these needs of caregivers are not adequately addressed, they become vulnerable to depression and a decline in overall psychological well-being (Vespa et al., 2018). Moreover, these challenges exacerbate the physical and psychological issues faced by caregivers, resulting in heightened feelings of grief, anxiety, stress, depression, and low self-esteem. Consequently, both the quality of life for caregivers and patients may suffer (Bektas & Ozer, 2009; Kudubeş & Bektaş, 2017; Vespa et al., 2018). In order to enhance the quality of care for oncology patients and their caregivers, it is crucial to acknowledge and address their spiritual needs, as it can significantly improve both the care provided and the patient's overall quality of life (Akbari et al., 2023; Vespa et al., 2018). Therefore, it is imperative to adopt a family-centered care approach and recognize the importance of meeting the spiritual needs of both patients and caregivers in healthcare services.

Objective

Previous literature indicates that prior scales which were validated or developed in Turkey were aimed at evaluating the thoughts and competence of nurses regarding spiritual care (Aslan et al., 2020; Daghan et al., 2019; Keskinoğlu et al., 2019). Aslan et al., (2020) conducted the reliability and validity of the Nurse Spiritual Care Therapeutics Scale (NSCTS) for nurses; there is no scale for determining expectations of oncology patients and their families regarding spiritual care provided by nurses (Aslan et al., 2020). It is very important to determine the expectations of patients and their relatives from nurses for therapeutic spiritual care, as well as to determine the views of nurses, to increase their well-being and to provide good nursing care. However, it should be noted that currently there is a lack of a validated scale in Turkey specifically designed to assess the expectations of oncology patients and their families regarding spiritual care provided by nurses. Thus, the primary objective of this study is to assess the psychometric properties of the "Nurse Spiritual Therapeutics Scale" in the Turkish context, focusing on its application for oncology patients and caregivers.

Methods

Setting, Sample and Design

The study adopted a methodological research design to evaluate the psychometric properties of the Nurse Spiritual Therapeutics Scale within the Turkish context, with a particular focus on oncology patients and their caregivers. The study adhered to the guidelines outlined in the "Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)" to ensure the robustness and transparency of the research methodology (Von Elm et al., 2007). Additionaly, Koenig and Al Zaben's (2021) recommendations related to psychometric validation and translation of religious and spiritual measures were implemented in this study.

This research was carried out at Dokuz Eylül University Hospital, involving a sample of pediatric and adult oncology patients and their caregivers who were receiving medical care during the period between July 2022 and May 2023.

The study included a population of oncology patients and their caregivers who were receiving treatment at Dokuz Eylül University Hospital between July 2022 and May 2023. When adapting scales, it is recommended to have a sample size that is 5–10 times larger than the number of scale items (Anthoine et al., 2014). Considering that the scale utilized in this study comprised 20 items, a sample size of 200 individuals was deemed appropriate.

The inclusion criteria for the study were as follows: individuals who are literate, proficient in the Turkish language, without any auditory or visual impairments, willing to participate in the study, and either receiving oncology treatment or serving as caregivers for oncology patients.

The exclusion criteria for the study were as follows: being illiteracy, having auditory impairments, having visual impairments, lack of willingness to participate and not receiving oncology treatment or serving as caregivers.

Data Collection Tools

Information Form

The questionnaire utilized in this study was developed by the researchers following an extensive literature review (Moosavi et al., 2021; Semerci et al., 2021). The questionnaire encompassed socio-demographic characteristics of the participants, including age, gender, family type, family income level, educational level, employment status, and duration of cancer diagnosis. It consisted of a total of seven questions.

Nurse Spiritual Therapeutics Scale

The scale used in this study was originally developed by Taylor and Mamier in 2005. It comprises 20 items that assess the level of desire among oncology patients or caregivers to receive spiritual care or therapeutic interventions from nurses. The scale utilizes a four-point Likert-type format, with response options ranging from 1 (strongly disagree) to 4 (strongly agree). The total scores on the scale range from 20 to 80, with higher scores indicating a greater desire for spiritual care or therapeutic interventions from nurses among oncology patients or caregivers. The scale does not include any items with reverse scoring. The internal consistency of the scale, as measured by Cronbach's alpha, is 0.96, indicating a high level of internal reliability.

Validity and Reliability Stages

Translation and Cultural Adaptation

The first stage involved the translation of the original scale into Turkish. This translation was typically performed by bilingual experts who have a good understanding of the original language and the target language. The translated version was then back-translated to ensure accuracy and consistency with the original scale. Cultural adaptation was performed to ensure the scale's relevance and appropriateness for the Turkish population. Firstly, permission for the Turkish validation and reliability study was obtained, and the scale was translated into Turkish by three academicians who are familiar with the terminology of the scale and have experience in data collection related to spiritual care among oncology patients and caregivers (Çapık et al., 2018; World Health Organization, 2009). The research team reviewed and revised the three different translations to create a common translation text.

Content Validity

It is recommended to seek the opinions of at least 3 experts for content validity (Çapık et al., 2018). In this study, 10 academicians specialized in spiritual care were consulted for content validity. The content validity of the scale was assessed by a panel of experts, such as researchers and clinicians, who evaluated the relevance and comprehensiveness of the scale items. They reviewed the items and provided feedback on the clarity, representativeness, and appropriateness of each item for assessing spiritual therapeutics in the context of oncology care. Their input helps refine and modify the scale, if necessary. The content validity of the scale was assessed using the Polit and Beck Content Validity Index (CVI) (Polit and Beck, 2007). Experts were asked to rate both the translated Turkish version of the scale and the original version on a scale of 1–4, with 1 indicating that the item is not suitable, 2 indicating that it requires extensive revision, 3 indicating that it requires minor revision, and 4 indicating that it is highly suitable. Separate analyses were conducted for both scale content and item content. Items that received scores of 1 or 2 were identified for modification based on the experts' feedback (Çapık et al., 2018).

Pilot-Test

Following expert opinions, the Turkish version of the scale underwent a back-translation process in accordance with the World Health Organization's 'Process of Adapting Measurement Instruments' guideline (2009). Two linguists proficient in both Turkish and English independently translated the Turkish version back into English. The original scale and the translated English version were then evaluated by the researchers, and necessary adjustments will be made to prepare the scale for pilot testing.

To conduct the pilot study, a group of 30 oncology patients or their caregivers receiving care at the Hacettepe University Oncology Hospital Day Treatment Unit were selected. These participants had similar characteristics to those included in the main study but were not part of the actual research sample, as recommended by Çapık et al., 2018. The scale was administered to these individuals, and their feedback regarding the comprehensibility of each item was collected. Based on their input, any necessary corrections or modifications to the scale were made. This iterative process continued until the scale was finalized and deemed ready for implementation.

Data Collection

The data were collected through face-to-face interviews conducted with oncology patients and their caregivers receiving care at Hacettepe University Oncology Hospital Day Treatment Unit. The researchers visited the outpatient clinic on

weekdays between 09:00–17:00 and collected data from voluntary participants. The data collection process took an average of 5–10 min per participant.

Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics 25.0 (Chicago, IL) package and IBM SPSS Amos version 25.0 (IBM Corp, 2017). Descriptive statistics, including percentages and mean scores, were computed to summarize the data. The significance level for data analysis was set at 0.05. The statistical methods employed in the study are depicted in Fig. 1.

Results

It was determined that the mean age of the patients participating in the study was 58.11 ± 14.75, 55.2% were female and 44.8% were male. It was determined that 79% of the individuals were in the nuclear family type, 47.5% of them had an equal income-expenditure level, and 89.5% of them did not work in any job. In addition, it was determined that 46.4% were primary school graduates, 11% were secondary school graduates, 24.9% were high school graduates, and 17.7% were university graduates. It was determined that the diagnosis period of the patients participating in the study was 108.79 ± 21.38 months.

It was determined that the mean age of the caregivers participating in the study was 62.26 ± 12.99, 68.4% were female and 31.6% were male. It was determined that 89.5% of the individuals were in the nuclear family type, 52.6% of them had an equal income-expenditure level, and 89.5% of them did not work in any job. In addition, it was determined that 63.2% of them were primary school graduates, 5.3%

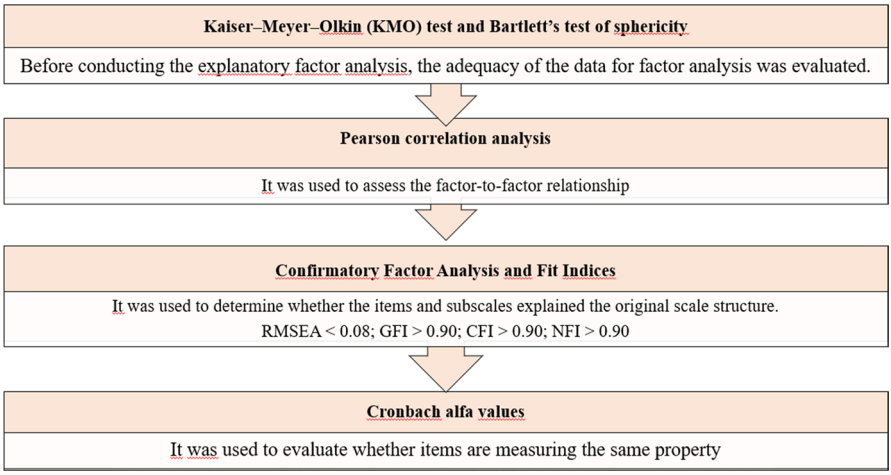

Fig. 1 Statistical analysis

Table 1 Frequency of responses to scale across all items

Items	Patients/family caregivers (FCG)	Strongly disagree		Disagree		Agree		Strongly agree	
		n	%	*n*	%	*n*	%	*n*	%
Item 1	Patients	13	7.2	15	8.3	39	21.5	114	63.0
	FCG	1	5.3	2	10.5	4	21.1	12	63.2
Item 2	Patients	26	14.4	24	13.3	64	35.4	67	37.0
	FCG	3	15.8	2	10.5	8	42.1	6	31.6
Item 3	Patients	30	16.6	39	21.5	54	29.8	58	32.0
	FCG	3	15.8	5	26.3	5	26.3	6	31.6
Item 4	Patients	82	45.3	60	33.1	25	13.8	14	7.7
	FCG	9	47.4	6	31.6	3	15.8	1	5.3
Item 5	Patients	67	37.0	27	14.9	53	29.3	34	18.8
	FCG	7	36.8	7	36.8	4	21.1	1	5.3
Item 6	Patients	81	44.8	38	21.0	37	20.4	25	13.8
	FCG	8	42.1	2	10.5	8	42.1	1	5.3
Item 7	Patients	112	61.9	42	23.2	16	8.8	11	6.1
	FCG	13	68.4	4	21.1	2	10.5	2	10.5
Item 8	Patients	42	23.2	23	12.7	68	37.6	48	26.5
	FCG	7	36.8	3	15.8	7	36.8	2	10.5
Item 9	Patients	37	20.4	13	7.2	73	40.3	58	32.0
	FCG	6	31.6	3	15.8	8	42.1	2	10.5
Item 10	Patients	73	40.3	31	17.1	57	31.5	20	11.0
	FCG	9	47.4	2	10.5	8	42.1	–	–
Item 11	Patients	130	71.8	25	13.8	20	11.0	6	3.3
	FCG	14	73.7	3	15.8	2	10.5	–	–
Item 12	Patients	129	71.3	28	15.5	19	10.5	5	2.8
	FCG	14	73.7	3	15.8	2	10.5	–	–
Item 13	Patients	125	69.1	34	18.8	15	8.3	7	3.9
	FCG	17	89.5	2	10.5	–	–	–	–
Item 14	Patients	139	76.8	29	16.0	7	3.9	6	3.3
	FCG	17	89.5	2	10.5	–	–	–	–
Item 15	Patients	145	80.1	31	17.1	3	1.7	2	1.1
	FCG	17	89.5	2	10.5	–	–	–	–
Item 16	Patients	142	78.5	30	16.6	7	3.9	2	1.1
	FCG	17	89.5	2	10.5	–	–	–	–
Item 17	Patients	136	75.1	28	15.5	13	7.2	4	2.2
	FCG	17	89.5	2	10.5	–	–	–	–
Item 18	Patients	134	74.0	25	13.8	16	8.8	6	3.3
	FCG	17	89.5	2	10.5	–	–	–	–
Item 19	Patients	147	81.2	30	16.6	2	1.1	2	1.1
	FCG	17	89.5	2	10.5	–	–	–	–
Item 20	Patients	139	76.8	27	14.9	10	5.5	5	2.8
	FCG	17	89.5	2	10.5	–	–	–	–

were secondary school graduates, 15.8% were high school graduates, and 15.8% were university graduates.

The frequency and percentages of responses to all questions concerning nurses giving spiritual care were analyzed to arrive at this conclusion (Table 1). Although responses from both patients and caregivers on each of these questions ranged from 1 to 4, the majority of means and medians fell between 2 and 3, indicating a disagreement. The NSTS mean of 37.71 (standard deviation = 10.56; range = 20–77; kurtosis = 1.03, Standard error = 0.34) also reveals a 'middle of the road' demand from patients for spiritual care from nurses.

Results of Validity Analysis

A panel of ten experts, specializing in oncology nursing, pediatric nursing, and psychiatric nursing, was consulted to assess the content validity of the scale. The level of agreement among the experts varied from 0.88 to 0.99 for each item, as indicated by the item-level Content Validity Index (I-CVI). The overall content validity of the

Table 2 Results of explanatory factor analysis

Items	Factor loads
1. Help me to have quiet times or space	0.280
2. Listen to me talk about my spiritual concerns	0.290
3. Listen to me talk about my spiritual strengths	0.299
4. Teach me about ways to draw or write about my spirituality	0.602
5. Listen to the stories of my life	0.526
6. Tell me about spiritual resources nearby that I can use	0.525
7. Help me to think about my dreams	0.713
8. Bring me humorous things	0.400
9. Help me laugh (e.g., share a joke)	0.429
10. Help me, if I needed, with my religious practices	0.319
11. Arrange for my minister or a spiritual mentor to visit me	0.844
12. Arrange for a chaplain to visit me	0.833
13. Offer to talk with me about meditation or…	0.776
14. Offer to talk with me about the difficulties of praying when sick	0.874
15. Offer to pray privately for me (i.e., nurse prays for me later while alone)	0.850
16. Offer to pray with me	0.896
17. Ask me about my spiritual beliefs	0.762
18. Ask me about what gives my life meaning	0.843
19. Ask me about how I relate to God (or whatever is that Ultimate Other)	0.821
20. Ask me about religious practices	0.778
Explained variance (%)	44.581%
KMO coefficient	0.847
Bartlett test	3797.794 ($p < 0.001$)

KMO Kaiser–Meyer–Olkin coefficient

scale, measured by the scale-level Content Validity Index (S-CVI), was found to be 0.97.

The results of the exploratory factor analysis (EFA) are presented in Table 2. The Kaiser–Meyer–Olkin (KMO) coefficient, which measures the sampling adequacy, was determined to be 0.847. Additionally, the Bartlett test, which evaluates the sufficiency of the correlation between variables, yielded a significant result ($\chi^2 = 3797.794$, $p < 0.001$), confirming the suitability of the data for factor analysis. The factor loadings for the scale ranged from 0.280 to 0.896, as shown in Table 2.

Confirmatory factor analysis (CFA) was conducted to further validate the factor structure of the scale. The results of the CFA, presented in Table 3 and Fig. 2, indicated that the scale confirmed its intended structure.

Results of Reliability Analysis

The overall reliability of the scale was assessed using Cronbach's alpha coefficient, which yielded a value of 0.879. This indicates a high level of internal consistency among the scale items. Furthermore, the item-total score correlations, ranging from 0.236 to 0.761 (Table 4), demonstrated moderate to strong relationships between the individual items and the overall scale score.

Discussion

In this study, Turkish psychometric properties of the Nurse Spiritual Therapeutics Scale for oncology patients and their caregivers were evaluated. All of the items' means and medians fell between the ranges of 2 and 3, which indicates considerable disagreement, despite the fact that participant responses to the questions about spiritual care treatments offered by nurses varied greatly. This suggests that the two groups on either side of the Likert scale are in contrast. In other words, more than 50% of individuals would not like spiritual care treatments with a mean of 2. The results also indicate that participants' feelings toward receiving spiritual care from nurses were either indifferent or ambivalent.

To assess the content validity of the researcher's scale and determine the extent to which its elements represent the intended phenomena, expert opinions were obtained. Content validity refers to the degree to which a measurement tool accurately measures the construct it intends to evaluate. In this study, the content validity index (CVI) was used as a measure of content validity. The recommended threshold for the CVI value is at least 80% for the overall scale, as suggested by

Table 3 Model fit indices of the scale

	X^2	*df*[a]	X^2/df	RMSEA[b]	GFI[c]	CFI[d]	IFI[e]	RFI[f]	NFI[g]	TLI[h]
Two factor model	228.448	84	2.719	0.079	0.90	0.90	0.90	0.90	0.90	0.90

[a]Degree of free; [b]Root mean square error of approximation; [c]Goodness of fit index; [d]Comparative fit index; [e]Incremental fit index; [f]Relative fit index; [g]Normed fit index; [h]TLI: Tucker Lewis index

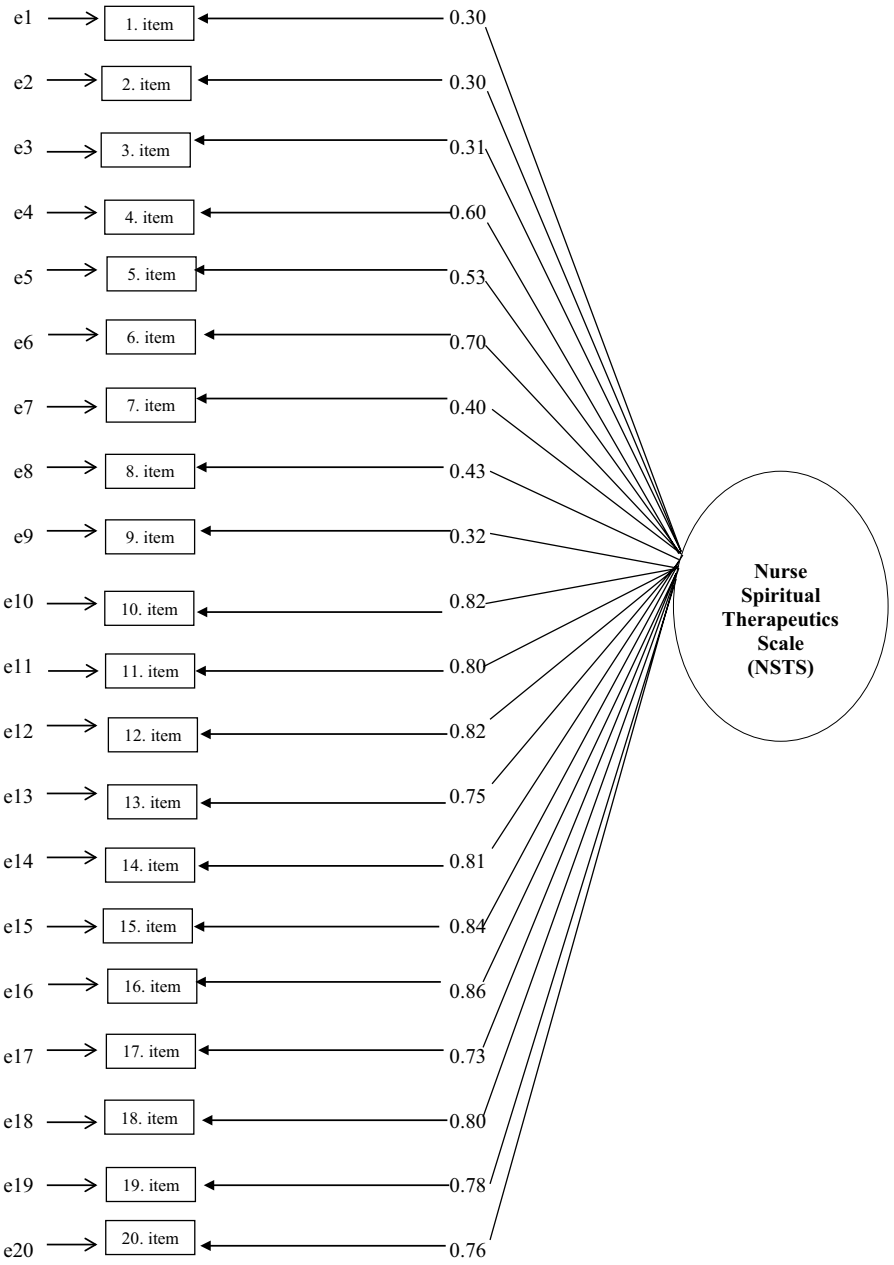

Fig. 2 Results of confirmatory factor analysis

Table 4 Results of the item-total-score correlation

Items	Mean	SD	Item-total score correlation*
1	3.41	0.91	0.24
2	2.95	1.03	0.51
3	2.77	1.07	0.50
4	1.84	0.93	0.66
5	2.26	1.03	0.64
6	2.04	1.09	0.60
7	1.57	0.87	0.66
8	2.63	1.10	0.56
9	2.79	1.09	0.58
10	2.27	1.02	0.48
11	1.45	0.80	0.76
12	1.44	0.78	0.75
13	1.44	0.78	0.72
14	1.31	0.68	0.73
15	1.22	0.51	0.70
16	1.26	0.56	0.75
17	1.34	0.69	0.63
18	1.39	0.76	0.72
19	1.21	0.49	0.67
20	1.31	0.66	0.64

SD Standard deviation; *$p<0.001$

Almanasreh et al. (2019), Polit et al. (2007), and Vakili and Jahangiri (2018). In our study, expert opinions were obtained from ten professionals in oncology nursing, pediatric nursing, and psychiatric nursing. The I-CVI values, which represent the agreement among experts for each item, ranged from 0.88 to 0.99, indicating a high level of content validity for individual items. Moreover, the S-CVI, which represents the agreement among experts for the entire scale, was found to be 0.97, further supporting the scale's content validity.

These findings suggest that the scale's content is appropriate, clear, and aligned with the assessment items. Unfortunately, a direct comparison with the original scale's CVI data was not possible since this information was not available in the original study conducted by Taylor and Mamier (2005). Nonetheless, the high I-CVI values for individual items and the satisfactory S-CVI value for the entire scale provide strong evidence for the content validity of the researcher's scale in the context of this study.

Exploratory factor analysis (EFA) is a widely used statistical technique that plays a crucial role in developing and validating conceptual frameworks and measures. Watkins (2018) highlights the significance of EFA in this context. In our study, the factor structure of the scale was examined using two statistical

tests: the Bartlett test of sphericity and the Kaiser–Meyer–Olkin (KMO) test. The KMO test evaluates the appropriateness of the sample for conducting factor analysis (Watkins, 2018). KMO values range from 0 to 1, with higher values indicating better suitability for factor analysis. According to the KMO criterion, a coefficient between 0.80 and 0.89 is considered fairly good.

In our study, the KMO coefficient was found to be 0.847, indicating a fairly good level of suitability for factor analysis. Therefore, the available data were appropriate for further analysis. The Bartlett test of sphericity examines the adequacy of correlations between variables (Finch, 2019). It tests the null hypothesis that the correlation matrix is an identity matrix, indicating no relationship between the variables.

In our study, the hypothesis of comparable correlation matrix was rejected at a significance level of $p < 0.001$. This rejection implies that there is a relationship between the items and the data are suitable for factor analysis. Furthermore, the explained variance ratio, which is a crucial measure of construct validity, should ideally be above 40% in multidimensional scales (Boateng et al., 2018; Finch, 2019). A higher explained variance ratio indicates stronger construct validity.

In our study, the variance explained exceeded 40%, suggesting strong construct validity for the scale. Unfortunately, a direct comparison with the EFA results of the original scale study conducted by Taylor and Mamier (2005) was not possible, as those results were not provided. Nonetheless, based on the favorable KMO coefficient, the significant Bartlett test result, and the satisfactory explained variance ratio, it can be concluded that the EFA results of the researcher's scale support its construct validity in the context of this study.

CFA is a statistical technique used to assess the reliability and validity of the factor structure obtained from EFA (Brown, 2015). In our study, CFA was employed to validate the factor structure derived from EFA. The results of the CFA indicated that the scale items formed a single factor. To evaluate the fit of the model, various fit indices were utilized, including χ^2, χ^2/sd, GFI, RMSEA, NFI, and CFI (Brown, 2015). The fit indices obtained in this study were as follows: $\chi^2/\text{sd} = 2.719$, RMSEA = 0.079, GFI = 0.90, CFI = 0.90, and NFI = 0.90. The χ^2/sd value of 2.719 indicates a reasonable fit between the model and the observed data. The RMSEA value of 0.079 falls below the recommended threshold of 0.08, suggesting that the model fits the data acceptably well. Additionally, the GFI, CFI, and NFI values of 0.90 and above indicate satisfactory fit indices (Brown, 2015).

These results suggest that the model is statistically reliable and valid in representing the factor structure of the scale. Unfortunately, a direct comparison with the CFA results of the original scale study conducted by Taylor and Mamier (2005) was not possible due to the unavailability of those results. However, based on the favorable fit indices obtained in our study, it can be concluded that the CFA results support the reliability and validity of the scale's factor structure in the context of this study.

Reliability is a crucial aspect of a scale's measurement properties, as it determines the consistency and stability of the scale's outcomes over time and across different circumstances (Tavakol & Dennick, 2011). In this study, the reliability of the scale was assessed using Cronbach's alpha coefficient. The Cronbach's alpha coefficient for the total score of the scale was found to be 0.879. This value indicates a

high level of internal consistency among the items of the scale (Tavakol & Dennick, 2011).

It suggests that the scale items are reliable and consistently measure the construct being evaluated. Since the Cronbach's alpha coefficient was not reported in the original scale study conducted by Taylor and Mamier (2005), a direct comparison with their study is not possible. However, the high value of Cronbach's alpha in this study supports the reliability and consistency of the scale's items in measuring the intended construct. The findings indicate that the scale used in this study is reliable, suggesting that it can be employed in similar circumstances and over different periods to yield consistent results. Researchers can have confidence in the scale's ability to measure the phenomenon under investigation consistently and uniformly.

In order to assess the extent to which the scale items effectively measure the variable being evaluated, conducting an item-total score analysis is recommended (Johnson and Christensen, 2014). This analysis examines how the scores obtained from individual scale items relate to the overall score of the scale. In this study, an item-total score analysis was performed, and the results indicated that the item-total score correlations ranged from 0.236 to 0.761. These values indicate a moderate to strong positive relationship between the individual items and the overall score of the scale.

It suggests that the scale items are indeed measuring the intended variable and contribute to the overall assessment. The obtained correlations, which were higher than the acceptable threshold of 0.20 (Johnson and Christensen, 2014), indicate that the scale items are meaningfully related to the construct being assessed. This strengthens the evidence for the scale's validity and suggests that it is effectively capturing the phenomenon of interest. However, it should be noted that the original scale study by Taylor and Mamier (2005) did not provide Pearson's correlation analysis results, making a direct comparison with their study impossible. Nonetheless, the positive relationships observed in this study provide support for the meaningfulness of the scale items and their association with the overall scale score.

Limitations

It should be noted that this study had a limited sample size and was conducted in a specific healthcare setting, which may limit the generalizability of the findings. Additionally, due to the unavailability of certain data in the original scale study, direct comparisons between the current study and the original study were not possible. Further research with larger and more diverse samples is warranted to validate and generalize the findings of this study.

Conclusion

In this study, the Turkish psychometric properties of the Nurse Spiritual Therapeutics Scale for oncology patients and their caregivers were evaluated. The findings suggest that participants' feelings toward receiving spiritual care from nurses

were generally characterized by indifference or ambivalence. Its utilization enables healthcare professionals, particularly nurses, to accurately measure and evaluate the specific spiritual care needs and preferences of individuals within the oncology setting. By incorporating this scale into practice, nurses can deliver tailored and meaningful spiritual care that aligns with the expectations of oncology patients and their caregivers.

Implications for Practice

The Nurse Spiritual Therapeutics Scale can serve as a valuable tool for assessing the desire for spiritual care among oncology patients and their caregivers. Healthcare professionals, particularly nurses, can utilize this scale to identify and address the spiritual needs of patients and caregivers, thereby enhancing the quality of care provided. The findings highlight the importance of incorporating spiritual care into the healthcare practice, as it can positively impact the well-being and satisfaction of patients and caregivers. Healthcare institutions should consider integrating spiritual care services and training programs for healthcare providers to better meet the spiritual needs of oncology patients and their caregivers.

Acknowledgements There was no conflict of interest in this study. There was no financial gain or other interest in a product or distributor of a product. There was no kind of association, consultation, stock ownership or other interest or patent-licensing arrangement. No funding was required for this research study. The authors are grateful to the oncology patients and their care giver who spent their time and shared their experiences during the study.

Author Contributions RS was involved in Conceptualization; data curation; investigation; methodology; project administration; resources; software; supervision; visualization; roles/writing—original draft; writing—review and editing. AAK contributed to conceptualization; data curation; formal analysis; acquisition; investigation; supervision; validation; visualization; roles/writing—original draft; writing—review and editing. ÖU was involved in conceptualization; data curation; investigation; methodology; supervision; validation; visualization; roles/writing—original draft; writing—review and editing. YY contributed to conceptualization; data curation; investigation; methodology; supervision; validation; visualization; roles/writing—original draft; writing—review and editing.

Funding The authors have no funding to disclose.

Data Availability The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of Interest The authors have no conflicts of interest to disclose.

References

Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in Social and Administrative Pharmacy, 15*(2), 214–221. https://doi.org/10.1016/j.sapharm.2018.03.066

Akbari, O., Dehghan, M., & Tirgari, B. (2023). Development and validation of the nurses' spiritual sensitivity scale in Southeastern Iran. *Journal of Religion and Health*. https://doi.org/10.1007/s10943-023-01805-8

Anthoine, E., Moret, L., Regnault, A., Sébille, V., & Hardouin, J. B. (2014). Sample size used to validate a scale: A review of publications on newly-developed patient reported outcomes measures. *Health and Quality of Life Outcomes, 12*(1), 1–10. https://doi.org/10.1186/s12955-014-0176-2

Aslan, H., Aktürk, Ü., & Erci, B. (2020). Validity and reliability of the Turkish version of the nurse spiritual care therapeutics scale. *Palliative & Supportive Care, 18*(6), 707–712. https://doi.org/10.1017/S1478951520000267

Bektas, H. A., & Ozer, Z. C. (2009). Reliability and validity of the caregiver quality of life index-cancer (CQOLC) scale in Turkish cancer caregivers. *Journal of Clinical Nursing, 18*(21), 3003–3012. https://doi.org/10.1111/j.1365-2702.2009.02915.x

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health, 6*, 149. https://doi.org/10.3389/fpubh.2018.00149

Brown, T. A. (2015). *Confirmatory factor analysis for applied research (2nd Edn)*. New York: The Guilford Press.

Burnette, D., Duci, V., & Dhembo, E. (2017). Psychological distress, social support, and quality of life among cancer caregivers in Albania. *Psycho-Oncology, 26*(6), 779–786. https://doi.org/10.1002/pon.4081

Çapik, C., Gözüm, S., & Aksayan, S. (2018). Intercultural scale adaptation stages, language and culture adaptation: Updated guideline. *Florence Nightingale Journal of Nursing*, *26*(3):199–210. https://doi.org/10.26650/FNJN397481

Chiang, Y.-C., Lee, H.-C., Chu, T.-L., Han, C.-Y., & Hsiao, Y. C. (2016). The impact of nurses' spiritual health on their attitudes toward spiritual care, professional commitment, and caring. *Nursing Outlook, 64*(3), 215–224. https://doi.org/10.1016/j.outlook.2015.11.012

Daghan, S., Kalkim, A., & Sağkal Midilli, T. (2019). Psychometric evaluation of the Turkish form of the spiritual care competence scale. *Journal of Religion and Health, 58*, 14–27. https://doi.org/10.1007/s10943-018-0594-2

Delgado-Guay, M. O., Parsons, H. A., Hui, D., Cruz, M. G. D. l., Thorney, S., & Bruera, E. (2013). Spirituality, religiosity, and spiritual pain among caregivers of patients with advanced cancer. *American Journal of Hospice and Palliative Medicine®*, *30*(5), 455–461. https://doi.org/10.1177/1049909112454580

Dündar, M., & Aslan, H. (2022). Association between nurses' spirituality and frequency of spiritual therapeutic care in Turkey. *Journal of Religion and Health, 61*(3), 1922–1935. https://doi.org/10.1007/s10943-022-01499-4

Finch, H. W. (2019). *Exploratory factor analysis*. Beverly Hills: SAGE Publications.

Jonhson, B., & Christensen, L. (2014). *Educational research: quantitative, qualitative, and mixed approaches*. Beverly Hills: SAGE Publication.

Keskinoğlu, M.Ş., Ekşi, F., & Ekşi, H. (2019). Adapting the spirituality index of well-being. *Journal of Turkish Studies*, *14*(3), 723–737. https://doi.org/10.29228/TurkishStudies.22717

Kim, H., & Yi, M. (2015). Unmet needs and quality of life of family caregivers of cancer patients in South Korea. *Asia-Pacific Journal of Oncology Nursing, 2*(3), 152–159. https://doi.org/10.4103/2347-5625.158019

Kudubeş, A. A., & Bektaş, M. (2017). Effect of fatigue on quality of life in pediatric oncology patients. *The Journal of Pediatric Research, 4*(3), 96–102. https://doi.org/10.4274/jpr.63634

Koenig, H. G., & Al Zaben, F. (2021). Psychometric validation and translation of religious and spiritual measures. *Journal of Religion and Health, 60*(5), 3467–3483. https://doi.org/10.1007/s10943-021-01373-9

Mohebbifar, R., Pakpour, A. H., Nahvijou, A., & Sadeghi, A. (2015). Relationship between spiritual health and quality of life in patients with cancer. *Asian Pacific Journal of Cancer Prevention, 16*(16), 7321–7326. https://doi.org/10.7314/APJCP.2015.16.16.7321

Moosavi, S., Rohani, C., Borhani, F., & Akbari, M. E. (2021). Spiritual care experiences by cancer patients, their family caregivers and healthcare team members in oncology practice settings: A qualitative study. *Explore, 17*(5), 430–437. https://doi.org/10.1016/j.explore.2020.08.015

Panzini, R. G., Mosqueiro, B. P., Zimpel, R. R., Bandeira, D. R., Rocha, N. S., & Fleck, M. P. (2017). Quality-of-life and spirituality. *International Review of Psychiatry, 29*(3), 263–282. https://doi.org/10.1080/09540261.2017.1285553

Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30*(4), 459–467. https://doi.org/10.1002/nur.20199

Semercï, R., Uysal, N., Bağçïvan, G., Doğan, N., Kostak, M. A., Tayaz, E., et al. (2021). Oncology nurses' spiritual care competence and perspective about spiritual care services. *Turkish Journal of Oncology, 36*(2), 222–230. https://doi.org/10.5505/tjo.2021.2682

Taylor, E. J., & Mamier, I. (2005). Spiritual care nursing: What cancer patients and family caregivers want. *Journal of Advanced Nursing, 49*(3), 260–267. https://doi.org/10.1111/j.1365-2648.2004.03285.x

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53–55. https://doi.org/10.5116/IJME.4DFB.8DFD

Vakili, M. M., & Jahangiri, N. (2018). Content validity and reliability of the measurement tools in educational, behavioral, and health sciences research. *Journal of Medical Education Development*, *10*(28), 106–118. https://doi.org/10.29252/EDCJ.10.28.106

Vespa, A., Spatuzzi, R., Merico, F., et al. (2018). Spiritual well-being associated with personality traits and quality of life in family caregivers of cancer patients. *Supportive Care in Cancer, 26*, 2633–2640. https://doi.org/10.1007/s00520-018-4107-3

Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. (2007). The strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies. *The Lancet, 370*(9596), 1453–1457. https://doi.org/10.1016/S0140-6736(07)61602-X

Wang, Y.-C., & Lin, C. C. (2016). Spiritual well-being may reduce the negative impacts of cancer symptoms on the quality of life and the desire for hastened death in terminally ill cancer patients. *Cancer Nursing, 39*(4), 43–50. https://doi.org/10.1097/NCC.0000000000000298

Watkins, M. W. (2018). Exploratory factor analysis: A guide to best practice. *Journal of Black Psychology, 44*(3), 219–246. https://doi.org/10.1177/0095798418771807

World Health Organization (WHO). (2009). Process of translation and adaptation of instruments. Retrieved from http://www.who.int/substance_abuse/research_tools/translation/en/

Xie, H., Taylor, E. J., Li, M., Wang, Y., & Liang, T. (2019). Nurse spiritual therapeutics scale: Psychometric evaluation among cancer patients. *Journal of Clinical Nursing, 28*(5–6), 939–946. https://doi.org/10.1111/jocn.14711