Original Article

Development and validity and reliability study of a Turkish Psychosocial Care Competence Self-Assessment Scale

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Abstract

Objectives: The aim of the present study was to develop a valid and reliable Turkish self-assessment tool to measure the psychosocial competency of nurses working in general clinics.

Methods: The sample used for this methodological study consisted of 300 nurses working in the general clinics of Sivas Cumhuriyet University Health Services Practice and Research Hospital. A personal information form and the Psychosocial Care Competence Self-Assessment Scale were used to collect the data. IBM SPSS Statistics for Windows, Version 22.0 software (IBM Corp., Armonk, NY, USA) was used to perform the statistical analysis of the data.

Results: The content-scope validity and construct validity were created for the draft scale using items selected from the related literature. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed for construct validity. The reliability of the scale was evaluated using item, internal consistency, and test-retest analysis. The EFA results indicated that 4 factors explained 70.44% of the total variance. CFA revealed that the data set was an acceptable model with excellent fit. The internal consistency coefficient of the entire scale was 0.93 and that of the subscales was found to be 0.80–0.93.

Conclusion: A Turkish Psychosocial Care Competence Self-Assessment Scale for nurses was created with 18 valid and reliable items with 4 subscales: symptom identification, use of knowledge, intervention, and diagnosis.

Keywords: Competence; nurse; psychosocial care; reliability and validity; scale development; self-assessment.

What is presently known on this subject?

• Psychosocial care is an integral part of healthcare. However, there is a lack of valid and reliable measurement tools in Turkish to evaluate the psychosocial care competence of nurses working in general clinics.

What does this article add to the existing knowledge?

• The development of a valid and reliable psychosocial care competence self-evaluation instrument for Turkish nurses represents a contribution to training, practice, and the literature, and will facilitate greater knowledge of the application of psychosocial care.

What are the implications for practice?

• The addition of a new scale to measure psychosocial care competence could contribute to strengthening evaluation of this important component of nursing and improve patient care.

Human beings are multifaceted and complex in nature, and are therefore often challenged by obstacles and conflicts during the course of their lifelong development. Disease can be one of these important conflicts.[1] Each individual has subjective reactions to the disruptions caused by the symptoms, signs, and concomitant problems of a disease diagnosis. Emotional reactions, such as fear, anger, sadness, and grief, as well as behavioral reactions and their effects, such as concealment, isolation, and refusal of treatment are common.[2,3] These responses can create additional challenges for the patient, family, and the healthcare team. Psychosocial reactions to disease may reduce the physical and emotional resistance of the patients, and add to difficulty adapting to disease and complying with treatment, which could affect the emergence, course and severity of disease. The prevalence of psychiatric problems in the general population is approximately 15%, however, the percentage can be as much as 40% to 50% among

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hospitalized patients. Many of these psychiatric problems develop secondarily to medical illness.[4] This may result in a prolonged hospital stay, decreased quality of life, and increased mortality and morbidity rates.[2] A psychosocial evaluation of patients and the early provision of appropriate care could be very beneficial.

Psychosocial care refers to the provision of the appropriate psychological, social, cultural, and spiritual care for each individual.[5] Psychosocial care encompasses efforts to help people who are unable to cope with emotional changes caused by illness, existential crises that may affect general health, or psychiatric problems.[2] Effective psychosocial care can improve the quality of life of patients by reducing their physical symptoms, alleviating psychological distress, and may eliminate the need for hospital admission.[2,5,6]

Nurses encounter psychosocial crises and patient problems every day. They have an active role in managing both the physical health and possible psychosocial problems of patients.[2] The importance of providing holistic care to patients is taught to nursing students during undergraduate education. However, due to the inadequacies and various other issues related to training and the policies and functioning of the healthcare system, the psychosocial aspect of care and the psychosocial needs of the patients can be neglected in favor of the physical aspects of care, which are considered to be more of a priority. Physical problems can be more easily recognized and handled; it is more difficult to evaluate the psychosocial aspects of care and to identify and resolve problems.[7,8] While the importance of holistic nursing care is recognized, psychosocial aspects of care are often overlooked in practice. However, healthcare is a comprehensive entity; it comprises all biopsychosocial elements. It is important to determine the extent to which nurses perform psychosocial care in their daily practice and how they evaluate their competency to provide psychosocial care. A literature review indicated that the psychosocial caregiving practices and competency of nurses remain insufficient, and that students face difficulties and obstacles during practical training.[2,4–16] Examination of relevant studies suggested that while surveys are frequently conducted, there is no valid and reliable diagnostic tool in Turkish to evaluate the psychosocial care competency of nurses. Diagnostic tools are crucial to standardized assessment of information and identification of problems using a method that is valid and reliable.

Psychosocial care is an integral component of nursing care. Therefore, it is of great importance to objectively determine how nurses evaluate themselves in terms of psychosocial care. The aim of this study was to develop a psychosocial care self-evaluation scale for nurses working in general clinics in Turkey and to verify its validity and reliability. The objective was to determine nurses' competency in performing a psychosocial evaluation of a patient and determine the patient's needs, and how well they can assess their psychosocial care competency.

Materials and Method

The Research Model

Ethics Approval: Ethics approval for the study was obtained from the Cumhuriyet University Non-Invasive Research Ethics Committee on July 26, 2017 (no: 2017-07/08). Written permission was also obtained from Cumhuriyet University Health Services Practice and Research Hospital. Informed, written and verbal consent was obtained from the nurses who volunteered to participate in the study.

The Population and Sampling

The population of the study consisted of 319 nurses working at Sivas Cumhuriyet University Health Services Practice and Research Hospital in 2017-2018. The final sample comprised 300 nurses who were working in general clinics (including psychiatric wards) during the period November 10, 2017 to March 10, 2018 at Sivas Cumhuriyet University Health Services Practice and Research Hospital who agreed to participate in the study. The recommended size of a sample in scale development is 5-10 individuals for each item.[17,18] The draft scale developed in this study included 44 items; the number of nurses included in the research was more than 6 times the number of items.

Data Collection Format and Tools

The purpose of the study was explained to the participants, they completed a data collection form, and the research data were collected in face-to-face interviews.

Personal Information Form

The form consisted of 14 questions about the personal and professional characteristics.

Draft Psychosocial Care Competence Self-Assessment Scale

The initial measurement tool was prepared using a 5-point Likert-type for nurses to self-assess their psychosocial care competence: "It does not describe me at all" (1 point), "It describes me a little" (2 points), "I am undecided" (3 points), "It describes me well" (4 points), and "It describes me very well" (5 points). Items numbered 6, 12, 39, and 40 in the scale are reversely scored. The maximum score was 220 points and the minimum score was 44 points. A higher score indicated a greater estimation of psychosocial care competence.

Statistical Analysis

IBM SPSS Statistics for Windows, Version 22.0 software (IBM Corp., Armonk, NY, USA) was used to perform the statistical analysis of the data. A p level of >0.05 was considered significant. Descriptive statistics (frequency, percentage, mean, SD) were used to evaluate and report the data. Expert opinions on the content validity of the scale was performed using the Ken-

dall's W statistic for analysis of fit. Pearson correlation analysis was carried out for test-retest reliability analysis of the draft scale. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to evaluate the construct validity of the draft scale and identify the subdimensions. Item-total score analysis and Pearson correlation analysis were conducted to assess reliability, and the internal consistency of the scale was evaluated using the Cronbach Alpha coefficient.[17,18]

Development of the Psychosocial Care Competence Self-Assessment Scale

Initially, 86 items were identified as relevant to the psychosocial care competence of nurses based on a comprehensive literature review.[2,4–16] Eleven experts were consulted to review the item pool of 86 items for content validity, and they provided an assessment regarding the suitability of the items regarding purpose, clarity, and importance. The expert opinions were evaluated using the Davis method. A content validity index (CVI) of >0.80 is considered to indicate sufficient content validity.[17,18] Items with a CVI of <0.80 were excluded. The final version of the draft scale included 44 items. The factor structure of the scale was evaluated with CFA to examine the construct validity. The reliability of the scale was evaluated using item analysis and internal consistency assessment.

Results

Of the study participants, 76.0% were female and 24.0% were male. The age of 26.3% of the participants was 19–25 years, while 47.7% were 26–32 years of age, 15.0% were 33–39, 10.0% were 40–46, and 1.0% were aged ≥47 years. Among the group, 67.7% had an undergraduate degree, 53.7% were married, and 58.3% considered their financial status adequate (see Table 1).

The correlation reliability coefficient (Pearson product-moment correlation coefficient) of 39 items was .44–.74, indicating a positive and statistically significant correlation (p<.001). Five items were found to be statistically significant (p<.001), but the reliability coefficient was <.40, so these items were excluded from the next iteration of the scale (excluded items: numbers 6, 7, 12, 39, and 40). The total number of items was reduced to 39. The Cronbach alpha reliability coefficient of the scale increased after these items were removed (Table 2).

EFA of the remaining 39 items yielded a Kaiser-Meyer-Olkin (KMO) coefficient of 0.952. Since the KMO coefficient was >0.50, the data qualified for factor analysis. The Bartlett test of homogeneity of variance result (x^2=8.997405; degrees of freedom [df]=7.41; p=.000) was significant. In all, 6 subdimensions with a factor load varying 0.30-0.77 with eigenvalues >1 (1.23-18.32) were determined. Overlapping items with a factor load value of <0.5 and a difference of <0.10 in more than 1 factor were excluded from the scale.

Final EFA was conducted using the remaining 18 items; the KMO coefficient was >0.50. Therefore, the data were found to

Table 1. The demographic characteristics of the study group (n=300)

Demographic characteristics	Number (n)	Percent (%)
Gender		
Women	228	76.0
Men	72	24.0
Age		
19–25 years	79	26.3
26–32 years	143	47.7
33–39 years	45	15.0
40–46 years	30	10.0
≥47 years	3	1.0
Educational status		
Medical vocational high school	38	12.7
Associate's degree	18	6.0
Undergraduate degree	203	67.7
Graduate degree	41	13.7
Marital status		
Married	161	53.7
Single	135	45.0
Widowed/divorced	4	1.3
Financial status		
Income < expenses	92	30.7
Income = expenses	175	58.3
Income > expenses	33	11.0
Total	300	100

be eligible for CFA and the Bartlett test result (x^2=3.607845; df=1.53; p<0.001) was significant. It was also determined that the data were homogeneous and the variances were appropriate. The 18 scale items were categorized in 4 subdimensions with an eigenvalue of >1 (1.12–8.64). The variance explained by the factors was 6.25–48.02%, explaining 70.44% of the total variance of the four subdimensions. The factor loads of the scale items ranged .53–.82. The first subdimension identified was symptom identification (items 19, 20, 21, 22, 23), the second subdimension was use of knowledge (items 33, 34, 35, 36, 38), the third was intervention (items 41, 42, 43, 44), and the fourth subdimension was diagnosis (items 4, 5, 30, 31) (Table 3).

Confirmatory Factor Analysis

CFA was conducted to verify the consistency of the 4 subdimensions determined as a result of the final factor analysis of the Psychosocial Care Competence Self-Assessment Scale (Table 4).

According to the initial CFA results, the root mean square error of approximation (RMSEA), the goodness-of-fit index (GFI), and normed fit index (NFI) fit values were near the desired level. According to modification recommendations, the fit indexes were found to be sufficient as a result of the CFA results obtained after modification of the error variances of between

Table 2. The item-total score correlations of the draft Psychosocial Care Competence Self-Assessment Scale			
Statements (n=44)	**Item-total score coefficient**		**Internal consistency coefficient when the item is excluded (Cronbach Alfa)**
	r_p	p	
1. I know that being sick affects the psychosocial health as well as the physiological health of individuals.	.473	.0001	.941
2. I can obtain some information about mental state by observing a patient's behavior.	.651	.0001	.940
3. I am competent in communicating effectively with patients.	.657	.0001	.940
4. I can identify the psychosocial problems of a patient.	.615	.0001	.940
5. I think I am competent at identifying the psychosocial needs of patients.	.622	.0001	.940
6. I believe that there is no need for psychosocial evaluation of patients with physical illnesses.	.237	.0001	.947
7. I think psychosocial care constitutes an important part of nursing practices.	-.332	.0001	.947
8. I can evaluate my patients' worries about their illness.	.706	.0001	.939
9. I can talk to patients about how their condition has affected them.	.656	.0001	.940
10. I believe that I can communicate that I am interested in my patient by establishing an eye contact.	.650	.0001	.940
11. I ask patients their thoughts about being in the hospital.	.477	.0001	.941
12. I care only about the physiological symptoms of the patient related to the disease.	-.044	.0001	.946
13. I can identify my patient's needs for social support.	.636	.0001	.940
14. I give the patient the opportunity to ask questions.	.679	.0001	.940
15. I can help my patients to express themselves better by asking open-ended questions.	.647	.0001	.940
16. I attentively listen to the patients I care for.	.743	.0001	.939
17. By trying to empathize with my patients, I can better understand their condition.	.718	.0001	.939
18. I can encourage my patients to participate actively in the management of their health.	.801	.0001	.939
19. I can identify symptoms of anxiety in a patient.	.697	.0001	.939
20. I can identify symptoms of depression in a patient.	.714	.0001	.939
21. I can identify symptoms of weakness in a patient.	.766	.0001	.939
22. I can identify symptoms of despair in a patient.	.746	.0001	.939
23. I can identify signs of anger/fury in a patient.	.757	.0001	.939
24. If a patient refuses treatment, I can discuss this with them.	.670	.0001	.939
25. I can recognize changes in a patient's body image.	.726	.0001	.939
26. I can identify symptoms of low self-esteem in a patient.	.703	.0001	.939
27. I can identify factors that cause stressful responses in a patient.	.763	.0001	.939
28. I can recognize a patient's methods of coping with stress.	.741	.0001	.939
29. I can identify a patient's strengths (such as positive coping strategies, . communication skills, seeking help).	.745	.0001	.939
30. I can identify a patient's spiritual needs.	.619	.0001	.940
31. I can identify a patient's sources of hope.	.640	.0001	.940
32. I can provide education according to the individual characteristics of a patient.	.741	.0001	.939
33. I know that it is important for patients to freely express their feelings, attitudes, and thoughts.	.740	.0001	.939
34. I involve patients and their family in the care provided.	.543	.0001	.940
35. I inform patients about changes caused by the disease.	.734	.0001	.939
36. I can teach patients how to use effective coping strategies.	.707	.0001	.939
37. I can teach patients useful techniques for coping with anxiety.	.706	.0001	.939
38. I can help patients set realistic goals that support a hopeful outlook.	.703	.0001	.939
39. I believe that psychosocial care is part of the role of a psychiatric nurse.	.174	.0001	.947
40. I limit my interviews because I am afraid that a patient will ask questions that I cannot answer.	.233	.0001	.947
41. I believe I am competent at providing psychosocial care to patients.	.592	.0001	.940
42. I can find a solution for any problem I have with a patient in the clinic.	.607	.0001	.940
43. I can help patients to view their problems from a different perspective.	.676	.0001	.939
44. I am competent in crisis intervention (amputation, loss of organ and function, trauma, etc.).	.503	.0001	.941

Table 3. Exploratory factor analysis results of the Psychosocial Care Self-Assessment Scale (final analysis)

Scale items	Factor 1	Factor 2	Factor 3	Factor 4
Eigenvalue	8.64	1.54	1.36	1.12
Variance explained by the factors (%)	48.02	8.55	7.60	6.25
S19-I can identify symptoms of anxiety in a patient.	.828			
S20-I can identify symptoms of depression in a patient.	.827			
S21-I can identify symptoms of weakness in a patient.	.813			
S23-I can identify symptoms of anger/fury in a patient.	.793			
S22-I can identify symptoms of despair in a patient.	.773			
S35-I inform patients about changes caused by the disease.		.769		
S34-I involve patients and their family in the care provided.		.761		
S36-I can teach patients how to use effective coping strategies.		.695		
S33-I know that it is important for patients to freely express their feelings, attitudes, and thoughts.		.694		
S38-I can help a patient set realistic goals that support a hopeful outlook.		.538		
S42-I can find a solution for any problem I have with a patient in the clinic.			.805	
S43-I can help patients view their problems from a different perspective.			.745	
S41-I believe I am competent at providing psychosocial care to patients.			.744	
S44-I am competent in crisis intervention (amputation, loss of organ and function, trauma, etc.).			.740	
S4-I can identify the psychosocial problems of a patient.				.760
S5-I think I am competent at identifying the psychosocial needs of patients.				.716
S30-I can identify a patient's spiritual needs.				.706
S31-I can identify a patient's sources of hope.				.669
Total explained variance		70.44		

Table 4. Confirmatory factor analysis fit values of the Psychosocial Care Competence Self-Assessment Scale

Confirmatory factor analysis fit values	Results of initial confirmatory factor analysis	Post-modification results of confirmatory factor analysis	Fit indices of the scale and acceptable index values	
			Acceptable index values	Optimum values
CMIN/DF (Chi-square/ degree of freedom)	3.18	2.22	$2 \leq X^2/sd \leq 3$	$0 \leq X^2/sd \leq 2$
GFI	.86	.90	$.90 \leq CFI \leq .95$	$.95 \leq GFI \leq 1.00$
AGFI	.82	.86	$.85 \leq AGFI \leq .90$	$.90 \leq AGFI \leq 1.00$
NFI	.88	.92	$.90 \leq NFI \leq .95$	$.95 \leq NFI \leq 1.00$
NNFI	.90	.94	$.90 \leq NNFI \leq .95$	$.95 \leq NNFI \leq 1.00$
CFI	.92	.95	$90 \leq CFI \leq .95$	$.95 \leq CFI \leq 1.00$
RMSEA	.08	.06	$.05 \leq RMSEA \leq .08$	$.00 \leq RMSEA \leq .05$
RMR	.02	.03	$0 < RMR \leq .08$	$0 < RMR \leq .05$
SRMR	.04	.06	$.05 \leq SRMR \leq .10$	$.00 \leq SRMR \leq .05$
IFI	.92	.95	$.90 \leq IFI$	$.95 \leq IFI$

(Source: Karagöz, 2018).[17] AGFI: Adjusted goodness-of-fit index; CFI: Comparative fix index; CMIN: Chi-square value (minimum discrepancy); DF/df: Degrees of freedom; GFI: Goodness-of-fit index; IFI: Incremental fix index; NFI: Normed fix index; NNFI: Non-normed fix index; RMR: Root mean square residual; RMSEA: Root mean square error of approximation; SRMR: Standardized root mean square residual.

items 4 and 5, items 19 and 20, and items 19 and 23. The factor load of all of the items with their dimensions ranged 57–92 (Table 4).

Examination of the standardized coefficients of the scale in CFA, it was found that the load varied 0.77–0.92 in the first sub-dimension, 0.60–0.83 in the second, 0.57–0.86 in the third, and
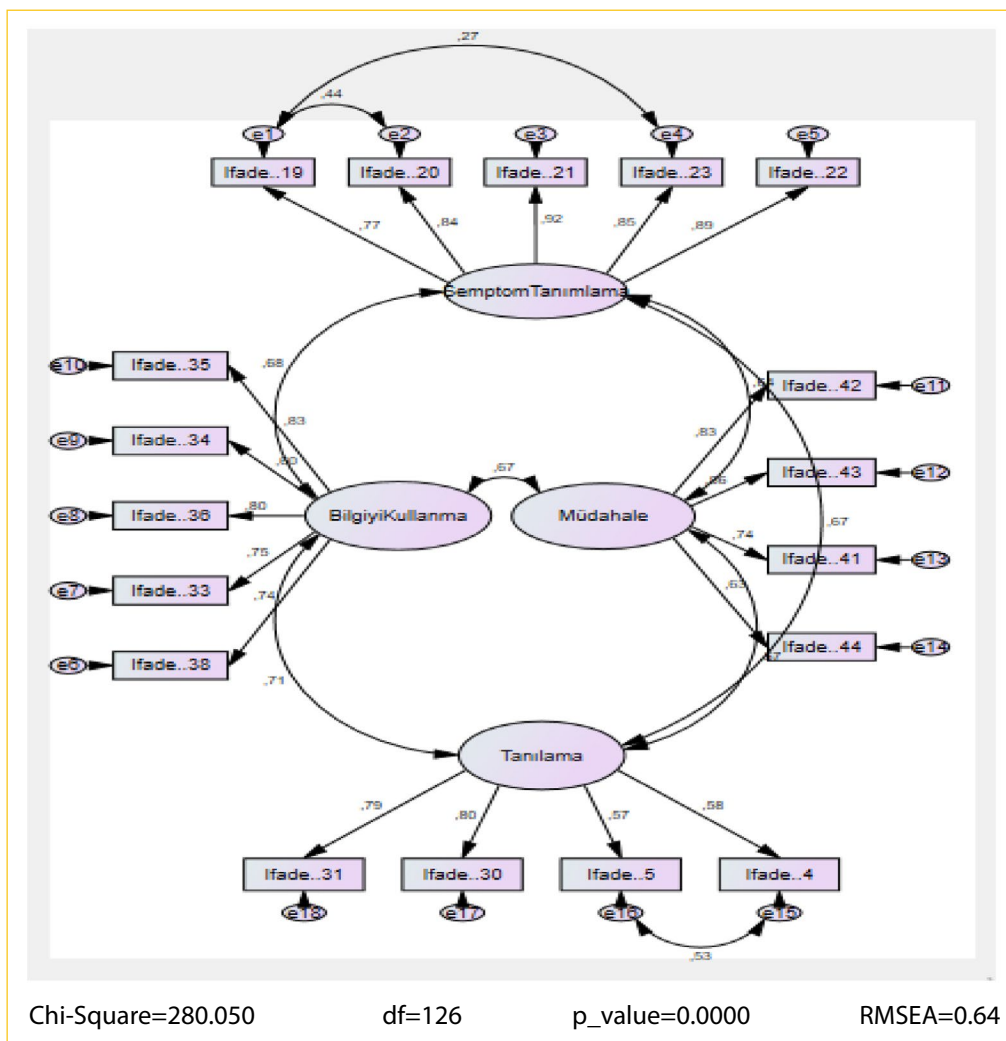
Chi-Square=280.050   df=126   p_value=0.0000   RMSEA=0.64

Figure 1. Post-modification confirmatory factor analysis: Path coefficients and error variances.

0.57–0.80 in the fourth subdimension (Fig. 1).

Item-total score analyses were repeated with 18 items that were finalized via factor analysis, and item-subdimension score analyses were performed. It was determined that the reliability coefficient of all of the items in item-total score correlation analysis ranged .57–.79, which indicated a positive and statistically significant correlation (p<.001). It was also observed that the reliability coefficient between the items of the 4 subdimensions of the scale and the total score of the subdimension ranged .87–.92 on the first, .73–.85 on the second, .78–.86 on the third, and .78–.81 on the fourth factor, indicating a positive and statistically significant correlation (p<.001) (Table 5).

Analysis of the correlation of the subdimension scores of the Psychosocial Care Self-Assessment Scale with the total scale scores revealed that the reliability coefficient ranged .79–.85, indicating a positive and statistically significant correlation (p<.001) (Table 6).

Analysis conducted to assess the internal consistency of the Psychosocial Care Self-Assessment Scale and its subdimen-

sions resulted in a Cronbach alpha reliability coefficient of ∝=.93 for the total scale. The internal consistency reliability coefficient of the subdimensions was ∝=.93 for the first factor, ∝=.85 for the second factor, ∝=83 for the third factor, and ∝=.80 for the fourth factor (Table 7).

Test-retest reliability coefficient was evaluated using the Pearson product-moment correlation. The correlation coefficient between the 2 measurements was 0.96. When the significance test and the mean scores of the test and retest were compared, it was found that the difference between the mean score of the 2 dependent groups was not significantly different (p>.05) (Table 8).

Discussion

The validity and reliability testing of the Psychosocial Care Self-Assessment Scale developed in this study indicated that it is a valid and reliable measurement tool. A content validity study of an item pool of 86 items was carried out using the Davis technique. Two items with a construct-irrelevant variance

Table 5. Item-total score correlations of the scale and sub-dimensions at the second stage

Scale items	Coefficient of item-total score correlations		Item-subdimension correlations	
	r_p	p	r_p	p
First factor (Symptom identification)				
S19-I can identify symptoms of anxiety in a patient.	.71	.0001	.87	.0001
S20-I can identify symptoms of depression in a patient.	.74	.0001	.90	.0001
S21-I can identify symptoms of weakness in a patient.	.79	.0001	.92	.0001
S23-I can identify signs of anger/fury in a patient.	.75	.0001	.87	.0001
S22-I can identify symptoms of despair in a patient.	.77	.0001	.89	.0001
Second factor (Use of knowledge)				
S35-I inform the patient about changes caused by the disease.	.71	.0001	.85	.0001
S34-I involve patients and their family in the care provided.	.54	.0001	.73	.0001
S36-I can teach a patient how to use effective coping strategies.	.72	.0001	.83	.0001
S33-I know that it is important for patients to freely express their feelings, attitudes, and thoughts.	.70	.0001	.79	.0001
S38-I can help a patient set realistic goals that support a hopeful outlook.	.71	.0001	.77	.0001
Third factor (Intervention)				
S42-I can find a solution for any problem I encounter with a patient in the clinic.	.67	.0001	.86	.0001
S43-I can help patients to view their problems from a different perspective.	.73	.0001	.84	.0001
S41-I believe I am competent at providing psychosocial care to patients.	.64	.0001	.82	.0001
S44-I am competent in crisis intervention (amputation, loss of organ and function, trauma, etc.).	.57	.0001	.78	.0001
Fourth factor (Diagnosis)				
S4-I can identify the psychosocial problems of my patient.	.62	.0001	.78	.0001
S5-I think I am competent at identifying the psychosocial needs of patients.	.64	.0001	.77	.0001
S30-I can identify a patient's spiritual needs.	.64	.0001	.81	.0001
S31-I can identify a patient's sources of hope	.65	.0001	.80	.0001

Table 6. Correlations between subdimension scores of the Psychosocial Care Competence Self-Assessment Scale and the total scale score

Scale subdimensions	Subdimension-total scale correlation coefficients	
	r_P	p
First factor	.84	.0001
Second factor	.85	.0001
Third factor	.79	.0001
Fourth factor	.80	.0001

Table 7. Cronbach alpha reliability coefficients of the Psychosocial Care Self-Assessment Scale and the subdimensions

Scale and subdimensions		$\propto$
Total scale		.93
Subdimensions	First factor	.93
	Second factor	.85
	Third factor	.83
	Fourth factor	.80

(CIV) of <0.80 and 12 items with a CIV of <0.81 were excluded from the scale. The consistency of the evaluation scores of the experts was evaluated using Kendall W analysis (Kendall W=0.88). The items in the pool were revised after consultation with experts, yielding a version with 44 items.

The KMO coefficient of the Psychosocial Care Competence Self-Assessment Scale was determined to be .952 and the Bartlett test result was x^2=8.997405; p<0.001, which was statistically significant. These values are important in terms of showing that the correlation matrix of the items in the scale was eligible for factor analysis. EFA is generally used to examine scale validity, while principal components analysis and varimax rotation are used to reveal factors. The eigenvalue coefficient is used to determine the factor structure. A higher eigenvalue explains a greater proportion of the variance. Generally, factors with an eigenvalue of ≥1 are considered important factors. It is also important that the load values on the factor in which the items are located are high. A load value of ≥0.60 is considered high,

Table 8. Comparison of test-retest mean scores					
Application	Psychosocial Care Self-Assessment Scale Mean±Standard deviation	Statistical analysis			
		t	p	r	p
First application	3.30±.45	.311	.758	.96	<0.001
Second application	3.31±.48				

whereas a load value of 0.30–0.59 can be defined as medium. This is taken into account in variable subtraction.[19] In a multi-factor structure, if an item is included in ≥1 factor with a high load value with a difference of <0.10, this item is defined as an overlapping item and these items are excluded from the scale.[18,19] In this study, the factor load value used was 0.50. The analysis revealed overlapping items with a factor load value of <0.5 and a difference of <0.10 in ≥1 factor. Therefore, only items with a factor load value of ≥0.5 were included in the analysis. Each item that was not suitable for analysis was excluded and the analysis was repeated. A total of 21 additional items were excluded from the scale.

EFA was applied to 18 statements categorized in 4 subdimensions with an eigenvalue ≥1 (1.12–8.64). The variance explained by the factors was 6.25-48.02%, and the 4 factors explained 70.44% of the total variance. The factor loading of the scale items ranged .53–.82. The 4 factors that emerged as a result of the EFA were symptom identification, use of knowledge, intervention, and diagnosis.

CFA is a technique used to test theories about latent variables.[20] This method of modeling is used to test the relationships between observed variables and the structure or between structures that are assumed to be measured through these variables. CFA models can also be performed on a theoretical basis and differ from EFA in this respect.[21] A number of fit indices are used to evaluate the suitability of the scale to be tested with CFA. The statistics of fit indexes must meet a desired level. These fit indices include comparative fit indices (NFI, non-normed NFI [NNFI] [Turker-Lewis Index], incremental fix index [IFI], comparative fit index [CFI], and the RMSEA) and absolute fit indices (GFI, adjusted goodness-of-fit index [AGFI]).[17] The chi-square value is the most basic measurement used to test the general fit of the model. The chi-square value is not expected to be significant if the model is acceptable. However, this value is very vulnerable to the sample size. If the result obtained by dividing the chi-square value by the df value is ≤2, the model is deemed appropriate, and ≤5 indicates that the scale has an acceptable fit.[22] The NFI, IFI, RMR, SRMR, CFI, NNFI, GFI, and RMSEA values obtained in this study were more than adequate. A path diagram illustrated that the t values of the items and factors were >2.96 and significant at p<0.001. These findings are important in terms of showing that the model is acceptable.

The Cronbach alpha coefficient is a measure of the internal consistency of the items in a scale.[23] The Cronbach alpha coefficient should be close to 1.[23,24] If it is <.40, the measurement tool is not considered reliable, a coefficient of .40–.59 is considered to reflect a low level of reliability, a coefficient of .60–.79 is considered highly reliable, and a coefficient of .80–1.00 is considered highly reliable.[18] The generally accepted coefficient value is ≥0.70. The Cronbach alpha coefficient is a measure of reliability.[24] The Cronbach alpha coefficient of the total Psychosocial Care Self-Assessment Scale was .93.

Test-retest analysis is the application of a measurement tool twice to the same group of subjects and under the same conditions over time, also known as repeatability. The correlation coefficient of measurement values obtained from the 2 applications demonstrates the reliability of the scale.[24,26] The length of the time interval between measurements is important.[24,25,26] Although the appropriate period can vary according to the measured behavior and target sample, an average of 3–4 weeks is generally considered sufficient.[19,24] In this study, the scale was administered twice with an interval of 3 weeks between administrations. The Pearson product-moment correlation coefficient, the strongest correlation technique, is a useful calculation if the measured feature is a continuous variable and the scale has equal intervals or ratios. Correlation coefficients provide information about the degree and direction of the relationship between 2 variables. A coefficient of +1 indicates a positive and perfect relationship. For a scale to be considered reliable, the coefficient value must be ≥0.70.[24,25,27]

In this study, there was a high correlation between the 2 applications. The alpha value was 0.96. When the significance test of the difference between the means of the 2 dependent groups and the mean scores obtained from the test and retest were compared, it was found that there was no significant difference (p>0.05). These results indicate that the scale is consistent and dependable over time.

Conclusion

We created a valid and reliable Psychosocial Care Competence Self-Assessment Scale for Turkish nurses consisting of 18 items and 4 subdimensions (symptom identification, use of knowledge, intervention and diagnosis) with a Cronbach alpha coefficient of 0.93. The validity of the scale could have been demonstrated in a comparison with a similar, valid and reliable measurement tool; however, there is currently no similar scale. This instrument can be used to evaluate and potentially improve this important element of nursing care, as well

as to contribute to training, policy, and international research.

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