

Original Article

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Abstract

Objective. This study was conducted to evaluate the validity and reliability of the “Nurse Spiritual Care Therapeutics Scale” in Turkish nurses.

Method. This study was a psychometric design. A convenience sample of 249 nurses working at the Malatya Training Research Hospital completed a structured questionnaire including demographic characteristics and the Nurse Spiritual Care Therapeutics Scale (NSCTS) between August and October 2018. Principal components analysis, internal consistency reliability, and Cronbach’s α were used to measure the psychometric properties of the items of the scale.

Results. In the evaluation of construct validity, identified one factor with eigenvalues greater than 1 explained 50.83% of the total variance. The Cronbach’s α value of the scale is 0.86.

Significance of results. The present study provides evidence of NSCTS’s validity, reliability, and acceptability. The scale can be used by Turkish nurses. This scale should be further evaluated with a larger sample in different regions in Turkey and various populations. The scale has potential applications for use both in research and as a screening tool in clinical settings.

Introduction

According to the holistic approach, which is the most comprehensive approach in providing healthcare services, the individual is a whole with physical, mental, emotional, socio-cultural, and spiritual dimensions. Each of these dimensions is related to each other dimension (Baldacchino, 2006; Daştan and Buzlu, 2010). Spirituality has generally described the feeling of connectedness with a higher power or consciousness and the search for answers to questions about the meaning of life, of illness, and other sufferings, of death, and the purpose of life itself (Ahmad and Khan, 2016). Spirituality gives people hope, power, relaxation, and peace to cope with their problems (Gümüş et al., 2014).

Spiritual care is defined as “the care confirming the unique value of the individuals based on unconditional love and being under the effect of their spiritual and cultural beliefs, physical conditions, emotions, thoughts, and cultural connections” (Ramezani et al., 2014). In a study carried out by Ercan and colleagues, it was found that 53.8% of nurses have given spiritual care in Turkey (Ercan et al., 2017). Among the applications for the spiritual care of patients in the clinic, 32.0% of the nurses stated that they meet the needs of the patients and produce solutions to their problems (observation, listening, talking, considering individual differences, trying to understand, friendly approach, and trust relationship). In addition, it was found that 9.8% of the nurses enabled the patients to practice their religious beliefs (prayers, reading the Qur’an) and 8.2% helped them to communicate with their relatives (Ercan et al., 2017).

It has been determined that nursing psychosocial care interventions such as listening to the concerns of the individuals and empathizing with them during painful and troublesome periods or during sudden crises (such as illness, surgery, and disability) decrease the patients’ pain and anxiety (Carpenter et al., 2008; De Brito Pedrão and Beresin, 2010), help them to cope with their stress, and increase their satisfaction (Ramezani et al., 2014). Spiritual practices have effective power in coping with stress, healing illnesses, relieving depression, and reducing mortality (Cetinkaya et al., 2007). In addition, spiritual care improved nurses’ spiritual awareness, gave meaning and purpose for their professional lives, and increased job satisfaction (Ramezani et al., 2014).

In hospitals, nurses are the only healthcare professionals who are consistently present with patients ought to have a professional level of knowledge, skills, and approaches on spiritual care (Cetinkaya et al., 2007). Evaluating the patient in this context and correctly determining the specific requirements in this field are important for the nurse to plan appropriate interventions (Kostak, 2007; Eğlence and Simsek, 2014). However, it was determined in studies conducted concerning spiritual care on nurses that the awareness level about the subject was not sufficient, the spiritual needs of the patients were ignored, and nurses tended to see spirituality as religious requirements at Turkey (Khorshid and Arslan Gürol, 2006; Yılmaz and

Okuy, 2009; Kostak et al., 2010; Kavak et al., 2014). In the research done in Turkey, 50.7% of nurses provided spiritual care; however, this rate was 28.1% in another study (Kostak, 2007; Kavak et al., 2014). In a previous study, it was determined that most nurses did not ask about the spiritual needs of their patients (91%) and did not provide any spiritual interventions (88.8%). When asked to explain the reason for this, 46.9% said that they did not know what kind of intervention to provide, and 45.2% said that they did not need to provide spiritual care because it was not part of their role (Demirbag and Ozkan, 2018). It was shown that the most important reasons for not providing spiritual care were the lack of education and training in this field (Baldacchino, 2006; Wong et al., 2008; McSherry and Jamieson, 2011; Delgado, 2015).

For the last 30 years, hundreds of studies have provided evidence, indicating that spirituality and religiousness are effective in coping with and adapting to disease (Koenig et al., 2012). When considering this evidence, healthcare providers have accepted that it is important to assess and support the spirituality of patients (American Association of Colleges of Nursing, 2008). In order to determine the possible therapeutic effect of the spiritual care provided by the nurses, measurement tools are needed to evaluate the delivery of spiritual care. In the literature, it is seen that many assessment tools have been developed to capture the spirituality and spiritual care in nursing (Sessanna et al., 2011; Draper, 2012; Garssen et al., 2017); however, few allow for the measurement of actual spiritual care provided. Therefore, this tool evaluates how often this type of care can be integrated into nursing practice before examining the effects of spiritual care interventions provided by the nurse (Mamier and Taylor, 2015).

In Turkey, which is a Muslim community, there is no scale to evaluate spiritual care given by the nurse. It is thought that this study will make an important contribution to the literature in order to reveal the differences in the understanding of spiritual care within the health system of nurses with different beliefs.

Materials and methods

This study was a psychometric design. The study was conducted between August and October 2018 on nurses working at the Malatya Training Research Hospital in Malatya, Turkey.

Participants

The participants of the study were composed of the nurses working at the hospital. The sample of the study consisted of Turkish nurses. The sample size of 249 nurses was estimated using power analysis based on an error probability of 0.05 with two-tailed and a power of 0.95, and assumed effect size was 0.30 for the sample size estimation. The participants were selected through the convenience sampling in the study.

Process of cultural adaptation

The cultural adaptation process of the scale was conducted into three stages: (1) language validity, (2) content validity, and (3) pilot application.

Language validity

First, the scale was translated from English to Turkish, and the Turkish version was then translated into English by three independent linguists. These translators were academic members in

the Department of English Language and Literature at a university. The Turkish text representing each item in the best way was prepared, and three translations were examined. The three translated versions were compared by the researchers, and a consensus was reached on scale items. Then, the scale was translated back into English by independent linguists. The back-translation of the scale was observed to be consistent with the original NSCTS. The translation phase had the purpose of checking for discrepancies between the content and meaning of the original and translated versions. All of the versions were evaluated by the authors, and a final version was formed.

Content validity

After the language adaptation of the scale, the content validity was then conducted with the expert opinion method to evaluate its validity. Content validity is the degree to which an instrument has an appropriate sample of items for the construct being measured and is an important procedure in scale development. Content validity index (CVI) is the most widely used index in quantitative evaluation.

Content validity consists of obtaining expert opinions in order to determine whether the items in the measurement tool are suitable for the purpose of the measurement and whether or not they represent the field to be measured (Yurdağül, 2005). For this purpose, expert opinions were obtained from six academicians (three from Public Health Nursing had conducted research on validity and reliability and spirituality, one from Fundamentals of Nursing had conducted research on Spiritual Care, and two from Psychiatric Nursing had conducted research on psychosocial and spiritual nursing care). The scale was sent to them via e-mail. They were informed about the measurements and concepts involved. The experts were asked to evaluate whether or not each scale item measured nursing spiritual care and the understandability of the scale items on a scale rated between 1 and 4. On this scale, "not suitable" is 1 point, "needs to be made suitable" is 2 points, "suitable but requires small changes" is 3 points, and "very suitable" is 4 points.

Nurse Spiritual Care Therapeutics Scale

The purpose of the scale developed by Mamier and Taylor (2015) was to measure the frequency of nursing care practices aimed at supporting the spirituality of patients. The scale enables nurses to measure the frequency of spiritual care provided in the workplace. To accommodate nurse respondents with various work schedules (e.g., full-time and part-time, 8- or 12-h shifts), NSCTS items were introduced by the stem, "During the past 72 (or 80) hours of providing *patient* care, how often have you: ...". The nurses were instructed to interpret the word "patient" in a broad way, that is, to refer to any person who received nursing spiritual care (for example, family members and patients). The instrument enables fulltime working nurses to report the frequencies of spiritual care therapeutics provided over the previous two weeks at work, whereas part-time nurses reported on the three to four weeks prior to taking the survey. Nurses were asked to interpret the word "patient" broadly, meaning the nurse was referring to any person receiving spiritual care (e.g. patient and family members). The scale is a five-point Likert-type scale consisting of 17 items and a single factor. The scale is 1 (never = 0 times), 2 (rarely = 1–2 times), 3 (occasionally = 3–6 times), 4 (often = 7–11 times), and 5 (very often ≥ 12 times). Scores on the scale range from 17 to 85. High scores signify that nursing spiritual care support is frequent. Low scores correspond to low levels of nursing spiritual

care provided. Mamier and Taylor found Cronbach's α coefficient of the scale to be 0.93–0.94 (Mamier and Taylor, 2015).

Pilot application

After expert opinion, the final version of the scale, five teen nurses were applied pretest. The intelligibility of the scale items was assessed by pretesting them to 15 nurses who were not present in the sample but had similar characteristics to those to whom the measurement was to be performed. In the pilot application, it was evaluated whether there was an incomprehensible item. At the end of the application, each item was found to be understandable. Each item of the scale was found intelligible and no change has been made in the pilot application. It takes approximately 5–10 min to complete the scale.

Construct validity

In order to determine whether or not the size of the sample before factor analysis is suitable for factor analysis, Kaiser–Meyer–Olkin (KMO) and Bartlett's tests should be performed. It has been reported in the literature that factor analysis can be continued if the value of KMO is greater than 0.50. The KMO test that values lower than 0.50 cannot be accepted, values between 0.50 and 0.60 are bad, values between 0.60 and 0.70 are weak, values between 0.70 and 0.80 are moderate, values between 0.80 and 0.90 are good, and values greater than 0.90 are very good (Şencan, 2005) was conducted. Bartlett's test gives the chi-square statistical value, and factors may occur in case of having a significance value lower than 0.05 (Şencan, 2005).

Internal consistency and homogeneity

Cronbach's α was calculated to determine internal consistency. Polit and Beck (2004) indicated that internal consistency may be a necessary condition for homogeneity or unidimensionality of a scale, and Cronbach's α should be 0.70 or higher. Polit and Beck (2004) recommend using the inter-item correlation as a criterion for internal consistency. This should be 0.15 or higher for independent and dependent samples of 30 and above. They pointed out that this average value could be biased, and all individual inter-item correlations should be 0.15–0.50. Unidimensionality can only be assured if all individual inter-item correlations are clustered closely around the mean inter-item correlation.

Data Collection Tools: The data were collected with the "Descriptive Information Form" including information about the nurses and the "Nurse Spiritual Care Therapeutics Scale (NSCTS)" using the face-to-face interview method.

Descriptive Information Form: The information form prepared by the researchers included five questions about the socio-demographic characteristics of the nurses.

Nurse Spiritual Care Therapeutics Scale

The scale developed by Mamier and Taylor (2015) is a five-point Likert-type scale consisting of 17 items and a single factor. The scores obtained from the scale range between 17 and 85 points. High scores indicate that nursing spiritual care support is frequent. Mamier and Taylor found the Cronbach's α coefficient of the scale to be 0.93–0.94 (Mamier and Taylor, 2015).

Data collection

Nurses who agreed to participate were included in the study. Two hundred and forty-nine nurses were asked to participate in the study and to complete the NSCTS during working time at the hospital in 2018. The researchers visited the hospital on five working days every week and conducted interviews with the nurses. Thus, recruitment continued in this way until the required sample size for the study was achieved.

The data were collected by the researchers from the nurses working weekday daytime shifts. After making the necessary explanations in the nurses' room, the questionnaires were given to the nurses, and they were asked to fill them out individually. The researcher left the nurses alone in the nurses' room and was asked to complete the data collection forms without being affected. Fifty-six nurses who were on leave (seizure leave or annual leave) could not be reached during the data collection period. Thirty-six nurses who did not want to participate in the study and who did not complete the data collection form were excluded from the study.

Data analysis

In statistical analysis of the study, Pearson's product-moment correlation was used to determine correlation scores of items — total scale. Kendall's W analysis was performed for content validity. Direct oblimin rotation and factor analysis were conducted for construct validity. Before conducting the factor analysis of the scale, KMO and Bartlett's test was calculated to evaluate whether the sample was large enough to perform a satisfactory factor analysis. Cronbach's α coefficient was calculated for internal consistency.

Ethical consideration

Permission was obtained with necessary correspondences on the Turkish adaptation of the NSCTS developed by Mamier and Taylor. In order to conduct the study, the ethical approval (2018/15-29) was obtained from İnönü University Health Sciences Scientific Research and Publication Ethics Committee. For the research, the permission of the institution was obtained from Malatya Training and Research Hospital Chief Physician. The researchers informed the participants about study purpose, including their research activities, their potential benefits and risks, and their right to refuse to answer any questions, and to terminate their participation in the interview at any time. The researcher received participants' written or oral (based on their preference) consent before administering the questionnaire.

Results

The mean age of the participating in the study was 36.8 ± 7.3 years, and their working duration in the profession was 15.0 ± 8.3 years. About 19.2% of the nurses were female, 78.7% of them were married, and 56.6% had a bachelor's degree (Table 1).

The translated scale, consisting of 17 items, was judged by the expert panel on relevance and phrasing of the instrument items. The agreement level of the expert opinions was examined with Kendall's W analysis. It was seen that the scores given by the experts were not statistically different (Kendall $W = 0.204$; $p = 0.433$), and there was an agreement between the experts. As a result of this evaluation, the panel did not suggest any modification or changes in the scale and approved the item clarity and

Table 1. The socio-demographic characteristics of the nurses

	Number	%
Demographic variables ($X \pm SD$)		
Age	36.8 \pm 7.3	
Working duration	15.0 \pm 8.3	
Gender		
Female	227	91.2
Male	22	8.8
Marital status		
Married	196	78.7
Single	46	18.5
Divorced	7	2.8
Educational level		
Health vocational high school	24	9.6
Associate's degree	69	27.7
Bachelor's degree	141	56.6
Master's degree	15	6.0

X, mean; SD, standard deviation.

Table 2. KMO measure and Bartlett's test results

Test	Results	
KMO measure of sampling adequacy	0.859	$p = 0.000$
Bartlett's test	Approx. Chi-square	1,878.42
	d.f.	136
	Significance	0.000

content validity. The CVI was computed as 0.83. Thus, content validity of the scale was provided for the Turkish population.

KMO and Bartlett's test was tested to assess whether the number of samples before factor analysis was conducted. In the present study, the KMO value is 0.859 and the Bartlett's test of sphericity is significant at the value of $p = 0.000$. According to this result, the sample was sufficient and appropriate for factor analysis (Table 2).

In the study, direct oblimin rotation was used in order to combine the items with high factors. As a result of the direct oblimin rotation, four factors having an eigenvalue of >1 were determined in the first analysis. However, when we checked the factor loading of the items, it was clear that all 17 items had the highest load on the first factor, and the factor loading of the other factors was poor. Therefore, the scale was considered as a single factor, and it was seen to be consistent with the original scale. A single-factor structure with an eigenvalue of 5.86 and a total variance of 50.83% was obtained from factor analysis by principle axis factoring and direct oblimin rotation. The factor loading was neither too low nor too high (0.40–0.78) (Table 3).

The Cronbach's α coefficient is frequently used to test the reliability of Likert-type scales and is a measure of the internal consistency of measurement tool. In this study, the scale had an overall coefficient alpha of 0.86. It was observed that the internal consistency of NSCTS was high (Table 3). Table 3 shows the

Table 3. Factor loadings, Cronbach's α values and item total score correlations of the NSCTS.

Scale items	Corrected item – total correlation	Cronbach's α if item deleted	Factor loadings
Item 1	0.37	0.85	0.51
Item 2	0.41	0.85	0.52
Item 3	0.61	0.84	0.60
Item 4	0.63	0.84	0.66
Item 5	0.64	0.84	0.70
Item 6	0.66	0.84	0.59
Item 7	0.75	0.84	0.71
Item 8	0.37	0.85	0.40
Item 9	0.41	0.85	0.56
Item 10	0.18	0.86	0.52
Item 11	0.24	0.86	0.63
Item 12	0.31	0.89	0.50
Item 13	0.66	0.84	0.60
Item 14	0.58	0.84	0.69
Item 15	0.59	0.84	0.78
Item 16	0.69	0.84	0.75
Item 17	0.51	0.85	0.46
Cronbach's $\alpha = 0.86$			
Total variance = 50.83%			

item-total correlation results of the scale. The item-total correlations of the scale ranged from 0.18 to 0.75, and these values were good in terms of distinguishing (Table 3).

Statistical evaluation of demographic characteristics with mean scores of the NSCTS is shown in Table 4. It was found that the different between age, educational level, working duration, gender, and marital status with the NSCTS scores were not statistically significant ($p > 0.05$) (Table 4).

Discussion

The results of this study showed that the psychometric characteristics of the Turkish version of the NSCTS were promising. The Cronbach's α , range of individual inter-item correlations, and the homogeneity of the NSCT scale seemed to be sufficient.

The panel review regarding the content of Turkish version of the NSCTS indicated that there was no need to modify its translation and content. It was seen that there was a concordance between the experts. In line with expert opinions, it can be said that the scale is suitable for the purpose of measurement and represents the area to be measured. In that case, it is likely said that content validity of the instrument has been satisfactory.

In the present study, the KMO value is 0.85, indicating that the sample was large enough to perform a factor analysis for psychometric testing of the scale. Mamier and Taylor determined in their study that the KMO measure of sampling adequacy was robust at 0.943 and Bartlett's test of sphericity was significant, provided support for proceeding with factor analysis (Mamier and Taylor, 2015). Literature stated that the value of KMO 0.80–

Table 4. Comparison of the socio-demographic characteristics of the nurses and the mean score of NSCTS

Demographic variables	X ± SD	Test and significance
Gender		
Female	38.28 ± 12.2	MWU = 2144.0 <i>p</i> = 0.274
Male	41.77 ± 13.0	
Marital status		
Married	38.64 ± 12.3	$\chi^2 = 2.943$ <i>p</i> = 0.230
Single	37.34 ± 12.1	
Divorced	45.28 ± 10.5	
Educational level		
Health vocational high school	36.54 ± 13.3	$\chi^2 = 0.910$ <i>p</i> = 0.635
Associate's degree	37.62 ± 13.1	
Bachelor's degree	38.26 ± 11.2	
Master's degree	49.33 ± 12.3	
Age		
	<i>r</i> = 0.032	<i>p</i> = 0.614
	<i>p</i> = 0.614	
Working duration		
	<i>r</i> = 0.101	<i>p</i> = 0.111
	<i>p</i> = 0.111	

MWU, Mann-Whitney *U*-test; χ^2 , Kruskal-Wallis *H* test; X, mean; SD, standard deviation.

0.89 is very good, and it should be minimum 0.70 (Şencan, 2005; Büyüköztürk, 2012). It was very good in the present study, and the result was found to be suitable for the literature.

The factor analysis revealed one factor with an eigenvalue of 5.86, and the factor explained 50.83% of the variance. Mamier and Taylor reported that the original scale explained 49.5% of the total variance (Mamier and Taylor, 2015). It is stated that total variance explained by a scale must be minimum 30% for a scale to be acceptable (Büyüköztürk, 2012). In this study, total variance explained by the scale was adequate. Also, the scale items had adequate factor loadings (0.40 point). The acceptable minimum point is 0.40 for factor loading (Polit and Beck, 2004). Mamier and Taylor found that the factor loadings of the items were ranged from 0.41 to 0.84 (Mamier and Taylor, 2015). It is expressed in the classification made by Tabachnick and Fidell that if the factor loads are >0.71, then it is "perfect" (NSCTS 7, 15, and 16), if they are >0.63, then it is "very good" (NSCTS 4, 11, and 14), if they are >0.55, then it is "good" (NSCTS 3, 6, 9, 10, and 13), and if they are >0.45, then it is "appropriate" (NSCTS 1, 2, 12, and 17) (Tabachnick and Fidell, 2007). The finding of this study was similar to the original scale and literature.

The Cronbach's α reliability coefficient, which is used to determine the internal consistency of the scale, evaluates whether or not the items measure the same property and whether or not the items are relevant to the subject to be measured (Şencan, 2005). In the present study, Cronbach's α coefficient of the scale was 0.86 (0.84–0.89). Mamier and Taylor, who developed the scale, found the Cronbach's α coefficient of the scale to be 0.93 (Mamier and Taylor, 2015). It is seen that the study results are similar. Since no validity-reliability analysis of the NSCTS has been found in any other language, Cronbach's α has been discussed with similar scale results evaluating the spiritual care given

by nurses. In order to examine the frequency of spiritual care, Vance formed the Spiritual Care Practices Questionnaire (SCPQ) in 2001. The scale questions how often a nurse performs a spiritual assessment, diagnoses a spiritual distress, eases the therapeutic communication, and supports the patient spiritual practices. It was found that the internal reliability coefficients for both application and barrier subscales of the SCPQ scale were between 0.87 and 0.64 (Vance, 2001). In 2002, the Cronbach's α coefficient of the Spirituality and Spiritual Care Grading Scale developed by McSherry, Draper, and Kendrick was found as 0.64 (McSherry et al., 2002), the Turkish validity and reliability study of the same scale was conducted by Ergül and Temel, and its Cronbach's α coefficient was found as 0.76 (Ergül and Temel, 2007). In this study, it was found that Cronbach's α value is similar to other scale results evaluating spiritual care and provides a good level of reliability. In general, a Cronbach's α coefficient higher than 0.70 is seen to be sufficient in intercultural scale adaptation (Cook and Beckman, 2006).

In this study, item-total correlation values of the scale seemed to be sufficient (0.18–0.75). The literature suggests that the acceptable minimum point for individual inter-item correlations is 0.15 (Polit and Beck, 2004). Mamier and Taylor determined in their study that item-total correlation values varied between 0.40 and 0.80 (Mamier and Taylor, 2015). Although there is no specific standard on when the reliability would be considered as insufficient when the item total test correlation coefficient falls below a certain criterion, items whose values were 0.30 and higher are accepted as sufficient in the interpretation of the item total correlation (Esin, 2014). However, the literature suggests that the acceptable minimum point for individual inter-item correlations is 0.15 (Erefe, 2002; Polit and Beck, 2004). The higher correlation coefficient of item is qualification desired to be measured (Ercan and Kan, 2004; Büyüköztürk, 2012). Internal consistency and inter-item correlations were adequate in the current study.

In this study, age and working duration of the nurses had no different with their spiritual care frequency. In the research conducted by Mamier et al., similar were found (Mamier et al., 2019). Ercan et al. found that the nurses' age and working duration had no statistically significant correlation with their spiritual care perceptions (Ercan et al., 2017). The difference between gender, marital status, educational level, and mean scores of spiritual care scale was not statistically significant. Mamier and her colleagues found that there were no differences in spiritual care therapeutics between male and female (Mamier et al., 2019). Ercan et al. determined that gender, marital status, and educational level did not affect the spiritual care perceptions of the nurses (Ercan et al., 2017). When examining the results of the studies conducted in Turkey, it was observed that demographic variables did not affect spiritual care levels (Kostak et al., 2010; Kavak et al., 2014; Kavas and Kavas, 2015; Pour et al., 2017).

Study limitations

The insufficient number of male nurses is a limitation. Our study was conducted only with Muslim nurses, which poses a limitation. The results can be generalized to Muslim nurses in our country because all of the nurses participating in the study are Muslim, and there is no encounter with nurses belonging to a different religion. It is recommended that the reliability of our instrument be tested in individuals belonging to different religions.

Conclusions

The validity and reliability of the Turkish version of the NSCTS was confirmed in this sample of Turkish nurses. This scale can be used to determine how often nurses evaluate the spiritual care needs of their patients. The NSCTS, which is an assessment tool evaluating the spiritual care in the healthcare system, will assist to Turkish nurses, and it will make a significant contribution to the nursing literature. It may be recommended to evaluate the validity and reliability of the scale by applying it to larger sample groups.

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