



Turkish validity and reliability study of “Nursing Students’ perceptions of Clinical Stressors Scale”

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ABSTRACT

Background: Clinical education is a significant part of nursing education, but students frequently perceive it as stressful. There is no valid and reliable scale to determine the clinical stressor perceptions of nursing students in Turkey.

Objective: The study aims to adapt the “Nursing Students’ Clinical Stressor Perceptions Scale” (NSPCSS) into Turkish and perform its validity and reliability study for nursing students.

Method: The research was conducted in a methodological design between 30 September 2021 and 1 November 2021. The sample consisted of 304 nursing students.

Results: “The Cronbach’s alpha” reliability coefficient of the NSPCSS is 0.912. The retest coefficient is 0.90 and the item correlation values are between 0.404 and 0.689.

Conclusion: The study has shown that the NSPCSS-TR is a valid and reliable assessment tool to evaluate clinical stressors in nursing students.

1. Introduction

Nursing education, including theoretical and clinical education processes, is expected to provide students with knowledge, attitudes and skills in cognitive, affective and psychomotor areas (Akansel et al., 2021; Bazrafkan & Kalyani, 2018). Clinical education is an indispensable part of nursing education (Rafati et al., 2021). Positive clinical education experience allows students to transform theoretical knowledge into skills by practice (Sharifipour et al., 2020), identify their future professional roles, have a professional perspective on the field, develop a professional identity (Cornine, 2020) and develop communication and problem-solving skills (Akansel et al., 2021). Negative clinical education experience, on the other hand, may cause a decrease in students’ self-confidence, academic performance, motivation (Sharifipour et al., 2020; Norouzi and Imani, 2021) and level of interest in the profession (Bazrafkan & Kalyani, 2018) and affect their physical and mental health (Cornine, 2020; Flott and Linden, 2016).

Clinical education is a significant part of nursing education, but students frequently perceive it as stressful (George et al., 2020; Rafati et al., 2020). Major clinical stressors described by nursing students are inadequate skills and knowledge (George et al., 2020), fear of harming patients, heavy workload, anxiety of making mistakes (Ching et al., 2020; Suarez Garcia et al., 2018), negative behaviors and attitudes of instructors (Rafati et al., 2020; Zhu et al., 2019), being ignored by instructors and clinical staff (George et al., 2020), instructors’ not giving feedback (Rafati et al., 2021), ineffective organization and internship in a crowded environment (Rezaei et al., 2020).

Identifying the clinical stress sources of students by educators and clinical nurses and providing students with adequate support to cope with these factors can both support students’ less exposure to the negative effects of stress and increase the quality of professional care. Therefore, it is essential to evaluate the clinical stressors of nursing students with valid and reliable measurement tools.

Researchers reviewed the national literature using the keywords

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“clinical stress” and “stressor” through the Turkey Assessment Tools Index and Google Scholar and found 4 scales (Akansel et al., 2021; Demiray et al., 2017; Karaca et al., 2015; Sendir and Acaroglu, 2008). Three of these scales measure the general stress levels of nursing students (Akansel et al., 2021; Demiray et al., 2017; Karaca et al., 2015) and the other one does not measure “clinical stressor perception” (Sendir and Acaroglu, 2008). Then, the “Nursing Students’ Perceptions of Clinical Stressors Scale” developed by Rafati et al. (2021) in Iran was determined to be a measurement tool that can evaluate nursing students’ clinical stressor perceptions. This study aimed to appraise the clinical stressor perceptions of nursing students and establish the validity and reliability of a measurement tool in accordance with the Turkish Language and Culture. It is expected that the study will present a measurement tool for studies to determine clinical stressors in nursing students and contribute to educational studies by identifying clinical stressors accurately.

2. Methods

2.1. Design and sample

This research is in a methodological design. The population comprised third and fourth-grade nursing students at a public university in Trabzon. There were 400 students in total. Inclusion criteria for the study were having at least one clinical experience and participating in the study voluntarily. There were no exclusion criteria. In scale validity and reliability studies, the sample should be five to ten times more than the number of scale items (Aksu et al., 2017). The NSPCSS contains 30 items and hence, the sample size needed to be between 150 and 300. The researchers informed the nursing students about the study and their written informed consent was obtained. Participants chose nicknames for themselves to guarantee anonymity. 304 nursing students voluntarily participated in the study. The normality distribution was examined, and the data obtained from all students were found to have a normal distribution. Therefore, the main application was completed with 304 students.

2.2. Instruments

The data were collected with a “Questionnaire Form” and the “Nursing Students’ Perceptions of Clinical Stressors Scale”.

2.2.1. The Questionnaire form

The form includes 5 questions about the gender, age, class, status of choosing the nursing profession willingly and the students’ perceptions of academic success.

2.2.2. Nursing Students’ perceptions of clinical stressors scale

The scale was developed in two phases by Rafati et al. (2021).

2.2.3. Qualitative phase

During this phase, the literature was reviewed, and scale items were developed. Semi-structured interviews were conducted with 1st, 2nd, 3rd and 4th-year nursing students in Iran. During the interviews, students were asked to describe and explain the stressors they encountered during their clinical experiences. The interviews lasted approximately 60–90 min. The literature search was conducted through Google Scholar, PubMed, ScienceDirect, Scopus, SID and Magiran using the following keywords: “clinical stress”, “clinical stressors”, “nursing student”, “stress-inducing factors”, “stressor”, “clinical training”, “clinical environment” and “clinical setting”. Articles published in the last 10 years were included in the review. Then, researchers performed comparative analyzes on the concept of the clinical stressor. Thus, the conceptual substructure of the NSPCSS was established (Rafati et al., 2021). A 61-item scaled pool was formed and content validity was assessed after consultation with 15 experts. A 30-item measurement tool

was developed at the end of the revisions (Rafati et al., 2021).

2.2.4. Quantitative phase

The discriminant validity and composite reliability analysis of the NSPCSS was performed. The sample consisted of 430 students. The instruments were administered twice at periods. As a result of analyses, the scale was found to be a valid and reliable scale. The “NSPCSS items” are score on a five-point Likert type scale (1: never - 5: always) and comprises of 6 sub-dimensions; “instructors limited clinical competence” (1,2,3,4,5,6), “inappropriate clinical environment” (7,8,9,10,11,12,13,14), “inadequate knowledge and skills” (15,16,17), “inefficient clinical education planning” (18,19,20,21), “instructor’s inappropriate conduct” (22,23,24,25,26,27) and “concerns over the characteristics of nursing” (28,29,30). The construct validity of the scale was confirmed. The NSPCSS has high internal consistency. Cronbach Alpha value of the scale is 0.91. “The Cronbach Alpha” value is 0.93 for instructors’ limited clinical competence, 0.82 for the inappropriate clinical environment, 0.89 for inefficient knowledge and skills, 0.81 for inefficient clinical education planning, 0.77 for the instructor’s inappropriate conduct and 0.74 for the concerns over the characteristics of nursing (Rafati et al., 2021). The minimum and maximum scores to be attained from the scale are 30–150. High scores indicate high clinical stressors perceptions.

2.3. Linguistic validity

First, The NSPCSS was translated from English into Turkish by four translators. The form was reviewed with three Turkish translators in terms of the suitability of the scale items, Turkish language validity and cultural compatibility. Afterward, no items were removed from the scale, the form was edited by the researchers and translators. As a result of the edits, the form was transformed back into the English language by the translator. After the checks, it was concluded that the translated form had the same meaning as the original scale.

2.4. Content validity

Davis technique was employed to determine content validity. Twelve experts (six nursing instructors, three psychiatric nurses, two scale-development specialists and one psychologist) were asked to test the content validity of the NSPCSS-TR. The experts were consulted to estimate the NSPCSS-TR items grading each item on a scale of one-four (“1 =Not convenient”; “2 =Partially convenient but needs revision”; “3 =Partially convenient but needs minor revision”; “4 =very convenient”). After receiving feedback from the experts, the scale items were checked by researchers and were attained on the final scale items. The lowest value of CVI (Content Validity Index) is accepted as 0.80 (Seçer, 2020). In our study, there was no item with a CVI below 0.80 and the mean CVI of the items in the total scale was found to be 0.91. In the pilot application of scale adaptation studies, the sample size should be around fifty (Seçer, 2020). In this study, the pilot study was administered to 76 students. The results of the KMO (0.821) and “Bartlett Sphericity Test” ($\chi^2 = 1379.632$, $p = 0.001$), completed to define the suitability of the pilot data for analysis, presented that the data were convenient for the analysis. The internal consistency value of the NSPCSS-TR was 0.937 and the least item correlation value was 0.397. Based on this information, the main application phase started with 30 items.

2.5. Data collection and analysis

The study data were collected between 30 September 2021 and 1 November 2021. The data collection link, including the measurement tool, was shared with the nursing students via “WhatsApp” as a “Google Form” and they were asked to fill in the form after obtaining their consent. 304 nursing students voluntarily participated in the study. Test-retest was employed to measure the uniformity of the NSPCSS-TR. It is

advised to apply the retest within 15–30 days in the literature (Seçer, 2020). The retest (n = 76) was completed between 15 and 30 days after the original test. In the study, the data were analyzed with the “SPSS 23” and “AMOS 22 package programs”. “Kaiser Meyer Olkin” and Bartlett sphericity” tests were used for item analysis and explanatory and confirmatory factor analyzes were used for construct validity. In the reliability analysis, the Cronbach alpha coefficient was used to determine the internal consistency.

2.6. Ethical considerations

Permissions from the authors of the NSPCSS were obtained to use in this study through e-mail. Ethical approval was obtained from the “Human Research Ethics Committee” of a local university (Date: 29.09.2021 No: 24237859/725). The institutional permission was received from the nursing faculty (63582098–299–1461). Students were informed about the process and purpose of the study. They were also explained that the research would be conducted according to the principle of voluntariness, the data would be kept confidential, and their permission was received with “Google Forms”.

3. Results

3.1. Characteristics of the students

Of the students (n = 304) involved in the research, 59.6 % were 21–22 years old, 80.9 % were female, 53.6 % were 4th-year students, 64.8 % perceived their academic achievement as moderate and 73.4 % willingly chose the nursing department (Table 1).

3.2. Results of validity

3.2.1. Explanatory factor analysis

“Reliability analysis” was performed to find out whether the items had suitable values. EFA was performed to confirm construct validity. To set the items in the scale, attention was paid to the absence of overlapping items, the item core value to be 1 and the item load value to be at least “0.30” (Seçer, 2020; Sibel and Berat, 2020). The NSPCSS item-total correlations and “Cronbach’s α” factors are presented in Table 2. For construct validity, “25 degrees” of “Promax axis rotation”, which is preferred in scale adaptation studies, was conducted.

The total correlations of the items ranged from 0.40 to 0.71 and the total “Cronbach Alpha” value was determined to be 0.94. In this process, no item was removed because the “Cronbach Alpha” value was good and there was no item with an “item-total correlation” value below “0.30”, so the analysis was done with 30 items.

Prior to the “explanatory and confirmatory factor analysis” of the scale, KMO and “Bartlett’s Sphericity Test” were employed to check the suitability of the sample size and the data set for analysis. “The KMO value” was found to be 0.93 and “Bartlett’s Test of Sphericity” was found

Table 1 Demographic characteristics of the students participating in the study (n = 304).

Characteristics	n	%
Age	19–20	80 26.3
	21–22	181 59.6
	23–24	29 9.6
	25 and over	14 4.6
Gender	Female	246 80.9
	Male	58 19.1
Class	3	141 46.4
	4	163 53.6
Perceived academic achievement	Low	7 2.3
	Moderate	197 64.8
	High	100 32.9
Status of choosing the nursing department willingly	Yes	223 73.4
	No	81 26.6

Table 2 “Item-total correlations” and “Cronbach’s α” coefficients of the NSPCSS.

Scale Items	“Mean ± SD”	“Item-total correlations”	“If item is deleted Cronbach α “
NSPCSS 1	3.93 ± 0.974	0.500	0.933
NSPCSS 2	3.80 ± 0.881	0.519	0.933
NSPCSS 3	3.76 ± 0.917	0.527	0.933
NSPCSS 4	2.83 ± 1.063	0.496	0.934
NSPCSS 5	3.79 ± 0.933	0.527	0.933
NSPCSS 6	3.84 ± 0.909	0.428	0.934
NSPCSS 7	3.98 ± 0.967	0.541	0.933
NSPCSS 8	3.84 ± 0.967	0.523	0.933
NSPCSS 9	4.17 ± 0.854	0.534	0.933
NSPCSS 10	4.28 ± 0.838	0.560	0.933
NSPCSS 11	3.98 ± 0.912	0.475	0.934
NSPCSS 12	4.09 ± 0.782	0.662	0.932
NSPCSS 13	4.02 ± 0.966	0.453	0.934
NSPCSS 14	4.18 ± 0.829	0.677	0.931
NSPCSS 15	4.22 ± 0.801	0.578	0.933
NSPCSS 16	4.17 ± 0.864	0.548	0.933
NSPCSS 17	4.11 ± 0.868	0.610	0.932
NSPCSS 18	4.16 ± 0.841	0.670	0.932
NSPCSS 19	4.10 ± 0.897	0.640	0.932
NSPCSS 20	3.62 ± 1.083	0.445	0.934
NSPCSS 21	4.11 ± 0.864	0.637	0.932
NSPCSS 22	4.34 ± 0.809	0.612	0.932
NSPCSS 23	3.66 ± 1.060	0.401	0.935
NSPCSS 24	4.48 ± 0.779	0.562	0.933
NSPCSS 25	4.14 ± 0.850	0.542	0.933
NSPCSS 26	3.76 ± 0.980	0.597	0.932
NSPCSS 27	4.14 ± 0.886	0.710	0.931
NSPCSS 28	3.81 ± 0.908	0.587	0.932
NSPCSS 29	4.15 ± 0.859	0.568	0.933
NSPCSS 30	4.02 ± 0.906	0.546	0.933

Table 3 Cronbach’s Alpha, KMO Values, and Bartlett Test Results for Data Sets.

Tests	Test Results
KMO	0.927
Bartlett Test of Sphericity	Chi-square 4266.359 sd 435 p 0.001
Cronbach Alpha	0.935

to be significant ($\chi^2 = 4266.359$; $p = 0.001$) (Table 3). The “Cronbach Alpha” value was 0.935. Consistent with the literature, the results showed that this sample size and data set were suitable for analysis (Aksu et al., 2017; Seçer, 2020).

If an item has a load value of 0.32 or more in more than one dimension and the difference between factor loading values for the dimensions in question is less than 0.10, these items are considered to be overlapping and suggested to be excluded from the scale (Aksu et al., 2017; Seçer, 2020). Therefore, some overlapping items (7, 14, 18, 19, 20, 21, 23, 26) were excluded from the scale. In the EFA performed with 22 items, the KMO value was found to be 0.909 and the “Bartlett Sphericity Test” was significant ($\chi^2 = 2829.681$, $p = 0.001$), which showed that the data were suitable for “Exploratory Factor Analysis” (Aksu et al., 2017; Seçer, 2020). “Promax analysis” revealed that scale items were grouped under six factors. The emergence of six components with an eigenvalue above 1 meant that the scale had a 6-factor structure. The “Scree Plot Chart” also showed that the scale had a 6-factor structure (Fig. 1).

According to the analysis, the first factor consisted of six items (8, 9, 10, 11, 12 and 13) and factor loadings ranged between “0.412 and 0.656” and explained 35.903 % of the total variance (Table 4). The second factor comprised four items (22, 24, 25 and 27) and factor loadings ranged from “0.583–0.671” and explained 7.569 % of the total variance (Table 4). The third factor consisted of three items (15, 16 and 17) and factor loadings varied between “0.763 and 0.852” and explained 6.299 % of the total variance (Table 4). The fourth factor consisted of three items (28, 29 and 30) and factor loadings ranged from “0.655–0.769” and explained 5.47 % of the total variance (Table 4). The fifth factor consisted of three items (1, 2 and 3) and the factor loadings varied between “0.619 and 0.681” and explained 4.925 % of the total variance (Table 4). The sixth factor consisted of three items (4, 5 and 6) and the factor loadings varied between “0.598 and 0.706” and explained 4.626 % of the total variance (Table 4).

3.3. Confirmatory factor analysis

“CFA” was tested with the construct obtained by “EFA”. “CFA” was performed using the “AMOS Package Program”. No modification was made because there was no suitable modification suggestion in the “AMOS package Program”. Information on the fit indices obtained as a result of CFA is given in Table 5. Compliance values were evaluated according to the multiple reference values (Aksu et al., 2017; Byrne, 2013; Kline, 2014; Seçer, 2020).

The analysis after the CFA revealed that six items in the factor named “Inappropriate situations in the clinical environment (F1)” had standard solutions ranging from 0.55 to 0.76; four items in the factor named “Instructors’ inappropriate conduct (F2)” had standard solutions ranging from 0.64 to 0.81; three items in the factor named “Students’

inadequate knowledge and skills (F3)” had a standard solution ranging from 0.76 to 0.89; three items in the factor named “Concerns over nursing care (F4)” had standard solutions ranging from 0.65 to 0.82; 3 items in the factor named “Instructor’s academic performance (F5)” had standard solutions ranging from 0.66 to 0.69; and 3 items in the factor named “Instructor’s attitudes towards education (F6)” had a standard solution ranging from 0.50 to 0.71 (Fig. 2). It was concluded that the items were significant for the factors where they were found. The “Path Diagram” was analyzed, and the obtained values were found to be suitable in terms of item-factor compatibility (Fig. 2).

3.4. Results of reliability

3.4.1. Internal consistency (Cronbach Alpha) coefficients

The “Cronbach Alpha” coefficient was evaluated for the reliability analyses of the 22 items of the finalized scale. The total item correlation value of 22 items on the scale was found to be between “0.404 and 0.689”. The “Cronbach Alpha” coefficient was 0.775 for “F1 sub-dimension”, 0.807 for “F2 sub-dimension”, 0.882 for “F3 sub-dimension”, 0.796 for “F4 sub-dimension”, 0.720 for “F5 sub-dimension”, 0.638 for “F6 sub-dimension” and 0.912 for the whole scale, which show that the scale is quite reliable (DeVellis, 2016; Tavşancıl, 2018).

3.5. Split-half reliability coefficient

According to the results of the split-half reliability analysis of the final form of the scale with 22 items, it can be concluded that the Spearman-Brown correlation value ($r = 0.855$), the Guttman Split Half Coefficient value ($r = 0.854$) and the Split-Half Cronbach Alpha Reliability Coefficients have adequate values (Seçer, 2020). Split-half reliability coefficients are shown in Table 6. Based on its results, the scale appears reliable (Part 1 = 0.880; Part 2 = 0.902).

3.6. Invariance of scale

To test the invariance of the scale against time, the retest method was performed with 48 students. Test-retest results are given in Table 7. The results of the correlation analysis showing the relationship between test-retest revealed a high level of significant positive correlation between the two tests.

4. Discussion

This study aimed to conduct the validity and reliability of the “Nursing Students’ Perceptions of Clinical Stressors Scale” in nursing students and content validity, construct validity, reliability analyses and internal consistency analyzes were performed, accordingly.

Content validity is an indicator of the extent to which each item of

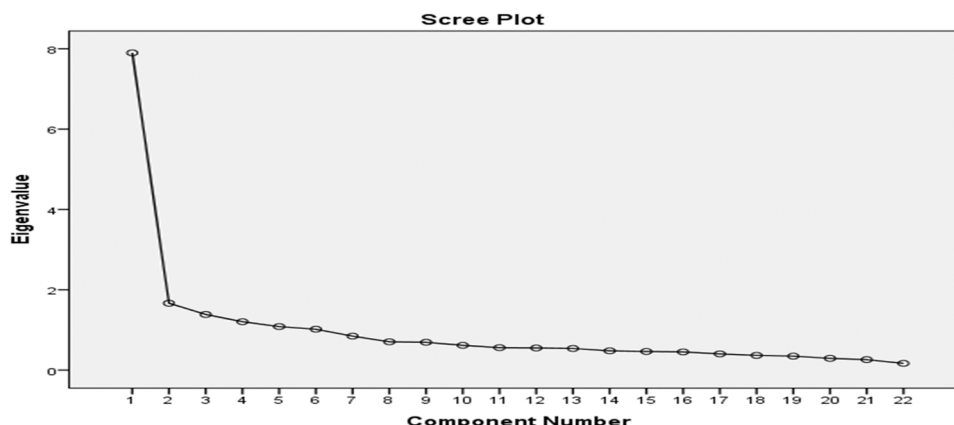


Fig. 1. “Scree plot” factor structure.

Table 4
The NSPCSS EFA Results.

	Common Factor Variance	Factor Load Value					
		1	2	3	4	5	6
NSPCSS 11	0.656	0.952					
NSPCSS 12	0.640	0.687					
NSPCSS 9	0.501	0.620					
NSPCSS 10	0.489	0.487					
NSPCSS 8	0.528	0.482					
NSPCSS 13	0.412	0.417	0.312				
NSPCSS 24	0.671		0.847				
NSPCSS 25	0.583		0.749				
NSPCSS 22	0.651		0.709				
NSPCSS 27	0.658		0.491				
NSPCSS 16	0.852			0.920			
NSPCSS 17	0.821			0.857			
NSPCSS 15	0.763			0.798			
NSPCSS 30	0.769				0.892		
NSPCSS 29	0.747				0.842		
NSPCSS 28	0.655	0.304			0.699		
NSPCSS 1	0.681					0.803	
NSPCSS 2	0.655					0.785	
NSPCSS 3	0.619					0.550	
NSPCSS 6	0.706						0.917
NSPCSS 4	0.601						0.677
NSPCSS 5	0.598						0.612
Eigenvalue (Total=14.256)		7.899	1.665	1.386	1.205	1.083	1.018
Total Explained Variance % = %64.800		35.903	7.569	6.299	5.477	4.925	4.626

Table 5
CFA “Goodness of Fit Indices” and “Normal Values”.

Index	Normal Value	Acceptable Value	Measurement	Result
χ^2 “p” value	$p > 0.05$	–	0.001	Perfect fit
“ χ^2/sd ” (CMIN/DF)	< 2	< 5	1.763	Perfect fit
“GFI”	> 0.95	> 0.90	0.909	Acceptable fit
“AGFI”	> 0.95	> 0.85	0.881	Acceptable fit
“CFI”	> 0.95	> 0.90	0.945	Acceptable fit
“RMSEA”	< 0.05	< 0.08	0.050	Acceptable fit
“RMR”	< 0.05	< 0.08	0.040	Perfect fit
“SRMR”	< 0.05	< 0.08	0.0502	Acceptable fit
“NFI”	> 0.95	> 0.80	0.882	Acceptable fit
“TLI”	$0.95 < TLI < 1$	$0.90 < TLI < 0.94$	0.934	Acceptable fit
“IFI”	> 0.90	–	0.945	Perfect fit
“PGFI”	> 0.89	> 0.50	0.697	Acceptable fit
“PNFI”	> 0.89	> 0.50	0.741	Acceptable fit

the scale and the whole scale serve the purpose (Dancey et al., 2012) In the study, the Davis technique was used for content validity. For the suitability of the questions, 12 experts with at least a Ph.D. degree were consulted and the CVI was calculated with the data obtained. The lowest value of CVI is accepted as 0.80 (Seçer, 2020). In our study, there was no item with a CVI below 0.80 and the mean CVI of the items in the total scale was 0.91. This value is at a suitable level according to the literature, suggesting that if the CVI is greater than 0.80 in a measurement tool, the content validity will be considered sufficient (Dancey et al., 2012). It shows that the scale items represent the population that the research addresses.

In the explanatory factor analysis, the KMO test was performed to

evaluate the suitability of the sample size for factor analysis and the KMO value was found to be 0.927, which indicates that the sample adequacy is “good enough” to perform factor analysis (Field, 2000). According to the Bartlett test results, the chi-square value was acceptable and suitable for factor analysis ($p = 0.001$). As a result of the factor analysis, the factor loads of the 6-factor NSPCSS with an eigenvalue above 1 were found to be between 0.412 and 0.852. Accordingly, the significance of all questions within the factor was sufficient.

Internal consistency and item-total score correlation coefficients were used to determine the reliability of the study. The item-total test correlation values of the items on the scale are between 0.404 and 0.689 and it is reported that the item correlation value should be 0.30 (Seçer, 2020; Sibel and Berat, 2020), so the sample and factor analysis is suitable.

The keywords “clinical stress” and “stressor” were searched in the national literature through the “Turkey Assessment Tools Index” and “Google Scholar” and 4 scales were discovered (Akansel et al., 2021; Demiray et al., 2017; Karaca et al., 2015; Sendir and Acaroglu, 2008). It was defined that three of these scales do not belong to “clinical stressors” (Akansel et al., 2021; Demiray et al., 2017; Karaca et al., 2015) and the other scale does not measure “clinical stressor perceptions” (Sendir and Acaroglu, 2008).

The “Stressors in Nursing Students Scale”, adapted by Akansel et al. (2021), consists of four dimensions: “confidence”, “education”, “relationships” and “uncertainties”. “Stressors in Students Scale”, adapted by Demiray et al. (2017), includes two dimensions: “training components” and “financial components”. “Perceived Stress Scale for Nursing Students”, whose psychometric properties were examined by Karaca et al. (2015), consists of 6 sub-dimensions: “stress from lack of professional knowledge and skills”, “stress from taking care of patients”, “stress from assignments and workload”, “stress from teachers and nursing staff”, “stress from the environment” and “stress from peers and daily life”. “Clinical Stress Scale” adapted by Şendir and Acaroglu (2008) is a self-assessment scale created to identify the baseline value of stress that threatens students or requires them to struggle in their first clinical practice experience and consists of 4 dimensions: “threat”, “struggle”, “harm” and “benefit”. The scale adapted in this study aims to determine the specific clinical stressors of nursing students and includes “Inappropriate situations in the clinical environment”, “Instructor’s

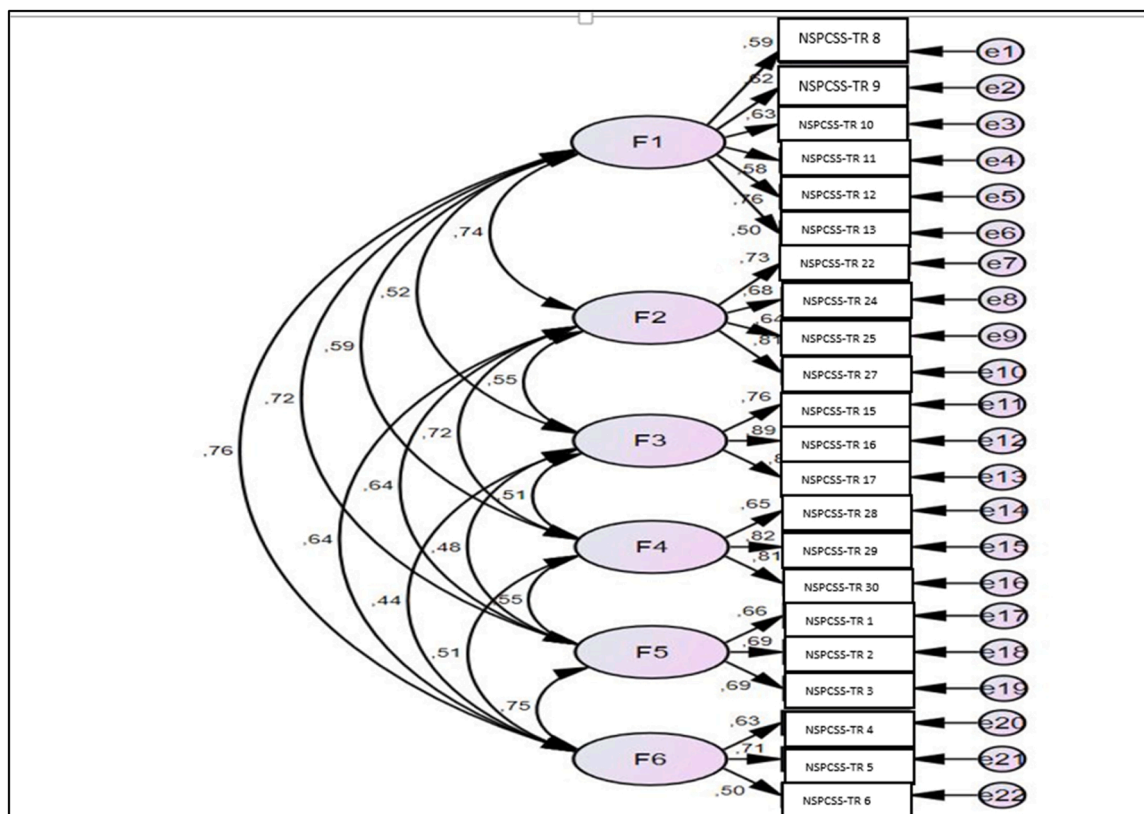


Fig. 2. The NSPCSS-TR Confirmatory Factor Analysis Diagram.

Table 6
The Split-Half Reliability Analysis Results.

Split-half	Cronbach Alpha
1. Part	0.880
2. Part	0.902

Table 7
Test-Retest Analysis Results.

Test	Retest
r	0.90
p	0.001

inappropriate conduct”, “Student’s inadequate knowledge and skills”, “Concerns over nursing care”, “Instructor’s academic performance”, “Instructor’s attitudes towards education” sub-dimensions. No similarity was found between the sub-dimensions of the other scales mentioned above and this study, which highlights the original nature of the scale.

As a result, the NSPCSS-TR consists of 22 items and 6 sub-dimensions: “Inappropriate situations in the clinical environment (6 items)”, “Instructor’s inappropriate conduct (4 items)”, “Student’s inadequate knowledge and skills (3 items)”, “Concerns over nursing care (3 items)”, “Instructor’s academic performance (3 items)”, “Instructor’s attitude towards education (3 items)”. There is no inverse item in the NSPCSS-TR. The lowest and highest scores to be obtained from the scale are 22 and 110. High scores indicate high clinical stressor perceptions of the students. The “Cronbach alpha” for the whole scale was found to be 0.912. The invariance of the scale against time was proven. The scale explained 64.800 % of the total variance.

5. Conclusion

After the above considerations, it is concluded that the NSPCSS-TR is a valid and reliable measurement tool for nursing students.

5.1. Limitations

The main identified limitation of the study is that it was conducted with third and fourth-grade nursing students at a university in Trabzon. Most of the sample included female students. Therefore, the study results cannot be generalized to all nursing students.

CRediT authorship contribution statement

The authors share the responsibility for the manuscript. Conception and design: MA, HE, MG, EFA. Data collection: MA, HE, MG, EFA. Analysis: MA. Manuscript writing: MA, MG, EFA. Critical review of the article: MA.

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Conflict of Interest

The authors declare that there are no potential conflicts of interest regarding this article.

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