

Turkish Version of Nursing Students' Perception of Instructor Caring (T-NSPIC): Assessment of Reliability and Validity

Hemşirelik Öğrencilerinin Eğitimci Bakımına İlişkin Algıları Ölçeği'nin Türkçe Versiyonu (T-NSPIC): Güvenilirlik ve Geçerliliğin Değerlendirilmesi

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ABSTRACT Objective: This study was carried out to assess the validity and reliability of the Turkish version of nursing students' perception of instructor caring. **Material and Methods:** While the methodological study's population was composed of all Maltepe University School of Nursing students, its sample was composed of 320 students. Nursing Students' Perception of Instructor Caring Scale was used to collect data. In the validity study of the scale, language equivalence was ensured, expert opinions were obtained for content validity, and exploratory and confirmatory factor analysis was used for construct validity. Cronbach's alpha coefficient, item-total correlation and test-retest reliability were done within the reliability analysis of the scale. **Results:** In accord with experts' opinions, it was determined that all items should remain in the scale. Two items that showed a factor weight value below of 0.30 as the result of a factor analysis was removed from the scale. The scale's Cronbach alpha coefficient was found to be 0.94 and sub-dimensions' Cronbach alpha levels were found to vary between 0.83 and 0.91. **Conclusion:** "Turkish Version of Nursing Students' Perception of Instructor Caring Scale" is a reliable and valid assessment instrument in determining the nursing students' perception of instructor caring in the Turkish society.

Keywords: Nursing education research; clinical education; clinical instructor; reliability and validity; perception

ÖZET Amaç: Bu çalışma, Hemşirelik Öğrencilerinin Eğitimci Bakımına İlişkin Algıları Ölçeği'nin Türkçe geçerlik ve güvenilirliğinin yapılması amacıyla gerçekleştirilmiştir. **Gereç ve Yöntemler:** Bu metodolojik çalışmanın evrenini, Maltepe Üniversitesi Hemşirelik Yüksekokulu öğrencilerinin tümü oluştururken örneklemini, çalışmaya katılmaya istekli olan 320 öğrenci oluşturmuştur. Ölçeğin geçerlik çalışmasında, dil eşdeğerliği sağlanmış, kapsam geçerliliği için uzman görüşleri alınmış, yapı geçerliliği için doğrulayıcı faktör analizi kullanılmıştır. Ölçeğin güvenilirlik analizleri kapsamında Cronbach-alfa katsayısı, madde toplam korelasyonları ve test-tekrar test güvenilirliği yapılmıştır. **Bulgular:** Uzman görüşleri doğrultusunda maddelerin tümünün ölçekte kalması gerektiği belirlenmiş, faktör analizinin sonucunda ise faktör yük değeri 0,30'un altında kalan iki madde ölçekten çıkarılmıştır. Ölçeğin Cronbach alfa katsayısının 0,94 olduğu ve alt boyutlarının Cronbach alfa düzeylerinin 0,83 ila 0,91 arasında değiştiği saptanmıştır. **Sonuç:** Türk toplumunda hemşirelik öğrencilerinin eğitimci bakımına ilişkin algılarının belirlenmesinde "Hemşirelik Öğrencilerinin Eğitimci Bakımına İlişkin Algıları Ölçeği"nin güvenilir ve geçerli bir araç olduğu saptanmıştır.

Anahtar Kelimeler: Hemşirelik eğitimi araştırması; klinik eğitim; klinik eğitimci; geçerlilik ve güvenilirlik; algı

Nursing education consists of two parts: theoretical and practical. Clinical practice is a substantial part of nursing education. The clinical practice envi-

ronment enables the student to learn by experience in a real environment by combining both theoretical and professional skills. Furthermore, the clinical learning

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environment is necessary for the acquisition and advancement of students' professional skills, knowledge, decision-making and caring skills.¹⁻³

Clinical practice is influenced by many factors such as physical environment, instructors, clinical nurses and other employees. Instructors are the ones with the most influence and responsibility in nursing education.⁴

Nursing students may experience problems in their trainings in a clinical environment due to reasons such as inadequate number of instructors or absence of instructors during practice hours. A good clinical trainer, the student's adaptation to the clinical environment, the supportive attitude, student's being confident in clinical practice, reducing anxiety and satisfaction from educational activities are important for a positive hospital experience.^{3,5} Therefore, students' anxiety about the clinical environment decreases and their professional role development is supported.⁶ Vice versa, working with a careless instructor may result in problems such as a decrease in professional role development, dissatisfaction and sometimes even quitting nursing program. The quality of student-teacher interaction in the clinical environment may facilitate or prevent students from integrating theory into practice. It has been suggested that clinical instructors should have nursing behavior and effective clinical teaching skills if they want to facilitate students' learning and entry into a multifaceted clinical practice world.⁷

It is often stated that instructors are responsible for giving adequate feedback to the students in the clinical environment and accessibility is a quality that an effective instructor has to have.^{8,9} Studies have shown that students' most preferred clinical instructor qualities are; clinical training capacity (%38,14), followed by interpersonal relations and nursing behaviour (%33,17).¹⁰ Moreover, students reported that instructor's caring behaviours such as flexibility, kindness, respectful attitude, are encouraging, while their unheeding and careless attitudes aroused negative feelings of exclusion, deterrence, loss of confidence, hopelessness, emotional turmoil, and anxiety.¹¹

This study aims to determine whether the NSPIC scale, which may help students to achieve effective clinical training and to increase instructors' level of

awareness, can be adapted to Turkish language and culture and whether it is a valid tool for evaluating the perception of instructor.

MATERIAL AND METHODS

Research Type: This is a methodological study conducted in order to adapt The Nursing Students' Perceptions of Instructor Caring-NSPIC into Turkish language and culture.

Population and Sample: While the population was composed of all Maltepe University School of Nursing students, the sample was composed of 320 students.

DATA COLLECTION TOOLS

General Information Form: The General Information Form used in this study has been prepared by the researchers and includes questions about the students' introductory characteristics.

Nursing Students' Perception of Instructor Caring (NSPIC) is a six-point Likert scale developed by Wade and Kasper (2014) with 31 items and 5 sub-dimensions. Students are asked to answer the questions by considering their latest clinical trainings. Potential answers vary from strongly agree to strongly disagree.^{1,6} The total score of the scale is in the range of 31 to 186, with high scores indicating a positive perception of instructor caring.¹²

ETHICAL CONSIDERATIONS

Approval of the Maltepe University Ethics Committee (Ethical approval number: 2018/06, date: October 25, 2018) was obtained for this study. Permission was obtained from the students who participated in the study or, if necessary, from their legal representative. This study was conducted in accordance with the principles of the Helsinki Declaration. In addition, Gail Holland Wade, one of the scale developers, gave permission to adapt the scale to Turkish.

RESULTS

The mean age of the students who participated in the study was 21.27±1.17 years, the majority of them were female (78.3%), single (97.8%) and unemployed

TABLE 1: Socio-demographic characteristics of the students.

Socio-demographic Characteristics of the Students		n	Percentage (%)
Sex	Woman	253	78.3
	Man	70	21.7
Marital Status	Married	7	2.2
	Single	316	97.8
Level of Studies	2nd year	94	29.1
	3rd year	157	48.6
	4th year	72	22.3
Employment Status	Employed	75	23.2
	Unemployed	248	76.8

(78.6%), and their grade point average was 3.20 ± 0.94 (Table 1).

VALIDITY AND RELIABILITY ASSESSMENT

Validity Assessments

Language Validity: The scale was translated independently by two expert linguists of the original language to Turkish and another expert with the foreign language knowledge and knowledge of the related culture translated the translated tool back into the original language. This translation was sent to the expert who developed the scale and his/her approval was obtained. After the approval, 18 students with a good level of English were given both Turkish and English forms. Pearson Product-Moment correlation coefficient technique was used to analyse the data obtained from two different forms.

There is a high positive and significant relationship between the scores obtained from the English and Turkish forms of the NSPIC scale ($r=.92$; $p<0.000$) (Table 2).

Content Validity: Content validity was assessed in the first stage of validity and reliability assessments. In this context, the compliance / validity levels of the items in the scale were determined with regard to the

TABLE 2: Correlation of English and Turkish forms.

Variables	N	X	Ss	r	p
T-NSPIC	18	147.90	23.96	.92	0.000
En_NSPIIC	18	142.00	18.74		

TABLE 3: KMO and Bartlett's test results of NSPIC Scale.

KMO		0.940
Bartlett's Test	χ^2	5802.926
	sd	406
	p	0.000

opinions of the experts. The content was sent to 11 experts for validation. A three-point Likert scale was used with possible options; necessary, unnecessary, insufficient. Content validity ratio (CVR) was used to evaluate expert opinions. In this study, CVRs of each item in the scale that were sent to a total of 11 experts were calculated and it was found that there is no item with a validity ratio less than 0.59.

Construct Validity: In the second stage of the study, confirmatory factor analysis was used to determine the construct validity of the scale. The results of the factor analysis are shown in Table 3.

In Table 3, Kaiser Meyer Olkin (KMO) value was found as 0.940 in the Basic Components Analysis. The KMO tests whether the dispersion is sufficient for factor analysis and it can be said that the KMO value in this study is very good.

The result of the Bartlett test was 5802.926 ($p<0.05$). The Bartlett test tests the hypothesis that "the correlation matrix is equal to the unit matrix". The rejection of the hypothesis shows that the correlation between the variables is different than 1.00 and the variable used in measurements is multivariable in the population parameter. These two findings indi-

TABLE 4: Variance ratio explained by sub-dimensions of the T-NSPIC scale.

Dimensions	Eigenvalue	Variance (%)	Cumulative Variance (%)
1 st Dimension	12.253	42.252	42.252
2 nd Dimension	2.310	7.966	50.218
3 rd Dimension	1.379	4.756	54.975
4 th Dimension	1.129	3.895	58.869
5 th Dimension	1.081	3.726	62.595

cate that the sample size used in the study is sufficient and the data are appropriate for factor analysis.

As seen in Table 4, the variance rate of the first factor, whose eigenvalue is 12.25, is 42.25%; the variance rate of the second factor with the eigenvalue of 2.31, is 7.97%, the variance rate of the third factor with the eigenvalue of 1.37, is %4.76, the variance rate of the fourth factor with the eigenvalue of 1.12, is 3.89%, and the variance rate of the fifth factor with the eigenvalue of 1.08, is %3.73. Total variance explained is 62.59%. It can be said that the variance amount in this study is ideal.

The factor loads for *NSPIC* items are shown in Table 5.

The bottom cut-off point was accepted as 0,30 for the purposes of this study. When the first results of factor analysis were examined, it was seen that two items' factor load value was less than 0.30, and these items were excluded from the scale (Item 12 and Item 26).

RELIABILITY ASSESSMENTS

Internal Consistency (Table 6 and Table 7)

Item Analysis and Test-Retest Results (Table 8 and Table 9)

It was found that the two items that had factor load values below 0.30 also had correlation coefficients below 0.25 and when they are excluded from the scale, the reliability coefficient increases.

The time-dependent invariance of the scale was evaluated with a test re-test reliability assessment. Fifty randomly selected students were asked to answer the scale's items again 3 weeks later. When evaluating the scale's time-dependent invariance, the test re-test reliability coefficient was calculated with Pearson Product-Moment Correlation (Table 10).

DISCUSSION

Written permission was obtained from Gail Wade, one of the researchers who developed the scale, in order to enable the adaptation of the scale in Turkish and Turkish culture which was developed to reveal the perceptions of nursing students on clinical instructor caring. The scale which was translated into Turkish by two language experts as part of language validity was reduced to a single form and was then translated back into English and submitted to the researcher for approval. After the approval, students who speak both English and Turkish were asked to fill in the English form and then the Turkish form. When the correlation between the two forms filled out by 18 students was investigated, a significant relationship was found. Then, the "Scope Validity Ratios" were examined in the scope validity analysis that was sent to 11 experts. According to the number of experts, the minimum CVR ratio should be 0.59.^{13,14} It was determined that all items of the scale should remain in scale since there is no item below 0.59.

Within the scope of reliability assessments of the scale; total and sub-dimension scores' Cronbach's alpha levels were examined. Cronbach's alpha levels were found to range from 0.83 to 0.94. Cronbach alpha values above 0.80 are reported to be highly reliable in the literature.¹⁵ Therefore, the scale was also found to be highly reliable. As a result of the item analysis, it was determined that the item-total correlation of two items (Item 12, Item 26) was quite low. Based on the information that "when the item-total correlation coefficient is negative or below +0,25 and, if the reliability coefficient increases when those items are deleted, the items should be excluded", the two items were excluded from the scale. After 3

TABLE 5: Factor loads of items in the nursing students' perception of instructor caring (T-NSPIC) scale sub-dimensions.

Item No	Factor Load				
	1 st Dimension Instills confidence through caring	2 nd Dimension Control vs flexibility	3 rd Dimension Understanding the meaning of life	4 th Dimension Supportive learning environment	5 th Dimension Respectful Sharing
1. Truly cares for patients and their care.	0.64		0.21		
2. Is kind to me and to others.	0.60	0.25	0.21	0.24	0.30
3. Gives me hope for the future.	0.81	0.22	0.24	0.20	
4. Makes me feel that I can be successful.	0.78	0.26	0.34		
5. Makes me see myself as a professional nurse in the future.	0.74		0.36		
6. Makes me feel unsuccessful.	0.20	0.46			
7. Does not believe in me.	0.30	0.56			
8. Cares for me as an individual.		0.26	0.24		0.63
9. Respects me as a unique individual.	0.49	0.24	0.23	0.29	0.57
10. Treats me with care when we communicate.	0.43	0.30	0.22	0.33	0.47
11. Shares personal information about me with others inappropriately.		0.49			0.26
13. Accepts her/his limits or mistakes.	0.41		0.29		0.26
14. Makes herself/himself accessible to me.	0.40	0.22	0.27	0.49	
15. Expresses his / her expectations clearly.	0.44		0.30	0.41	
16. Serves as a reliable source of personal problem solving.	0.42	0.30	0.33	0.62	
17. Offers support in stressful times.	0.41		0.47	0.53	
18. Helps me to see my positive thoughts while accepting negative ones.	0.31	0.24	0.51	0.44	
19. Lets me express my true feelings.	0.29	0.27	0.35	0.44	
20. Discourages me from solving problems independently.		0.63			
21. Inspires me to continue improving my knowledge and skills.	0.33	0.22	0.57	0.28	
22. Makes me feel nervous in the clinic/laboratory.		0.53	0.22		
23. Does not trust my decision in the clinic/laboratory.	0.23	0.63			
24. Is drawn to his/her priorities rather than responding to my needs.	0.22	0.65		0.30	
25. Makes requests when I am busy with my basic needs.		0.44			
26. Helps me make sense of my experiences on my own.	0.27		0.69		0.32
27. Encourages me to see other people's perspectives of life.	0.34		0.74		
28. Helps me to understand the spiritual dimension of life.	0.35		0.69		
29. Is not flexible when faced with unexpected situations (events).		0.39			
30. Uses the exam grades to ensure control over the students.		0.43			

TABLE 6: Internal consistency coefficients of NSPIC.

NSPIC	r
Cronbach's Alpha	0.94
Spearman-Brown	0.88
Guttman	0.88

weeks, the scale was re-tested with 50 randomly selected students and it was determined that there was

TABLE 7: Reliability coefficients of all sub-dimensions of NSPIC

Cronbach's alpha	
NSPIC	0.94
Instills confidence through caring	0.91
Control vs flexibility	0.81
Understanding the meaning of life	0.89
Supportive learning environment	0.85
Respectful Sharing	0.83

TABLE 8: Item analysis of the NSPIC scale.

ITEM	Mean	SD	Item-total correlation	Cronbach's Alpha if Item Deleted	Test-retest reliability (ICC)
Item1	5.06	1.15	0.59	0.93	.86*
Item2	5.18	1.14	0.69	0.93	.92*
Item3	4.82	1.30	0.73	0.93	.86*
Item4	4.70	1.32	0.78	0.93	.93*
Item5	4.78	1.29	0.68	0.93	.90*
Item6	5.03	1.38	0.44	0.93	.81*
Item7	5.17	1.21	0.47	0.93	.54*
Item8	4.95	1.29	0.57	0.93	.93*
Item9	5.20	1.06	0.71	0.93	.92*
Item10	5.04	1.24	0.72	0.93	.90*
Item11	5.32	1.33	0.28	0.93	.60*
Item12	3.69	1.69	0.05	0.94	.51*
Item13	4.42	1.40	0.56	0.93	.68*
Item14	5.08	1.13	0.64	0.93	.83*
Item15	5.21	1.01	0.65	0.93	.79*
Item16	4.86	1.28	0.76	0.93	.88*
Item17	4.55	1.34	0.70	0.93	.81*
Item18	4.58	1.30	0.68	0.93	.83*
Item19	4.66	1.32	0.62	0.93	.78*
Item20	5.03	1.36	0.51	0.93	.77*
Item21	4.65	1.29	0.69	0.93	.69*
Item22	4.72	1.57	0.53	0.93	.83*
Item23	5.18	1.16	0.58	0.93	.67*
Item24	5.14	1.27	0.60	0.93	.72*
Item25	4.87	1.45	0.28	0.94	.64*
Item26	3.84	1.59	0.08	0.94	.60*
Item27	4.76	1.21	0.66	0.93	.73*
Item28	4.63	1.32	0.71	0.93	.84*
Item29	4.28	1.50	0.63	0.93	.83*
Item30	4.19	1.60	0.34	0.93	.86*
Item31	4.28	1.70	0.43	0.93	.62*

a highly positive and statistically significant relationship between the two applications.¹⁵

As part of validity assessments of the scale, construct validity was examined and confirmatory factor analysis was conducted for this. Factor load values of the two items in the item analysis (Item 12, Item 26) were found to be below 0.30. “Does not reveal any of her/his personal information (Item 12)” and “Focuses on finishing the patient’s care rather than the patient’s needs (Item 26)” were excluded from the scale. The Turkish version of the scale was found to

TABLE 9: NSPIC's test re-test results (N=50).

Variables	X	SS	r	p
First Run	147.89	23.96	.93	0.000
Second Run	151.28	23.99		

be consisting of 29 items and five sub-dimensions. With this finding, although the scale is similar to its original form, it was determined that some items were under different dimensions than the original.¹² The scale was adapted to Chinese, Italian and Spanish cul-

TABLE 10: Nursing students' perception of instructor caring (T-NSPIC) scale; Sub-dimension names and item numbers.

Dimension	Item Numbers
First Dimension :	Instills confidence through caring 1,2,3,4,5,13,15
Second Dimension:	Control vs flexibility 6,7,11,20,22,23,24,25,30,31
Third Dimension:	Understanding the meaning of life 18,21,27,28,29
Fourth Dimension:	Supportive learning environment 14,16,17,19
Fifth Dimension:	Respectful sharing 8,9,10

tures. The Chinese version of NSPIC is a five-factor scale just like the original one, and all the items' factor loads are higher than 0.40.¹⁶ The Italian version of the scale is reported to consists of four sub-dimensions, unlike the original form and the findings of this study (the Turkish version).¹⁷ The results of the Spanish version of the scale is a resemblance to our study. In the study by Romero Martin et al. (2018), factor load of item 12 was found to be below 0,30, the same as our study. What's different is that the item-total correlation coefficient of item 31 was found to be below+0.25. Again, in this study, the same as our study, two items were excluded from the scale and the final version consisted of 29 items and 5 sub-dimensions.¹⁸

The Turkish version of the scale consists of 5 dimensions including; *Instills confidence through caring* which consists of 7 items (items 1,2,3,4,5,13,15.), *Control vs flexibility* which consists of 10 items (items 6,7,11,20,22,23,24,25,30,31.), *Understanding the meaning of life* which consists of 5 items (items 18,21,27,28,29.), *Supportive learning environment* which consists of 4 items (items 14,16,17,19.) and lastly *Respectful sharing* which consists of 3 items (items 8,9,10).

CONCLUSION

“Turkish Version of Nursing Students' Perception of Instructor Caring Scale” is a reliable and valid assessment instrument in determining the nursing stu-

dents' perception of instructor caring in the Turkish society. This scale can increase the awareness of the instructors and contribute to the effective clinical training of the students and the development of their competencies.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Sebahat Ateş, Azzet Yüksel, Gizem Kubat; **Design:** Sebahat Ateş; **Control/Supervision:** Sebahat Ateş, Havva Kaçan; **Data Collection and/or Processing:** Azzet Yüksel, Gizem Kubat, Sebahat Ateş; **Analysis and/or Interpretation:** Sebahat Ateş; **Literature Review:** Sebahat Ateş, Gizem Kubat, Azzet Yüksel, Havva Kaçan; **Writing the Article:** Sebahat Ateş, Havva Kaçan, Azzet Yüksel, Gizem Kubat; **Critical Review:** Sebahat Ateş, Havva Kaçan; **References and Fundings:** Sebahat Ateş, Azzet Yüksel, Gizem Kubat, Havva Kaçan.

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