Psychometric Properties of the Turkish Version of Nursing Anxiety and Self-Confidence with Clinical Decision Making Scale (NASC-CDM-T)

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Abstract

Objective: This is a methodological, descriptive and cross-sectional study, which aimed to analyze the validity and reliability of the Nursing Anxiety and Self-confidence with Clinical Decision Making (NASC-CDM) Scale in Turkey. **Methods**: The sample of the study included a total of 334 sophomores, juniors, and seniors in a nursing department. The study data were collected using a demographic data collection form and the Nursing Anxiety and Self-confidence with Clinical Decision-Making Scale (NASC-CDM). **Results**: The Cronbach's alpha coefficients of the self-confidence scale and its sub-dimensions were .97, .96, .89, and .91, respectively. These values were found to be .97, .95, .91, and .90 in the anxiety section and its sub-subscales. The total item correlation scores ranged between .70 and .86 in the self-confidence section, and they ranged between .69 and .81 in the anxiety section (p<.001). The factor loads ranged between .65 and .84 in the self-confidence section, and they ranged between .43 and .86 in the anxiety section. The goodness-of-fit indices of both sections were above .90, and their root mean square error of approximation (RMSA) values were <.08. **Conclusion**: These results show that the scale is a valid and reliable tool for use with nursing students in Turkey.
Keywords: Anxiety, Clinical Decision-Making, Nursing Student, Self-Confidence.

Öz

Hemşirelikte Klinik Karar Verme Öz-güven Anksiyete Ölçeğinin Türkçe Psikometrik Özellikleri (NASC-CDM-T)

Amaç: Bu çalışma, Hemşirelikte Klinik Karar Verme Öz-güven ve Anksiyete Ölçeği'nin (NASC-CDM) Türkiye'deki geçerlilik ve güvenilirliğini analiz etmeyi amaçlayan tanımlayıcı ve kesitsel metadolojik bir çalışmadır. **Yöntem:** Araştırmanın örneklemini, hemşirelik bölümünde eğitim alan 334 öğrenci oluşturmuştur. Çalışmanın verileri, demografik veri toplama formu ve Hemşirelikte Klinik Karar Verme Öz-güven ve Anksiyete Ölçeği (NASC-CDM) kullanılarak toplanmıştır. **Bulgular:** Öz-güven ölçeği ve anksiyete alt boyutlarının Cronbach alfa katsayıları sırasıyla .97, .96, .89 ve .91 olarak bulunmuştur. Bu değerlerin anksiyete bölümünde ve alt ölçeklerinde .97, .95, .91 ve .90 olduğu bulunmuştur. Öz güven bölümünde toplam madde korelasyon puanı .70 ile .86 arasında değişmekte ve anksiyete bölümünde .69 ile .81 arasında değişmektedir (p <.001). Faktör yükleri öz-güven bölümünde .65 ile .84 arasında değişmekte ve anksiyete bölümünde .43 ile .86 arasında değişmektedir. Her iki bölümün iyi uyum indeksleri .90'ın üstündedir ve RMSEA değerleri <.08 dir. **Sonuç:** Bu sonuçlar ölçeğin Türkiye'de hemşirelik öğrencileri için geçerli ve güvenilir bir araç olduğunu göstermektedir.
Anahtar Kelimeler: Anksiyete, Klinik Karar Verme, Hemşirelik Öğrencisi, Öz-Güven.

C linical decision-making is defined as selecting the most appropriate choices to solve the problems of patients (Tiffen et al. 2014; Sucu et al. 2012; Azak and Taşçı, 2009). The increasing complexity of healthcare services has led to an increase in the need for caregiving and in the nurses' responsibility for making decisions (Bjork and Hamilton, 2011; Thompson, 2003). Lauri et al. (2001) stated that the factors affecting clinical decision-making are related to nurses' education level, knowledge, clinical experience, work area, and residence. Good clinical decision-making skills appropriately applied increases the quality of care, decreases the number of medical errors, reduces the costs of care and treatment through the more effective use of resources, and thereby increases both patient satisfaction and nurse motivation (Thompson, Aitken, Doran and Dowding, 2013). Therefore, it has been emphasized in recent years that different education methods should be used to improve clinical decision-making, beginning in the student years (Dowding, Gurbutt, Murphy, Lascelles, Pearman and Summers, 2012); because students' clinical decision-making skills increase with clinical experience at each stage of education (Bulut, 2009; Atasoy and Sütütemiz, 2014).

Students' clinical decision-making skills are affected by factors such as their self-confidence, their relationships with healthcare personnel or patients, personal comfort, and understanding clinical processes (White, 2014; Campbell, 2008; Garrett, 2005; Hagbaghery, 2004). The two most important of these factors are self-confidence and anxiety experienced in the clinic (White, 2014; Campbell, 2008; Hagbaghery, 2004). Nurses gain self-confidence as they gain experience and thereby feel as more competent. In particular, they deal more easily with emergency cases that require immediate intervention (Fry and MacGregor, 2014). Therefore, it is important to improve nursing students' self-confidence in their clinical decision-making (Thompson et al. 2013; Hagbaghery, 2004; White, 2003). Porter (2013) found that the nursing students having sufficient self-confidence were those who best used the learning opportunities during clinical training to improve their clinical decision-making skills; so becoming better prepared for clinical practice. Self-confidence has a positive effect on clinical decision-making, as it reduces the anxiety level of nursing students, and eliminates negative feelings about themselves (White, 2014).
On the other hand, many problems including insufficient experience, lack of knowledge, and communication problems of students, along with the attitudes, focus on control, or values and beliefs of instructors can cause nursing students to experience anxiety in clinics (Bakr, Sherif, Eid and ELshal, 2013). This leads to a decrease in their motivation in clinical practice and has a negative effect on their clinical decision-making skills (Aktaş ve Karabulut; 2016; Jahanpour, Sharif, Salsali, Kaveh and Williams, 2010), preventing these skills from sufficiently improving (Gillespie, 2010). It may also result in 'clinical misjudgment,' 'faulty decision making' and 'incorrect patient care' in their future working life (Gillespie, 2010).

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Nevertheless, low-level anxiety may stimulate thinking processes. (Atay, 2011; White, 2014). However, studies show that high anxiety levels have a negative effect on students' communication with healthcare professionals, the feeling that professional incompetence prevents them from meeting patient expectations, generates the fear of harming patients and concerns about making mistakes in hospital procedures (Atay, 2011). This anxiety negatively affects clinical decision-making and reduces student self-confidence (Atay, 2011; White, 2014). Therefore, how the clinical decision-making skills of students improve during their education and the effects of self-confidence and anxiety levels on them should be analyzed (Gillespie, 2010; Atay, 2011; White, 2014); and reliable and valid tools are required for this analysis (Gillespie, 2010; Atay, 2011; White, 2014).

The factors affecting the clinical decision-making skills of students are frequently addressed in the literature (White, Bjork and Hamilton, 2011; Thompson, 2003; Lauri et al., 2001). However, a limited number of studies in the literature analyzed the effects of self-confidence and anxiety on clinical decision-making (Aktaş and Karabulut, 2016; White, 2014; Campbell, 2008; Hagbaghery, 2004), and none of these were conducted in Turkey. Also, no valid and reliable tool exists in Turkey to evaluate these two factors. Therefore, this study aimed to test the Turkish validity and reliability of the Nursing Anxiety and Self-Confidence with Clinical Decision-Making Scale (NASC-CDM).

Methods

Study Design
This is a methodological, descriptive and cross-sectional study aimed at evaluating the validity and reliability of NASC-CDM scale in Turkey.

Sample
The study was conducted in two faculties of nursing in a city in western Turkey between May 1 and June 30, 2015. Expert recommendation is that study samples include 10 participants for each item in scale development or adaptation studies unless there is difficulty contacting the sample (Nunnally and Bernstein, 2010; Rattray and Jones, 2007; Şencan, 2005). The Nursing Anxiety and Self-confidence with Clinical Decision-Making Scale include 27 items (White, 2014). The authors included ten nursing students for each item to carry out the validity and reliability analyses, and the sample consisted of 270 nursing students in total.

In both schools, clinical training and practice start in the second year. It was planned that the sample of this study included sophomores, juniors, and seniors of both schools since the scale, of which psychometric aspects were to be evaluated, measured students' self-confidence and anxiety levels in making clinical decisions.

The authors planned to contact all students enrolled in the two schools to clearly demonstrate the correlations between the scale items and the scale and to increase its generalizability. The study recruited 351 students who were in the class on the day when data was collected and who volunteered to participate in this study. Seventeen students were excluded from the study; eight were also working as nurses and nine did not fill out the forms completely. The study sample included 334 nursing students who agreed to participate in the study on a voluntary basis, had not failed a year of nursing school and filled out the study forms accurately. The response rate was 97.6%.

Data Collection Instruments
Demographic Form: The form included seven questions about students' gender, age, the school in which they were enrolled, and their working status as a nurse, in which case the length of their employment.

The Nursing Anxiety and Self-confidence with Clinical Decision-Making Scale (NASC-CDM): NASC-CDM was developed by Dr. Krista A. White (White, 2014). This scale evaluates self-confidence and anxiety levels of nursing students in clinical decision-making. The scale provides separate scores for self-confidence and anxiety.

The self-confidence section of the form has three sub-scales: 'using sources to acquire information and listening to them carefully', 'using the information in hand to determine the problem', and 'knowing and taking action'. The sub-scale 'using sources to acquire information and listening to them carefully' consists of 13 items. The minimum score was 13, and the maximum score was 78 on the subscale. The sub-scales for 'using the information in hand to determine the problem' and 'knowing and taking action' each consist of 7 items; the minimum score was 7, and the maximum score was 42 on each of these subscales. The minimum score on the self-confidence and anxiety sections was 27, and the maximum score 162. Higher scores on the self-confidence section and its sub-scales indicated that students' self-confidence levels were high. The self-confidence section of the scale explained 69.5% of the total variance (White, 2014). The exploratory factor analysis revealed that the factor loads of self-confidence section ranged between .40 and .97 (White, 2014).

The anxiety section has three sub-scales: 'using sources to acquire information and listening to them carefully', 'using the information in hand to determine the problem', and 'knowing and taking action'. This is a 6-point Likert-type scale. The 'using sources to acquire information and listening to them carefully' sub-scale consists of 13 items. The minimum score was 13, and the maximum score was 78 on the subscale. The sub-scales 'using the information in hand to determine the problem' and knowing and taking action' are each comprised of 7 items; with a minimum score of 7, and a maximum score of 42. Lower scores on anxiety section and its sub-dimensions indicated that the anxiety levels of students were low. The anxiety section of the scale explained 63.4% of the total variance. The factor loads of section ranged between .40 and .96 (White, 2014).

Procedure
Translation of the NASC-CDM
Three experts in English linguistics made three different Turkish translations of the scale. After the scale was translated into Turkish, the researchers collaboratively created the Turkish scale. Another linguist who was an expert in both English and Turkish translated the Turkish form back into English.

Content Validity of the NASC-CDM
The authors obtained opinions on the translated scale from ten experts. Expert opinions were sought from eight nursing faculty members (professors in nursing), and two head nurse. The scale level-content validity index (S-CVI) and item level-content validity index (I-CVI) were calculated (DeVellis, 2012; Polit, Beck and Owen, 2007; Terwee et al., 2007).

Pilot Study
It was recommended that the readability and clarity of the items and the scale be assessed in a small pilot study, in which scales be administered to a group of 20–30 persons not included in the sample with similar characteristics regarding language and ability to understand the items (Şencan, 2005). After its initial translation, the authors administered the scale to a sample of 20 participants who were not included in the study sample but had similar characteristics.

Data Collection
Data was collected on different days from the two nursing schools. A course hour was established with the deaneries for each class and data was collected in these course hours. The data was collected by researchers between May 1 and June 30, 2015 through forms distributed to students in the classroom. Before students filled the forms, researchers explained the scale and demographic form. Researchers collected completed forms.

Data Analysis
The authors analyzed the demographic data using means and percentages. The validity analysis of the scale was done using exploratory factor analyses (EFA) and confirmatory factor analyses (CFA). To conduct the factor analyses, the authors randomly divided the database into two using the statistics program; one part was used for the EFA and the other part for the CFA. After the EFA, The sufficiency and suitability of the data for the factor analysis were analyzed using Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's sphericity test. The authors used principle component analysis with varimax rotation to determine the construct validity of the scale, as used in the original study (White, 2014). The eigenvalue was required to be ≥1.00 and above to decide the most suitable structure and factor number (Burns and Grove, 2009). Experts stress that the minimum factor load be .30 (Burns and Grove, 2009). After CFA, the authors analyzed Pearson chi-square, degree of freedom, root mean square error of approximation (RMSEA), goodness of fit index (GFI), comparative fit index (CFI), and normal fit index (NFI) as the goodness-of-fit indices. The internal consistency of the scale was evaluated using Cronbach's alpha, Spearman-Brown, and Guttman split-half coefficients. The authors analyzed the item-total score and item-sub-scale total scores using Pearson correlation analysis. The stability of the scale was evaluated using the t-test and Pearson's correlation analysis. The significance level was 0.05.

Ethical Considerations
The authors received permission by e-mail from Dr. Krista A. White to adapt the NASC-CDM for Turkish and to use it in this study. The authors also obtained written consent from the Ethics Board of the University (IRB approval number: 2015-67) and from the dean offices of the Faculty of Nursing to conduct the study. Nursing students also provided their informed consent.

Results
The average age of the students was 21.8 $\pm$ 1.43 years. Of the students, 83.2%   (n=278) were female, 47.7% (n=156) were sophomores, 29.0% (n=97) were juniors and 24.3% (n = 81) were seniors. Of them, 3.9% (n=13) graduated from vocational health high schools.

Validity Analyses of the NASC-CDM

Content Validity of NASC-CDMs
The authors obtained the opinions of ten experts. Sub-scales of self-confidence I-CVI between experts were detected in the ranges of .83–.97, .82–.98, and .84–.96, respectively. S-CVI of Self-confidence Section was .91. Sub-scales of anxiety section I-CVI between experts were detected in the ranges of .82–.96, .83–.91, and .88–.97, respectively. S-CVI of the anxiety Section was .94.

Construct Validity of NASC-CDM's
EFA revealed that the KMO coefficient was .97, and the result of the Bartlett's test was $X^2 = 8185.524$ and p <.001. The EFA showed that the scale items accumulated under three factors in the self-confidence section. In the self-confidence section, the rate of the total explained variance was 69.4%. According to the result of the EFA, the factor loads of the first sub-scale of the self-confidence section were between .57 and .82, those of the second sub-scale were between .39 and .80, and those of the third sub-scale were between .42 and .80. According to the results of the CFA, the factor loads of the first sub-scale of the self-confidence section were between .71 and .84, those of the second sub-scale were between .70 and .83, and those of the third

sub-scale were between .65 and .80. The goodness-of-fit indicators of the model were found to be GFI = .91, NFI = .98, NNFI = .99, CFI = .99, IFI = .99, X² = 959.71, df = 312, p<0.001 and RMSEA =.079 (Figure 1).
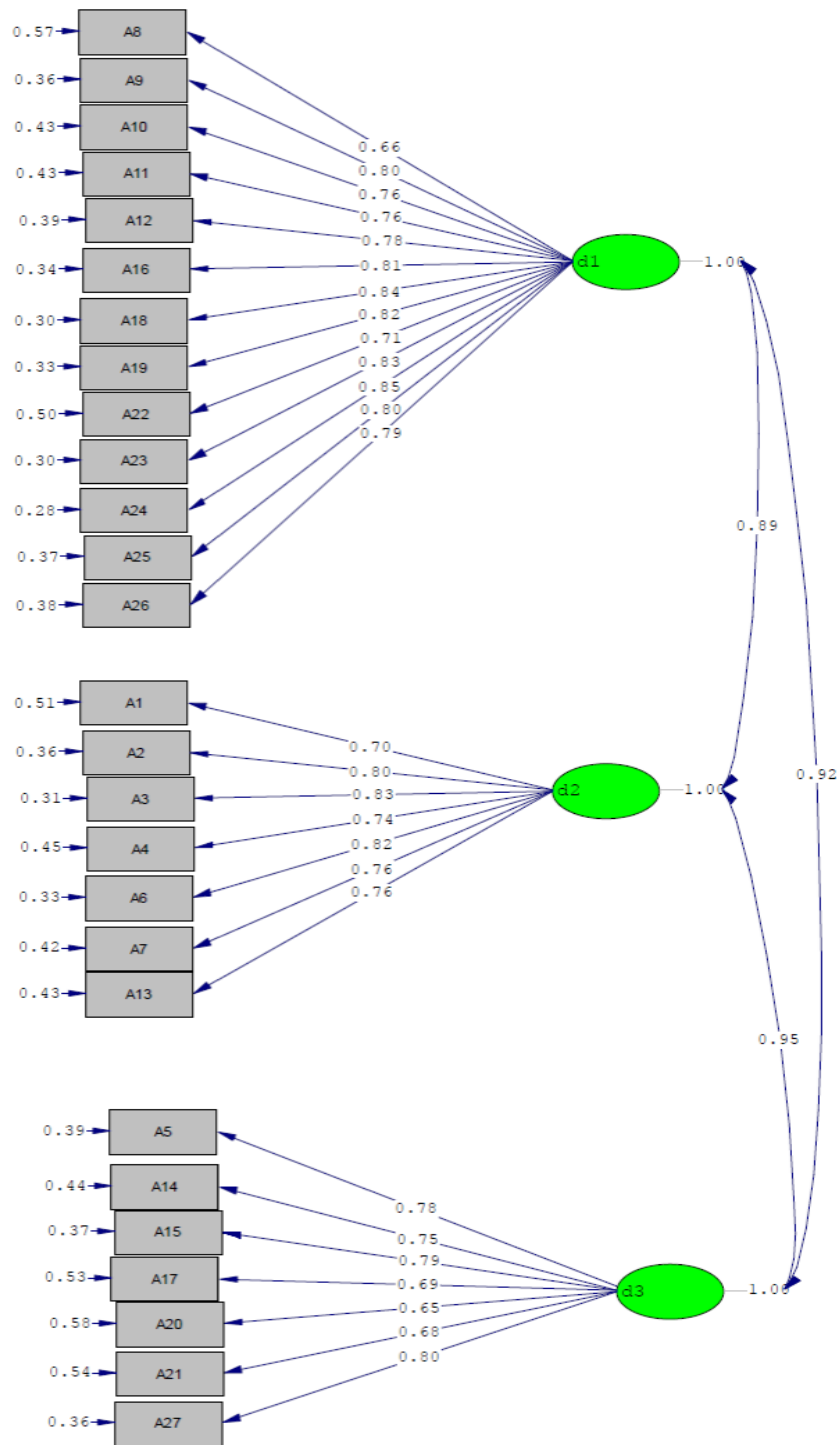
Chi-Square=959.71, df=312, P-value=0.00000, RMSEA=0.079

Figure I. Confirmatory Factor Analysis of Anxiety Section

In the anxiety section of the scale, the KMO coefficient was .97, and the result of the Bartlett's test was $X^2 = 7518.517$ and p<.001. The EFA showed that the scale items accumulated under three factors in anxiety section. In the anxiety section, the rate of the total explained variance was 66.9%. The factor loads of the first sub-scale of the anxiety section were between .40 and .80, those of the second sub-scale were between .49 and .76, and those of the third sub-scale were between .42 and .82. According to the results of the CFA in the anxiety section, the factor loads of the first sub-scale were between .74 and .86. The factor loads of the second sub-scale were between .43 and .84, and the factor loads of the third sub-scale were between .74 and

.84. The goodness-of-fit indicators of the model were found to be GFI= .90, CFI= .98, NFI= .97, NNFI= .98, IFI = .98 and X² = 868.62, df = 314, p<.001 and RMSEA=.073 (Figure 2).

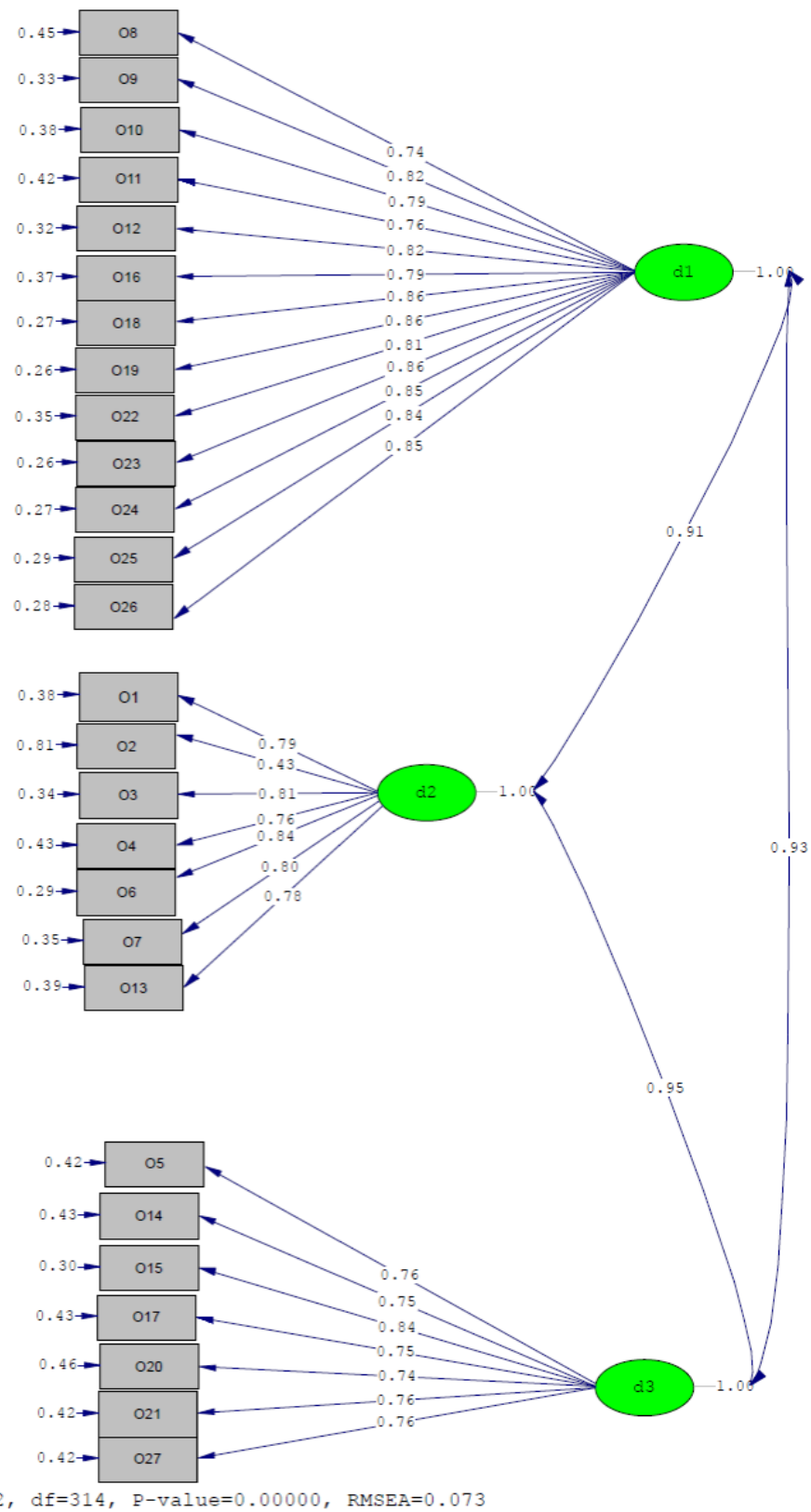Chi-Square=868.62, df=314, P-value=0.00000, RMSEA=0.073

Figure II. Confirmatory Factor Analysis of the Self-confidence Section

Reliability Analysis of the NASC-CDM

Table 1. Reliability Analysis of the Self-confidence Section and Its Sub-Scale Scores (n=334)

Self-confidence Section	Cronbach's α	Spearman-Brown	Guttman split-half	M ± SD	Min-Max	Floor Effect %	Ceiling Effect %
Dimension 1	.96	.96	.96	60.58±12.99	16-78	0.6	7.5
Dimension 2	.88	.86	.84	30.76±6.66	11-42	0.3	6.0
Dimension 3	.91	.92	.90	29.72±7.09	7-42	1.4	6.3
Total	.97	.95	.95	121.15±25.48	39-162	0.3	5.1

The total Cronbach's alpha of the self-confidence section of the scale was .97. The alpha coefficient of the first sub-scale was .96, that of the second sub-scale was .88, and that of the third sub-scale was .91 (Table 1).

The split-half analysis of the entire scale revealed that the Cronbach's alpha of the first half was .94 and that of the second half was .96. The coefficient of the correlation between the first and second halves was .91 (p<.05). In the first sub-scale, the Cronbach's alpha coefficient of the first half was .92 and that of the second half was .94. The coefficient of the correlation between the first and second halves was .92 (p <.050). In the second sub-scale, the Cronbach's alpha coefficient of the first half was .76 and that of the second half was .86. The coefficient of the correlation between the first and second halves was .75 (p<.050). In the third sub-scale, the Cronbach's alpha coefficient of the first half was .85 and that of the second half was .79. The coefficient of the correlation between the first and second halves was .85 (p <.050). The Spearman-Brown coefficient of the entire self-confidence section was .95; that of the first sub-scale was .96, that of the second sub-scale was .86, and that of the third sub-scale was .92. The Guttman split-half coefficient of the entire scale was .95; that of the first sub-scale was .96, that of the second sub-scale was .84, and that of the third sub-scale was .90 (Table1).

It was found that the floor and ceiling effects of the self-confidence section of the scale were below 15.0% (Table 1).

Table 2. Reliability Analysis of the Anxiety Section and Its Sub-Scale Scores (n=334)

Anxiety Section	Cronbach's α	Spearman-Brown	Guttman split-half	M ± SD	Min-Max	Floor Effect %	Ceiling Effect %
Dimension 1	.95	.92	.92	29.19±12.18	13-73	5.7	0.3
Dimension 2	.91	.88	.87	17.69±6.53	7-38	4.2	0.6
Dimension 3	.90	.89	.87	18.51±6.98	7-40	5.1	0.4
Total	.97	.93	.93	65.15±24.27	27-147	2.4	0.1

The total Cronbach's alpha coefficient of the anxiety section of the scale was .97. The alpha coefficient of the first sub-scale was .95, of the second sub-scale .91, and that of the third sub-scale was .90 (Table 2).

The split-half analysis of the entire scale revealed that the Cronbach's alpha of the first half was .95 and that of the second half was .95. The coefficient of the correlation between the first and second halves was .88 (p < .05). In the first sub-scale, the Cronbach's alpha coefficient of the first half was .91 and that of the second half was .92. The coefficient of the correlation between the first and second halves was .86 (p < .050). In the second sub-scale, the Cronbach's alpha coefficient of the first half was 0.88 and that of the second half was .83. The coefficient of the correlation between the first and second halves was .78 (p < .050). In the third sub-scale, the Cronbach's alpha coefficient of the first half was .85 and that of the second half was .77. The coefficient of the correlation between the first and second halves was .80 (p < .050). The Spearman-Brown coefficient of the entire anxiety section was .93; while it was .92 in the first sub-scale, .88 in the second sub-scale, and .89 in the third sub-scale. The Guttman split-half coefficient of the whole scale was .93; that of the first sub-scale was .92, of the second sub-scale .87, and that of the third sub-scale .87 (Table 2).

The floor and ceiling effects of the anxiety section were found to be below 15.0% (Table 2).

Table 3. Characteristics of Items in Scale Scores (n=334)

Dimensions	Items	Anxiety Section		Self-confidence Section	
		Item-total score correlations (r)*	Item - sub-scale score correlations (r)*	Item-total score correlations (r)*	Item - sub-scale score correlations (r)*
Dimension 1 Using resources to collect information and listening carefully	8	.69	.69	.74	.77
	9	.78	.82	.80	.85
	10	.75	.78	.79	.80
	11	.76	.77	.77	.78
	12	.78	.80	.81	.84
	16	.79	.82	.79	.81
	18	.81	.84	.84	.87
	19	.80	.82	.86	.86
	22	.70	.74	.79	.83
	23	.81	.84	.85	.87
	24	.81	.86	.82	.87
	25	.78	.81	.84	.86
	26	.78	.81	.85	.87
Dimension 2 Using information to see the big picture	1	.69	.79	.78	.83
	2	.77	.85	.81	.86
	3	.79	.84	.79	.85
	4	.71	.79	.75	.81
	6	.78	.85	.82	.86
	7	.76	.79	.77	.83
	13	.76	.78	.78	.81
Dimension 3 Knowing and acting	5	.78	.75	.77	.76
	14	.74	.82	.74	.81
	15	.77	.84	.81	.85
	17	.68	.79	.72	.83
	20	.64	.80	.70	.82
	21	.71	.72	.76	.80
	27	.80	.80	.78	.77

Significant at *p<.001 level

It was found that the correlation between the self-confidence section and the items of the self-confidence sub-scales ranged between .70 and .86. It was found that the item sub-scale total score correlations in the first sub-scale of the anxiety section were between .77 and .87, those of the second sub-dimension were between .81 and .86, and those of the third sub-scale were between .76 and .85 (Table 3).

It was also found that the correlations between the items total score of the anxiety section ranged between .69 and .81. The item sub-scale score correlations in the first sub-scale of the anxiety section were between .69 and .86, those of the second sub-scale were between .78 and .85, and those of the third sub-scale were between .72 and 0.84 (Table 3).

Table 4. The Results of the Test-Re-Test Analysis of the Self-Confidence Section (N=53)

Self-confidence Section		First Administration M ±SD	Second Administration M±SD	t	p	r	p
Sub-scale	Dimension 1	66.90±10.58	66.15±10.35	.77	.082	.96	<.001
	Dimension 2	34.58±6.04	34.03±6.22	.77	.215	.87	<.001
	Dimension 3	34.33±6.19	33.77±6.01	1.25	.064	.94	<.001
	Total	135.83±22.05	135.11±20.73	1.89	.442	.95	<.001

Table 5. The Results of the Test-Re-Test Analysis of the Anxiety Section (N=53)

Anxiety Section		Initial Test M ±SD	Second Test M±SD	t	p	r	p
Sub-scale	Dimension 1	24.63±8.92	24.13±7.99	1.71	.094	.98	<.001
	Dimension 2	14.52±4.44	14.16±3.88	1.81	.076	.95	<.001
	Dimension 3	14.51±5.05	14.22±4.34	1.18	.244	.94	<.001
	Total	53.66±17.65	52.67±15.22	1.51	.137	.97	<.001

There was no statistically significant difference between the Self-confidence and Anxiety sections, and the mean score of the two measurements of the sub-scales carried out over a three-week interval (p > .010, Table 4, Table 5). There was a positive and highly significant correlation between the total score of the two sections and the test-retest scores of its three sub-scales (p < .001, Table 4, Table 5). It was found that the test-retest reliability coefficients of each item were between .51 and .94 and were statistically significant (p < .001).

Discussion

Validity Analyses of the NASC-CDM

In this study, I-CVI and S-CVI values for both sections were > .80. Both I-CVI and S-CVI values should be above .80 to be able to determine a consistency between the expert opinions (Polit, Beck and Owen, 2007; Terwee et al., 2007). The I-CVI and S-CVI results in this study showed that there was consistency between the experts, that the scale items were suitable for the Turkish culture, and that the scale accurately measured the subject and had content validity.

In the EFA, it was found that there were three factors with eigenvalues > 1.00 in both self-confidence and anxiety sections (Sencan, 2005). The relevant literature stresses that the explained variance should be between 40.0% and 60.0%; and that the higher the total variance, the stronger the construct validity of the scale will be (Sencan, 2005). In this study, the total variance of self-confidence and anxiety sections were above 60.0%, and both sections had very high total explained variances. This result shows that both sections of the scale had very strong factor structures. In both self-confidence and anxiety sections, the values found by this study were similar to those found in the original study (White, 2014). These results support the construct validity of the scale.

The factor loads of the three sub-scales were above .30 in both self-confidence and anxiety sections. The relevant literature emphasizes that the minimum factor load should be ≥ .30, and items with values less than this should be excluded from the scale (DeVellis, 2012; Terwee et al., 2007). The factor loads of the EFA in this study and the factor loads in the original study (White, 2014) were similar. These results showed that the scale had a strong factor structure.

The CFA revealed that the factor loads of the three sub-scales of the self-confidence and anxiety sections were > .30, and their goodness-of-fit indices were > 0 90, while the RMSEA was < .08. In both sections, the result of the division of the chi-square value by the degree of freedom was found to be less than five. The relevant literature indicates that the goodness-of-fit indicators of the model being > .90, the X^2/DF section being less than five and the RMSEA being < .08 are positive goodness-of-fit indicators (Simsek, 2010; Hooper, Coughlan and Mullen, 2008). The CFA results showed that the data were consistent with the model and confirmed the three-factor structure. The CFA results in this study were not compared to the original scale since the original scale did not conduct CFA (White, 2013).

Reliability Analysis of the NASC-CDM

In this study, the Cronbach's Alpha coefficient, Spearman-Brown, and Guttman split-half coefficients was found to be > .70 for both sections and their sub-scales. The study results showed that the Cronbach's alpha values for both sections and their sub-scales indicate the high reliability of the scales. These results are similar to the results of the original scale (White, 2014); they show that the items measured for the subject, are related to the subject, and that the scale is highly reliable for use in Turkey.

It is desirable for Ceiling and floor effects to be < 15.0% (Terwee et al., 2007; Sencan, 2005). In this study, the floor and ceiling effects of all the sub-scales values in both self-confidence and anxiety sections were < 15.0%. These results show that the scale and its sub-dimensions are highly reliable.

The item-total score correlation should be > .20 and positive (Johnson and Christensen 2014; DeVellis, 2012). In this study, it was found that both item-total score correlation coefficient and the item-sub-scale total score correlation coefficient were positive and > .20. According to these results, all items had a high correlation with the total score, and the total score of their sub-scales accurately measured self-confidence and anxiety with a strong item reliability (p < .001).

In test-retest analyses, there was no statistically significant difference between the two measurement mean scores obtained for either section or their sub-scales over a three-week interval (p > .010). There was a positive and significant correlation between the test-retest scores of the two sections and their sub-scales (p < .010). The findings of this study revealed that the test-retest results were similar. The coefficient of the correlation between each item in the first and second administration should be at least .20 (Nunnally and Bernstein, 2010; Rattray and Jones, 2007). In this study, the test-retest reliability coefficients of each item in the self-confidence and anxiety sections were positive and > .20 (p < 0.001). These results showed

that participants gave similar responses to the items in both measurements, that the items accurately represented the subject, and were understandable.

Despite its strengths, this study has some limitations. The first is that only voluntary students participated in the study, which means that the sample did not include all the students. The second limitation is that the study was conducted only in the schools in the western regions of Turkey.

Conclusion and Implications

The study results reveal that the Nursing Anxiety and Self-confidence with Clinical Decision Making Scale is a highly valid and reliable tool for use in Turkey. Instructors can use this scale for longer durations to determine students' self-confidence and anxiety levels in clinical decision-making and to compare the development of their skills in making these decisions by year of study. Instructors can also determine the factors that affect students' self-confidence and anxiety levels in clinical decisions and use the results to develop students' clinical skills.

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