JERN Journal of Education and Research in Nursing

Original Article
DOI:10.14744/jern.2024.63004
JEducResNurs. 2024;21(4):334-342

Investigation of the Validity and Reliability of the Nursing Student Perceptions of Dishonesty Scale

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Abstract

Background: Academic honesty is a particularly important characteristic for individuals preparing to become professional healthcare providers. It has been established that students who engage in unethical behaviors during their academic careers may continue these behaviors in their professional lives. Therefore, it is important to determine nursing students' perceptions of academic dishonesty, develop effective ethical policies, and implement preventive measures against this issue.

Aim: The aim of this study is to investigate whether the Nursing Student Perceptions of Dishonesty Scale is a valid and reliable tool for the Turkish language and culture.

Methods: This methodological study was conducted with a total of 368 second-, third-, and fourth-year students at the Faculty of Health Sciences. Data were collected using the "Student Introductory Questionnaire," the "Nursing Student Perceptions of Dishonesty Scale," and the "Academic Dishonesty Tendency Scale." Data evaluation involved analyses for language validity, content validity, criterion validity, construct validity, stability, and internal consistency.

Results: Content validity indexes were calculated, with values for all items ranging from 0.80 to 1.00. To assess criterion-related validity of the scale, the Pearson Correlation coefficient was computed between the total scores of the "Cheating" subscale of the Nursing Student Perceptions of Dishonesty Scale and those of the "Cheating" subscale of the Academic Dishonesty Tendency Scale, used as a criterion measure. Confirmatory factor analysis was conducted to ensure construct validity. The goodness-of-fit values of the scale were as follows: $\chi 2$/sd (Chi-square/df) = 4.11, Comparative Fit Index (CFI) = 0.91, Tucker-Lewis Index (TLI) = 0.91, and Root Mean Square Error of Approximation (RMSEA) = 0.09. The correlation coefficient obtained was $r_{xy} = 0.61$, with a p-value of 0.00. In the test-retest analyses aimed at establishing stability reliability, Pearson correlation coefficients for the subscales ranged from 0.72 to 0.92. Additionally, Cronbach's α coefficients for the subscales ranged from 0.70 to 0.97. These results indicate that the scale meets the required standards for validity and reliability.

Conclusion: In conclusion, the Nursing Student Perceptions of Dishonesty Scale was found to be a valid and reliable tool for use in Turkish society.

Keywords: Academic dishonesty, dishonesty, nursing, reliability, validity

Introduction

Education is defined as "a process of forming intentional and desired behavior changes throughout an individual's life." However, at the end of this process, undesired behaviors, such as cheating and plagiarism in homework assignments, may emerge, which can be indicative of students' tendencies toward academic dishonesty.[1] Academic dishonesty, which can be defined as unethical and unlawful behaviors exhibited during the process of testing an individual's knowledge and skills,[2] manifests in various forms, such as cheating, stealing answers from examination rooms, falsifying results, verbally or physically attacking test administrators, engaging in unauthorized collaborative work on homework assignments, and plagiarism of homework assignments.[1,2]

Academic honesty, on the other hand, is one of the fundamental values of higher education.[3] Academic dishonesty is observed at all educational levels but is particularly prevalent and problematic in universities, where it is regarded as an increasing issue.[3-6] Özden, Özdemir Özden, and Biçer provided a comprehensive depiction of the different aspects of academic dishonesty and highlighted concrete relationships. In universities,

Cite this article as: Nüzket G, Özkütük N. Investigation of the validity and reliability of the nursing student perceptions of dishonesty scale. *J Educ Res Nurs.* 2024;21(4):334-342.

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Received: December 26, 2023
Accepted: October 26, 2024
Publication Date: December 1, 2024

the increased use of the Internet has contributed to the widespread nature of academic dishonesty behaviors.[7,8] Although the Internet offers advantages such as facilitating faster learning, structuring knowledge, democratizing and enhancing access to resources, and supporting interactions, communication, and cooperation, it has also made academic dishonesty and plagiarism easier.[5,9] Specifically, in tasks such as homework assignments, projects, and presentations, students' use of websites that complete assignments for them, blogs, and forums has encouraged academic dishonesty, often without their full awareness.[9,10]

A study conducted by Gallup indicated that nursing is perceived as the profession with the highest level of honesty and ethical standards among 23 professions.[7,11] However, this perception should not imply that nursing students are immune to engaging in academic dishonesty behaviors. Research has been conducted to investigate the academic dishonesty behaviors of nursing students, and findings have shown that some students do not view actions such as accessing hidden notes during an examination as dishonest.[7] The high global rates of academic dishonesty have prompted researchers to identify factors associated with such behavior, revealing that academic dishonesty is a complex issue influenced by a large number of variables.[3]

In a 2009 study involving undergraduate nursing students in China, Zhang et al. found that women displayed fewer academic dishonesty behaviors compared to men. The study also indicated that women scored significantly higher in ethical behavior, subjective norms, and perceptions of penal sanctions, and that cheating was more prevalent among male students.[12] In a longitudinal study examining academic irregularities in the classroom in Italy, Macale et al. included 503 first-year nursing students and 354 second-year nursing students. They reported that women more frequently engaged in the behavior of giving examination answers to friends, while men more often pressured teachers to award higher evaluation points.[13]

In a study conducted by Ellahi, Mushtaq, and Kahn involving 500 students from four universities in Pakistan, it was found that academic dishonesty behaviors, such as plagiarism among peers and submitting the same homework assignment, were manipulated. The perception of inadequacy in completing homework assignments and projects pushed students to copy ideas from their peers.[14] Krueger noted that students creatively employed new technologies for cheating, using methods such as tattoos, labels on drink bottles, camera-equipped cell phones, and papers purchased online.[5] In a study conducted by Park, Park, and Jang involving 655 nursing students in South Korea, it was found that 48.7% of the nursing students admitted to engaging in one or more cheating behaviors during 11 examinations in their last semester, and 76.8% engaged in similar behaviors for 15 homework assignments. The most common cheating behavior during examinations was collecting questions from previous tests, which students did not perceive as problematic.[8]

Ignoring academic dishonesty undermines the ethical foundation of society. Students who engage in successful dishonest practices during their academic years may carry these behaviors into their professional lives, potentially promoting deceptive practices.[10] Educators bear the responsibility of preparing competent and honest nurses who are committed to upholding academic integrity, honesty, personal integrity, and fairness in teaching, learning, and homework assignments.[13] It is, therefore, crucial to identify nursing students' perceptions of academic dishonesty, understand the types of dishonest behaviors they engage in, and explore the reasons behind these behaviors. Developing effective ethical policies and implementing preventive measures is essential to address this problem, which has become pervasive in higher education. Nursing is an applied health discipline that includes both theoretical knowledge and practical skills.[15] When considered from this perspective, studies aimed at determining nursing students' perceptions of academic dishonesty, both in the classroom and clinical settings, primarily rely on a limited number of tools from abroad, while the scales used in Turkish literature are mainly from the field of educational sciences.

Therefore, there is a need within the field of nursing in Türkiye to adapt or develop measurement tools that can assess perceptions of academic dishonesty in both academic and clinical settings. The Nursing Student Perceptions of Dishonesty Scale (NSPDS), developed by McClung and Schneider in 2018, comprises 67 items and is designed to evaluate nursing students' perceptions of academic dishonesty comprehensively. This scale is well-suited for evaluating perceptions of academic dishonesty in Türkiye within both academic and clinical contexts. Conducting a validity and reliability study of this scale and adapting it to the Turkish language and cultural context was the starting point for this research. The aim was to provide a measurement tool for assessing the perception of academic dishonesty in nursing in Türkiye. Thus, the main objective of this research is to investigate whether the Nursing Student Perceptions of Dishonesty Scale developed by McClung and Schneider is a valid and reliable tool for Turkish language and culture. The research question is: "Is the Nursing Student Perceptions of Dishonesty Scale a valid and reliable scale?"

Materials and Methods

The research was conducted methodologically to evaluate the language adaptation, validity, and reliability of the Turkish version of the "Nursing Student Perceptions of Dishonesty Scale."

Participants

This study was conducted between April and August 2018 with students enrolled in the nursing department of a university located in the western region of Türkiye. The inclusion criteria were being a current nursing student and having completed at least one year of clinical practice. Consequently, second-, third-, and fourth-year students were included in the study through non-probability sampling. First-year students were not included in the sample group as they had not completed the minimum requirement of one year of clinical practice.

In scale studies, it is recommended that the sample size be at least 5-10 times the number of items on the scale to conduct factor analysis effectively.[16] Accordingly, data were collected to ensure that the sample size was at least 5 times the number of items on the scale, resulting in 383 students being included. However, since 15 students submitted incomplete data forms, their forms were excluded from the evaluation, leaving a final sample size of 368 students.

Data Collection Tools

Three main data collection tools were used in this study: the Student Introductory Questionnaire, the Nursing Student Perceptions of Dishonesty Scale (NSPDS), and the Academic Dishonesty Tendency Scale (ADTS). The Student Introductory Questionnaire gathered demographic information such as age, gender, and year of education. The Nursing Student Perceptions of Dishonesty Scale (NSPDS), which is

being adapted to Turkish, and the Academic Dishonesty Tendency Scale, developed by Eminoğlu in 2009, were utilized for validity assessment.

The Nursing Student Perceptions of Dishonesty Scale

The Nursing Student Perceptions of Dishonesty Scale, developed by McClung and Schneider in 2018, was employed to determine students' perceptions of academic dishonesty. The original version of the scale comprises 67 items and nine subscales. The NSPDS uses a four-point Likert-type scale (I strongly disagree, I disagree, I agree, I strongly agree) for each item. When evaluating the scale, higher mean scores on the subscales indicate a higher perception of academic dishonesty. This scale does not include any reverse-scored items. The subscale explanations related to the year and clinical factors, as well as the Cronbach's alpha values established by McClung and Schneider, are presented in Table 1.[17]

The Academic Dishonesty Tendency Scale

The Academic Dishonesty Tendency Scale was developed by Eminoğlu in 2009. This scale consists of 22 items and four subscales: "tendency to cheat," "general dishonesty tendency in academic work such as homework assignments and projects," "dishonesty tendency in conducting research and reporting," and "dishonesty tendency in citations."[6] The Cronbach's Alpha internal consistency reliability coefficient for the cheating tendency subscale was $\alpha = 0.8$ based on the analysis of the data obtained from this study. In the original study, the Cronbach's Alpha value for the overall scale was 0.90, and for the cheating tendency subscale, it was 0.71.

For evaluating this scale, Items 1, 2, 3, 5, 7, 11, 12, 13, 14, 15, 17, 18, and 20 are positive, while Items 4, 6, 8, 9, 10, 16, 19, 21, and 22 are calculated negatively. After digitizing students' responses to all items on the scale from five to one for positive items and from one to five for negative items, the total score obtained is divided by the number of items to determine each student's position on the five-point scale. Accordingly, if a student's total score is between 1.00 and 1.79, their tendency for academic dishonesty is considered very low. Scores between 1.80 and 2.59 indicate a partial tendency toward academic fraud, scores between 2.60 and 3.39 indicate a moderate tendency, scores between 3.40 and 4.19 suggest a high tendency, and scores between 4.20 and 5.00 indicate a very high tendency for academic dishonesty.[6]

Process of Data Collection and Evaluation

Reliability Studies

The test-retest reliability method was used to assess invariance as one of the methods for ensuring reliability. The scale was administered twice, with an interval of two weeks, to a sample group of 45 students, and the data obtained from both administrations were analyzed to determine the test-retest reliability of the scale. The closer the reliability coefficient is to 1, the higher the reliability. For scales with a small number of items, a reliability level of 0.70 may be considered significant.[18]

The Cronbach's Alpha coefficient was calculated to determine the internal consistency coefficient. Since total scores could not be obtained from the NSPDS, only the Cronbach's Alpha coefficient for the subscales were calculated. Cronbach's Alpha values range between 0 and 1, with values close to 1 indicating high reliability. The recommended minimum value for Cronbach's Alpha is 0.70.[19]

Validity Studies

Opinions were obtained from ten experts using the Davis technique for content validity. The Content Validity Index (CVI) scores were calculated based on the experts' feedback. For the CVI, rather than comparing it with a statistical criterion, a value of 0.80 was accepted as

Table 1. Subscales of the Nursing Student Perceptions of Dishonesty Scale, Cronbach's Alpha Values, and Scale Items

	Subscale	Definition	Cronbach's Alpha	Scale Items
Classroom Factors and Subscales	Cheating	Actions taken to achieve good results on examinations or homework assignments without completing genuine work	0.96	8, 31, 23, 61, 66, 10, 25, 12, 65, 59, 20, 26, 18 **Number of Items: 13**
	Assist	Actions involving collaboration or assistance from others for one's own work	0.91	50, 40, 42, 63, 29, 56, 39, 27, 3 **Number of Items: 9**
	Cutting Corners	Actions taken to reduce the workload that should be completed	0.86	37, 33, 58, 38, 44, 41, 6 **Number of Items: 7**
	Not My Problem	Knowing others are engaging in academic dishonesty and choosing not to report it	0.88	2, 22, 4, 16 **Number of Items: 4**
	Sabotage	Actions aimed at negatively impacting someone else's work	0.84	34, 49, 46, 51 **Number of Items: 4**
	Test File	Actions such as using or obtaining old questions or test banks	0.71	54, 47, 13 **Number of Items: 3**
Clinical Factors and Subscales	Perjury	Actions involving fabricating or presenting wrong information	0.96	67, 64, 15, 43, 24, 60, 9, 17, 14, 62, 5, 19, 7 **Number of Items: 13**
	Noncompliance	Actions of not adhering to established regulations and rules	0.92	48, 36, 52, 35, 55, 21, 32, 45, 30, 11, 1 **Number of Items: 11**
	Stealing	Actions involving taking something without permission or the right to do so	0.62	28, 53, 57 **Number of Items: 3**

the benchmark. If the CVI was greater than 0.80, the item was considered sufficient in terms of content validity.[20]

Studies were conducted to ensure the language validity of the scale during its adaptation to Turkish. The translation-retranslation method was used to assess language validity.

A pilot application was conducted with a "model scale form" created for the language and content validity study. This pilot test included 34 students who were not part of the sampling groups and were in their second year of education at the same institution.

Confirmatory Factor Analysis (CFA) was conducted to assess the structural validity of the scale, and a path diagram was prepared (Figure 1). The goodness-of-fit indices obtained from the analysis included $\chi 2/sd$, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The $\chi 2/sd$ is evaluated by dividing the chi-square value by the degrees of freedom, with an expected value below 2, and a value below 5 being considered an acceptable level of goodness-of-fit.[16] A CFI of ≥0.90 indicates a good fit.[16] The TLI, also known as the Non-Normed Fit Index (NNFI), with a value of ≥0.90, suggests a good fit.[21] An RMSEA of ≤0.08 and a p value of <0.05 indicate a good fit, whereas a value of ≤0.10 suggests a poor fit.[16]

The total scores from the "To Cheat" subscale of the NSPDS and the total scores from the "Cheating Tendency" subscale of the ADTS, which were used to test criterion-related validity, were calculated using Pearson's Moment Correlation Coefficient. For criterion validity, the correlation coefficient should have strong values between 0.70 and 0.80. Correlation coefficients between 0.50 and 0.70 are considered evidence of validity, indicating a moderate relationship. This correlation coefficient should not fall below 0.30.[22]

Ethical Considerations

Ethical approval to use the questionnaire in the study and written permission were obtained from McClung, who developed the questionnaire. Written permission was also obtained from Eminoğlu for the ADTS, which was used for criterion validity. Ethical approval for conducting the study was granted by the Ethics Committee of a Ethics Committee of Manisa Celal Bayar University (Approval Number: 20478486-050.04.04, Date: 20.04.2018), and institutional permission was secured from the Faculty of Health Sciences, where the study was conducted. Written informed consent to participate in the study was obtained from the nursing students.

Data Analysis

The SPSS 18 package (IBM, New York, United States) was used for statistical analyses, including the Cronbach's Alpha Coefficient, Pearson's Moment Correlation Coefficient, and the correlation coefficient between test and criterion scores. The Mplus 7 software (Muthén & Muthén, Los Angeles, CA, United States) was used for the confirmatory factor analysis.[23,24] The study also employed the calculation of the Content Validity Index and translation and back-translation methods. The level of significance was set at 0.05.

Results

Participants' Characteristics

The average age of the students was 21.73 ± 1.63 years. Among the students, 65.2% were female; 13.6% were in their second year, 47.6% in their third year, and 38.9% in their fourth year.

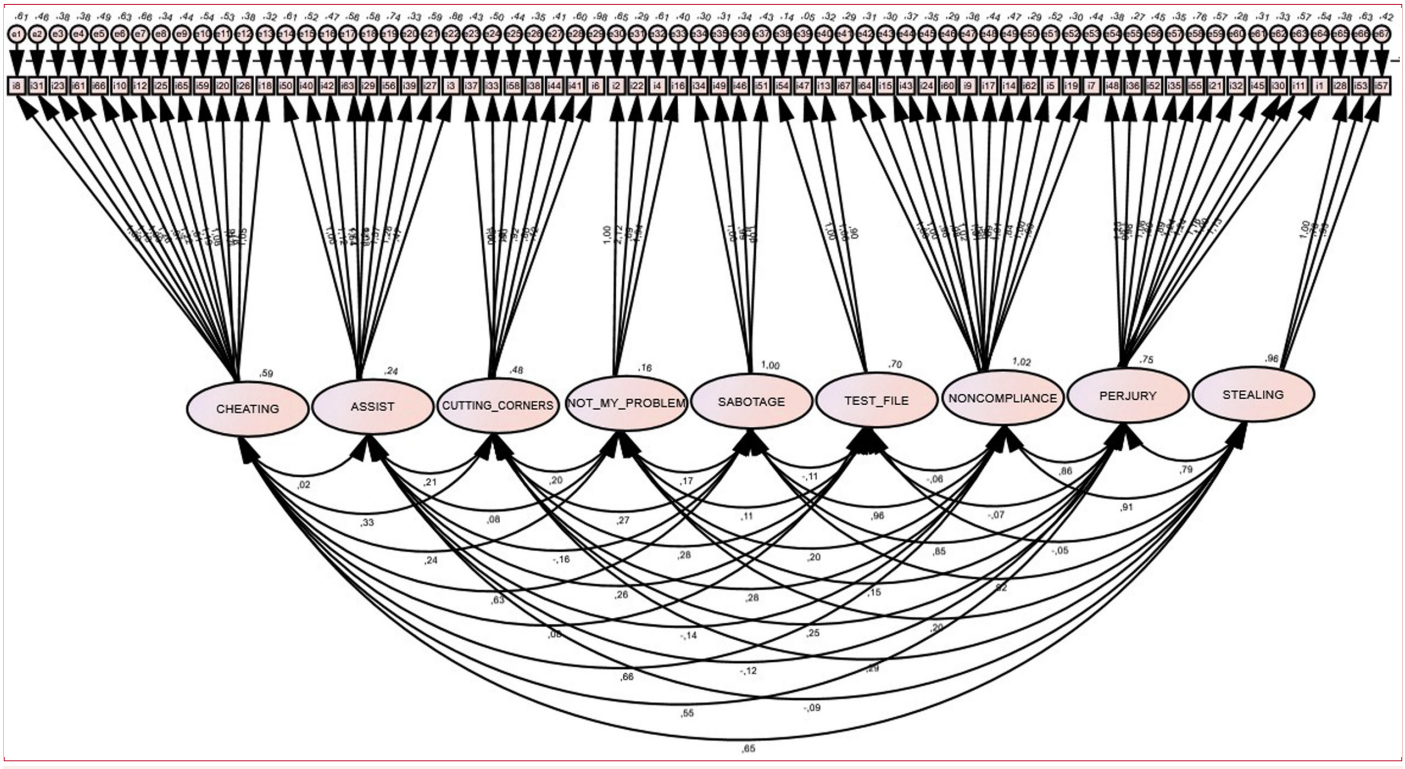

Figure 1. Path Diagram.

Table 2. Item-Total Test Correlations

Factor	Subscale	Item	Average of the Scale When Item Is Removed	Variance of the Scale When Item Is Removed	Item-Total Test Correlations	Cronbach's Alpha When Item Is Removed
Classroom	Cheating	**u8**	27.83	97.96	0.69	0.94
		u31	27.85	96.20	0.77	0.93
		u23	27.82	96.91	0.79	0.93
		u61	27.93	94.73	0.81	0.93
		u66	27.83	98.47	0.72	0.94
		u10	27.98	95.45	0.71	0.94
		u12	27.78	100.51	0.61	0.94
		u18	27.94	97.75	0.78	0.93
		u25	27.90	95.97	0.79	0.93
		u65	27.89	97.22	0.75	0.93
		u59	27.86	101.71	0.60	0.94
		u20	27.75	101.43	0.62	0.94
		u26	27.93	96.09	0.79	0.93
	Assist	**u50**	18.88	27.63	0.48	0.82
		u40	18.88	27.18	0.54	0.81
		u42	18.80	25.11	0.68	0.79
		u63	18.93	27.48	0.51	0.81
		u29	18.69	25.03	0.65	0.80
		u56	18.79	26.26	0.53	0.81
		u39	18.77	25.39	0.70	0.79
		u27	18.78	26.66	0.54	0.81
		u3	18.60	30.00	0.31	0.84
	Cutting Corners	**u37**	13.71	13.49	0.63	0.73
		u33	13.67	13.85	0.58	0.74
		u58	13.64	13.78	0.60	0.73
		u38	13.90	13.98	0.62	0.73
		u44	13.84	14.11	0.57	0.74
		u41	13.70	14.06	0.54	0.75
		u6	13.43	17.23	0.37	0.79
	Not My Problem	**u2**	7.33	4.95	0.42	0.67
		u22	7.62	3.98	0.60	0.55
		u4	7.58	5.57	0.30	0.73
		u16	7.59	3.97	0.61	0.54
	Sabotage	**u34**	6.53	9.28	0.82	0.87
		u49	6.58	9.30	0.81	0.87
		u46	6.55	8.75	0.82	0.87
		u51	6.56	10.39	0.73	0.90
	Test File	**u13**	4.82	3.16	0.76	0.93

(*Continued*)

Table 2. Item-Total Test Correlations (*Continued*)

Factor	Subscale	Item	Average of the Scale When Item Is Removed	Variance of the Scale When Item Is Removed	Item-Total Test Correlations	Cronbach's Alpha When Item Is Removed
		u47	4.84	2.96	0.89	0.83
		u54	4.88	3.06	0.84	0.87
Clinical	Noncompliance	**u67**	27.51	138.16	0.86	0.96
		u64	27.54	138.15	0.85	0.96
		u15	27.73	138.26	0.87	0.96
		u43	27.52	138.62	0.82	0.96
		u24	27.50	137.40	0.85	0.96
		u60	27.57	137.99	0.85	0.96
		u9	27.61	138.09	0.85	0.96
		u17	27.61	142.56	0.76	0.97
		u14	27.54	140.15	0.79	0.96
		u62	27.55	137.86	0.86	0.96
		u5	27.52	141.28	0.76	0.97
		u19	27.69	137.98	0.86	0.96
		u7	27.58	140.01	0.80	0.96
	Perjury	**u48**	20.22	72.96	0.79	0.94
		u36	20.19	69.67	0.86	0.94
		u52	20.26	73.17	0.77	0.94
		u35	20.18	72.05	0.82	0.94
		u55	20.27	75.25	0.61	0.95
		u21	20.24	74.18	0.70	0.94
		u32	20.17	69.60	0.87	0.94
		u45	20.16	69.81	0.85	0.94
		u30	20.27	70.77	0.83	0.94
		u11	20.26	73.19	0.71	0.94
	Stealing	**u28**	4.54	4.56	0.58	0.90
		u53	4.49	4.22	0.73	0.76
		u57	4.48	3.85	0.83	0.66

Results Related to Reliability

The test-retest reliability method was used to assess stability over time. The test-retest reliability coefficients for the nine subscales were as follows: 0.77 for Cheating, 0.78 for Assist, 0.78 for Cutting Corners, 0.72 for Not My Problem, 0.86 for Sabotage, 0.80 for Test File, 0.83 for Perjury, 0.92 for Noncompliance, and 0.79 for Stealing.

The Cronbach's Alpha reliability values for the subscales, calculated to determine the internal consistency of the NSPDS, were as follows: Cronbach's $\alpha = 0.94$ for Cheating, Cronbach's $\alpha = 0.83$ for Assist, Cronbach's $\alpha = 0.78$ for Cutting Corners, Cronbach's $\alpha = 0.70$ for Not My Problem, Cronbach's $\alpha = 0.91$ for Sabotage, Cronbach's $\alpha = 0.91$ for Test File, Cronbach's $\alpha = 0.97$ for Perjury, Cronbach's $\alpha = 0.95$ for Noncompliance, and Cronbach's $\alpha = 0.84$ for Stealing.

Item-total test correlations are shown in Table 2. When examining all subscales, item-test correlation values range from 0.30 to 0.89. When an item is removed, Cronbach's Alpha values range from 0.54 to 0.97. Thus, there is no need to remove any item from any subscale, as each item contributes significantly to the reliability of its respective subscale.

Since total scores could not be obtained from the NSPDS, test-retest and Cronbach's Alpha reliability coefficients for the entire scale could not be calculated.

Results Related to Validity

The Turkish version of the sample form was evaluated for language and cultural appropriateness by ten university instructors, who are

experts in different branches of nursing. The Content Validity Index scores for expert reviews ranged between 0.80 and 1.00.

In the pilot application, after calculating the CVI, feedback from students led to the addition of explanations for a few words, such as "plagiarism" and "redaction," which were included in the scale items. These explanations were added in parentheses, and the final version of the scale was prepared.

For language validity, the scale was independently translated into Turkish by eight individuals whose native language is Turkish, who are researchers, and who have a strong command of English. By comparing these translations for linguistic consistency, the most appropriate expressions were selected to form the Turkish version of the scale. The final version of the scale was independently back-translated into English by two linguists who had not seen the original English form of the questionnaire but had been provided with detailed information about the subject. The English back-translations and the original scale items were then compared by the researchers, and an evaluation was conducted to determine whether they were consistent in meaning. The sample scale form was then prepared.

Confirmatory Factor Analysis was conducted to test the factorial structure validity of the NSPDS. For this purpose, a theoretical measurement model with nine subscales was created, defined as appropriate to the scope of the evaluation form, and tested.[23] The goodness-of-fit statistics obtained from the analysis were $\chi 2/df$ (Chi-square/df), (8678.488/2018) = 4.11, CFI = 0.91, TLI = 0.91, and RMSEA = 0.09. These results indicate that the model-data fit of the tested model is acceptably high. The analysis results are shown in Table 3.

For criterion validity, the coefficient between the total score of the "To Cheat" subscale of the NSPDS and the total scores of the "Cheating Tendency" subscale of the ADTS was calculated using Pearson's Product-Moment Correlation Coefficient, resulting in $r_{xy} = 0.61$ ($p = 0.00$), demonstrating scale-dependent validity.

According to the CFA analysis results, the item-factor loadings for the subscales were as follows: 0.67 to 0.97 for "Cheating," 0.50 to 0.88 for "Assist," 0.32 to 0.85 for "Cutting Corners," 0.33 to 0.90 for "Not My Problem," 0.84 to 0.93 for "Sabotage," 0.86 to 0.96 for "Test File," 0.81 to 0.93 for "Perjury," 0.74 to 0.93 for "Noncompliance," and 0.42 to 0.96 for "Stealing." It was found that the R^2 values for all items were relatively high, and all factor loadings were statistically significant at $p < 0.01$.

Table 3. Confirmatory Factor Analysis for the Nursing Student Perceptions of Dishonesty Scale

Adaptation Index	Good Adaptation Statistical Values of the NSPDS
$\chi 2/sd$	8678.488/2018 = 4.11
Comparative Fit Index (CFI)	0.91
Tucker-Lewis Index (TLI)	0.91
Root Mean Square Error of Approximation (RMSEA)	0.09

Discussion

Scale adaptation studies are an extensive process that requires meticulous attention. When adapting a scale from one language to another and subsequently to a different culture, it is essential not only to maintain a translation that is as faithful to the original as possible but also to make adjustments to align with the cultural characteristics of the target group.[25]

The test-retest method is a reliability assessment tool that provides consistent results by applying the same test to the same sample at two different times, serving as an indicator of stability over time.[19,26] A test-retest reliability coefficient approaching 1 indicates that respondents' scores are similar at different times and that the reliability is high.[27] A coefficient level of 0.70 is considered acceptable for scales with fewer items.[18] The reliability coefficients for the subscales of the NSPDS were found to range from 0.72 to 0.92. The analyses concluded that the test-retest reliability of the scale was high.

The evident conceptual structure of the scale items and their interrelated nature necessitate measuring the same structure. Reliability tests and scales are tools that demonstrate high internal consistency.[28] The Cronbach's Alpha coefficient, which provides information about internal consistency, is one of the most frequently used reliability indicators in both educational and psychological research.[29] The alpha coefficient measures the consistency of item scores with the total test score and indicates how well the items align with the entire test.[27] This coefficient ranges from 0 to 1, with values approaching 1 suggesting high internal consistency among the items in the scale.[19,29] There are various reports indicating that acceptable alpha values range from 0.70 to 0.95.[30] It has been stated that minimum alpha values should be 0.90 for physiological measurements, 0.70 for behavioral scales, 0.80 for inter-observer agreement, 0.70 for newly developed scales, and 0.80 for studies using previously developed scales.[26]

The Cronbach's Alpha reliability coefficients for the subscales of the NSPDS were found to be reliable at a high level. When the Cronbach's Alpha values of the scale were examined by removing individual items from the subscales, it was observed that removing any item did not significantly increase or decrease the reliability coefficient. Each item made a positive and similar contribution to the reliability coefficient of its respective subscale. Therefore, it was not necessary to remove any items from the subscales. The results indicated that the internal consistency reliability of the scale was high.

Content validity aims to determine whether the items on a scale adequately represent the domain being measured and ensure they do not include concepts outside the intended area of measurement.[16,22] Views were obtained from the subject experts for content validity.[16] The Content Validity Index was calculated for each item in this research study. Instead of comparing the CVI with a statistical criterion, a value of 0.80 was accepted as the standard.[20] The CVI values for the scale items ranged from 0.80 to 1.00. Since the CVI values were at the desired level, no items were removed from the Turkish scale. Following the pilot application, minor changes were made that did not alter the meaning, resulting in the final version of the scale. These results demonstrated that both language validity and content validity were achieved.[31]

The translation-retranslation method was used to ensure language validity for the NSPDS. During the translation process, the original

scale was adhered to as closely as possible, while suitable Turkish words and concepts were used to maintain the integrity of the meaning. A sample scale form was prepared and presented for expert review.

Confirmatory Factor Analysis, as used in scale adaptation studies, aims to validate the accuracy of an existing structure or a structure developed based on a theory previously determined by the researcher. It also seeks to demonstrate the extent to which the variable groups represent the factors.[16,27,32]

The goodness-of-fit indices obtained in CFA include $\chi 2/sd$, CFI, TLI, and RMSEA. The $\chi 2/sd$ is evaluated by dividing the chi-square value by the degrees of freedom. It is expected that this value should be below 2, with values below 5 interpreted as an acceptable fit.[16,33] A CFI of ≥0.90 and a TLI or NNFI of ≥0.90 indicate a good fit.[16,21] An RMSEA of ≤0.08 and $p < 0.05$ signifies a good fit, while values ≤0.10 indicate a weaker fit.[16]

At the conclusion of the CFA analysis conducted to assess the structure validity of the NSPDS, a good model-data fit was observed according to the fit indices. The tested model demonstrated an acceptably high level of model-data fit.

The factor load value is a coefficient that explains the relationship between items and factors. A load value of 0.60 or higher is considered high, regardless of the sign, while a load value between 0.30 and 0.59 is considered moderate. This variable is taken into account when determining whether to remove items. Factor load values can also be evaluated in terms of statistical significance as correlation values.[34]

PATH diagrams are the path schemes obtained at the conclusion of analyses in the structural equation model. After forming the appropriate matrix, the PATH diagram is drawn to display the variables of a model, t-values, factor loads, unexplained variances, and some good fit values.[35]

According to the CFA results, it was determined that the R^2 values (item reliability) of all items were high and that all factor loads (item validity) were statistically significant at the $p < 0.01$. These values are also reflected in the PATH diagram. The results obtained support the factorial structure validity of the NSPDS.

For criterion validity, correlation coefficients should be strong, within the range of 0.70-0.80, while values between 0.50-0.70 are considered evidence of a medium degree of validity. This correlation coefficient should not fall below 0.30.[22] The correlation coefficient obtained for criterion validity from the scales was found to be $r_{xy} = 0.61$; $p = 0.00$. These results indicate that the NSPDS has criterion-related validity.

Limitations

This methodological study was conducted at a single university in a region of Western Türkiye, so the results cannot be generalized.

Conclusion

The Turkish adaptation of the Nursing Student Perceptions of Dishonesty Scale is a valid and reliable measurement tool that can be used in the field of nursing within Turkish society. Following the adaptation study, no items were removed from the scale, preserving its original structure. The NSPDS consists of nine subscales and 67 items.

The NSPDS is considered a useful tool t for university educators to identify which behaviors are perceived as academic dishonesty by nursing students and understand the underlying reasons. Additionally, it can serve as a guide for developing effective ethical policies both institutionally and individually to prevent academic dishonesty, and it can assist education administrators and academicians in implementing preventive measures.

Acknowledgments: This study was presented as an oral presentation at the Palandöken International Nursing Education Congress held in Erzurum, Türkiye, on October 24-26, 2019.

Ethics Committee Approval: Ethics committee approval was obtained from Ethics Committee of Manisa Celal Bayar University (Approval Number: 20478486-050.04.04, Date: 20.04.2018).

Informed Consent: Written informed consent to participate in the study was obtained from the nursing students.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – G.N., N.Ö.; Design – G.N., N.Ö.; Supervision – N.Ö.; Resource – G.N., N.Ö.; Materials – G.N.; Data Collection and/or Processing - G.N.; Analysis and/or Interpretation - G.N., N.Ö.; Literature Review – G.N.; Writing – G.N., N.Ö.; Critical Review – G.N., N.Ö.

Conflict of Interests: The authors declare that they have no conflict of interest.

Funding: The authors did not receive support from any organization for the submitted work.

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