

Original Article

The Control over Nursing Practice Scale: Reliability and Validity of the Turkish Version of the Instrument

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Abstract

Background: The concept of control over nursing practice is associated with a healthy work environment and professional practice. Additionally, it is important to provide high quality, safe and cost effective nursing care and improve nursing care outcomes. To improve nurses' control over nursing practice, it is a necessity to assess nurses' control over nursing practice using psychometric measures To date, no suitable measurement tool has been available for assessing control over nursing practice in Turkey.

Objective: The aim of this methodological study was to examine the validity and reliability of the Turkish version of the Control Over Nursing Practice Scale (CONP-S).

Methodology: Sample of this study consisted of 250 nurses from two hospitals. Data were collected through Nurses Data Sheet and CONP-S between the period of 23 February– 30 April 2015. Experts' viewpoints were used to determine language validity of the scale, Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM) were used to evaluate the construct validity. Cronbach's α reliability coefficient, item analysis, test-retest analysis were conducted to evaluate the reliability of the scale.

Results: Content Validity Index was found as 0.89. The results of confirmatory factor analysis (CFA) supported the single factor structure and this single factor explained 43.776% of the total variance in nurses' control over nursing practice. This was confirmed (fit indices: $\chi^2/df=3.32$, RMSEA= 0.097, NNFI= 0.95, CFI=0.96, GFI= 0.98) using structural equation modelling. Cronbach's alpha coefficient for the scale was 0.94 and the test–retest reliability was 0.748 ($p<0.001$).

Conclusions/Implications for Practice: According to the findings, validity and reliability of the Turkish version of Control Over Nursing Practice Scale was found sufficient to measure nurses' control over nursing practice. The scale can be used for cross-cultural studies of control over nursing practices.

Keywords: control over nursing practice, nursing, reliability, validity.

Introduction

Health care institutions are places where there is no room for errors or uncertainties as decisions must be made efficiently and rapidly due to the inherent urgency of the services they provide. Accordingly, at these institutions, where the aim is to provide high-quality and safe patient care services, there is a need for nurses who can participate in decisions, identify solutions to problems, exercise initiative, and be accountable

for the outcomes achieved—in other words, those who have control over the general practice.

Gerber et al. (1990) described having control over nursing practices as “*perceived freedom to evaluate and modify nursing practices, make independent and interdependent decisions related to patient care, exercise authority and take on accountability for the outcomes of those decisions, and influence the work environment at the unit level of organization and to influence the working environment and staffing at the unit level*”

of analysis.” On the other hand, according to the study conducted by Kramer et al. (2008), “*Control over nursing practices is defined by nurses in magnet hospitals as input, including access to and exchange of information, views and judgments, and decision-making on issues of importance—practices, standards, policies, equipment—that affect the nursing profession, the practice of nursing, and the quality of patient care.*”

Control over practices, as an indicator of the fact that high-quality and safe nursing services are being provided at health care institutions, is considered one of eight requirements for magnet hospital structuring and was indicated to be the most definitive magnet hospital characteristic by the nurses in the study conducted by Kramer and Schmalenberg (2004). Moreover, the same authors emphasized in another study the need to have control over nursing practices to sustain a productive and satisfactory working environment (Kramer and Schmalenberg, 2008).

According to the journal issued by the Institute of Medicine (2004), “*Keeping Patients Safe: Transforming the Work Environment of Nurses,*” having control over nursing practices is defined as one of the important working environment qualifications to improve patient safety. Furthermore, the need to include nurses who serve as keen defenders of patients in the decision-making processes regarding the development of care has been emphasized. On the other hand, the American Association of Critical Care Nurses (2005) determined six standards to create and sustain healthy and safe working environments. Effective decision making, as one of these six standards, requires the partnership of nurses in the development of policies, guidance, and evaluation in patient care and their leadership in the operations of the organization.

The effects of having control over practices on the outcome of patient care and the behavior of nurses have been demonstrated in some studies. In these studies, it has been determined that control over nursing practices is a significant determinant of nurse job satisfaction and that it positively affects job satisfaction (Walls, 1992; Laschinger and Havens, 1996; Duffield et al., 2009; Mallidou et al., 2011). Furthermore, a positive relationship has been determined between having control over nursing practices and teamwork (Castner et al., 2013; Ajeigbe and

McNeese-Smith, 2013). According to the study conducted by Kramer et al. (2009), having control over practices means that nurses can provide evidence-based practice for improving the quality of patient care. Moreover, having control over nursing practices is also important in ensuring that nurses consider themselves important members of the team and share the recognition that the hospitals receive in terms of their status and reputation (Hinshaw, 2007). Thus, the results of these studies and various observations reveal the significance of the effect of control over nursing practices on the institutional, personnel, and patient care outputs. As stated by Weston (2009), the literature shows that studies have used different tools to assess control over nursing practices. Some of these are the “Control Scale,” “Autonomy and Control Scale,” “Decisional Involvement Scale,” “Nursing Work Index Revised,” “Practice Environment Scale of the Nursing Work Index,” “Essential of Magnetism,” and “Participation in Decision Activities Questionnaire” (Weston, 2009). The Control Over Nursing Practice Scale (CONP-S), developed by Gerber et al. (1990), has been used most widely to measure control over nursing practices directly (Weston, 2009; Yurek, 2010). Therefore, this study aimed to provide nursing researchers with a valid and reliable scale to measure the control nurses have over practices directly.

Method

Design

The study was conducted to determine the reliability and validity of the Turkish version of the CONP-S.

Study Sample

The study was conducted at a hospital of the Ministry of Health and a 500-bed university hospital, both of which provide general health care services. The adaptation of the “**CONP-S**” to the Turkish setting required validity and reliability studies, and, therefore, the number of participants used was 10 times the number of the items included in the scale (Esin, 2014). The original scale comprises 23 items. Therefore, a sample of 250 nurses was employed at the content validity stage of the study. The university hospital from which the sample was taken had a bed capacity of 918 and 647 nurses. The Ministry of Health Hospital had a bed capacity of 1002 and 687 nurses. In consideration of the stratum

weights of the hospitals, the researcher selected 123 nurses from the university hospital (49%) and 127 from the Ministry of Health hospital (51%) (Table 1). However, in the test–retest stage, the same scale was reapplied to 25% of the nurses sampled (60 nurses) following a 4-week interval (Alpar, 2012). The criterion for being included in the sample was having worked at the institution in question for the last 6 months.

In total, 60.8% of the nurses who participated in the study had a bachelor's degree, 12.4% were nurses in charge of the wards, and 87.6% worked as ward nurses. From these, 34% worked in the intensive care units and 66% in the wards. Further, 48.8% of the nurses worked for 41–50 hours a week, 46.8% for 40 hours, 65.2% in shifts, and 34.8% during the daytime. Additionally, 68.8% of the nurses did not have an occupational certificate or a specialization (Table 2).

The average age of the nurses sampled was 33.08 years (33.08 ± 7.05 years). The median time they had spent in their occupation was 9.66 years (8 months–35.25 years), and the median times in their present institutions and clinics were 5 (6 months–35.25 years) and 3.30 years (6 months–35.25 years), respectively (Table 2).

Instruments

A form that included information on nurse characteristics and the CONP-S was used to collect the data in this study.

Nurses Data Sheet

This form contained questions about the nurses in the study sample, such as age, education, time in the nursing occupation, institution previously worked for, position employed at, clinic worked in, weekly hours worked, manner of employment, and occupational certificate/specialty status.

Control Over Nursing Practice Scale

This scale was developed in 1990 by Gerber et al. to measure the control perceived over professional care provided directly within the scope of nursing services. The scale, which is single-dimensional and a control level determinant, consists of 23 items (transferred by: Weston, 2006; Weston, 2009). It was developed using a 7-point Likert-type scale ranging from “has no control” (1 point) to “has full control” (7 points). The scale has 2 different versions: individual and group levels. Statements at an individual level are generally in the following

form: “I am free...” while the group level form uses expressions such as “We are free....”

Both levels were measured in the studies conducted by Walls (1992) and Weston (2006). Walls (1992) measured the validity and reliability of the scale at the group level. He reported a .66 intra-class correlation coefficient, .95 internal consistency coefficient, and .36–.79 total item correlation coefficient, all evidencing the optimal reliability of the scale. Weston (2006), in her study titled “Antecedents of Control Over Nursing Practices,” performed the validity and reliability assessment of the CONP-S. The Cronbach's α of the scale at an individual level was .94 with a factor load range of .41–.79 and an explained variance percent of 43.3; at the group level, the internal consistency coefficient was .76. These findings show the CONP-S to be valid and reliable (Alpar, 2012).

Yurek (2010), in his study titled “Relational Resource Distribution Model: Work Planning of Nurses and Assessment of the Control over Nursing Practices,” stated that he had used 12 different measurement tools in 24 studies aiming to determine the control over nursing practices. According to this study, the CONP-S was the most frequently used scale in the field. The CONP-S has also been mentioned as the most widely used scale in the literature by Weston (2009).

Procedures

Translation Procedure

To ensure language equivalency, the scale was primarily translated into Turkish by 4 specialists in the field of nursing and one translator specializing in the English language. The first Turkish version of the scale was prepared by considering the common and different aspects of the 5 Turkish translations made by the experts specializing in their fields. The scale translated into Turkish was assessed in terms of its compliance with the structure of Turkish by a Turkish Language and Literature specialist. The Turkish translation of the scale was then translated back into English by a translator to determine whether it matched the original text. The scale translated back into English was e-mailed to one of the authors who had developed the original scale to determine whether there were any differences in terms of the meaning of the scale terminology. The author approved the scale's language match.

Content Validity Procedure

At the content validity stage, we obtained the opinions of 5 specialists, 4 of them lecturers in the Nursing Management field and 1 a specialist in the field of Educational Measurement–Assessment. Specialists evaluated the scale items according to the Content Validity Index. According to this index, the grading of the scale items by specialists in terms of their conformity ranged between 1 and 4. The meanings attached to the points were as follows: 1 point: does not conform; 2 points: conformity can be established; 3 points: conforms with a little change; and 4 points: conforms.

Data Collection

The nurses participating in the study were provided with the necessary information regarding the data collection forms and the purpose of the study. Nurses filled in the data collection forms in approximately 15–20 minutes. Data were collected by the researcher in sealed envelopes between February 23 and April 30, 2015.

Ethical Consideration

Permission to conduct the study was sought from the 1st Regional Public Hospitals Association, to which the Chief Physicians and Nursing Services Directorates of the hospitals included in the study reported. Furthermore, written permission was obtained from the Non-Invasive Clinical Studies Ethics Board of Hacettepe University (Number:

GO 14/586-24). Written consents were obtained from nurses and executive nurses included in the study sample with regard to their willingness to participate in the study after they had been provided with information on its purpose. Permission was obtained via email from one of the authors who developed the scale to develop an adaptation of the CONP-S in Turkish and to conduct a validity and reliability study on the scale.

Data Analysis

The data used in the validity and reliability study of the CONP-S were transferred to the LISREL program to conduct the necessary analysis. While the Content Validity Index (CVI) was used at the content validity stage of the study, Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) were employed to determine the structural validity. The Cronbach Alpha Reliability Coefficient was calculated to examine the reliability of the scale. Meanwhile, the consistency between test–retest measurements was examined using the Intra-class Correlation Coefficient.

The statistical analysis of the data was performed with the help of the SPSS (Statistical Package for Social Sciences) 22.0 Windows program to examine the background information in terms of frequencies, percentages, averages, standard deviation, and medians. The findings were considered statistically significant at a 95% confidence interval with a $p < .05$.

Table 1 The bed number of the hospitals, total numbers of nurses, number of nurses in sample.

The Type of Hospital	Bed Number	Nurses (n)	Sample (n)
University Hospital	918	647 (%49)	123 (%49)
Ministry of Health Hospital	1002	687 (%51)	127 (%51)
Total		1334	250

Table 2 The demographic data of the participating nurses (n= 250).

Demographic Data	University Hospital		Ministry of Health Hospital		TOTAL			
	Number	%	Number	%	Number	%	Mean±SD (Year)	Median (Min-Max.) (Year)
Age								
20-29 Years	40	32.5	58	45.7	98	39.2		33 years
30-39 Years	51	41.5	46	36.2	97	38.8	33.08±7.05	(21-54)
40 + Years	32	26.0	23	18.1	55	22.0		
Education Level								
Nursing High School Degree	10	8.1	14	11.0	24	9.6		
Associate Degree	18	14.6	43	33.9	61	24.4		
Baccalaureate degree	90	73.2	62	48.8	152	60.8		
Graduate Degree	5	4.1	8	6.3	13	5.2		
Nursing experiences								
0-5 years	38	30.9	48	37.8	86	34.4		
6-10 years	21	17.1	29	22.8	50	20.0	11.61±8.20	9.66 year
11-15 years	18	14.6	19	15.0	37	14.8		(8months-35.25years)
16-20 years	23	18.7	12	9.4	35	14.0		
21+ years	23	18.7	19	14.9	42	16.8		
Working experience in current institution								
0-5 years	52	42.3	85	66.9	137	54.8		
6-10 years	12	9.8	21	16.5	33	13.2		5.00 year
11-15 years	16	13.0	11	8.7	27	10.8	8.64±8.23	(6months-35.25 years)
16-20 years	20	16.3	6	4.7	26	10.4		
21+ years	23	18.7	4	3.1	27	10.8		
Working clinics								
Intensive Care	40	32.5	45	35.4	85	34.0		
Other Clinics	83	67.5	82	64.6	165	66.0		
Working experience in current clinic								
0-5 year	57	46.3	105	82.7	162	64.8		
6-10 year	19	15.4	18	14.2	37	14.8		
11-15 year	11	8.9	3	2.4	14	5.6	6.66±7.56	3.30 year
16-20 year	17	13.8	1	0.8	18	7.2		(6months- 35.25 year)
21+ year	19	15.4	-	-	19	7.6		
The way of work								
Fixed working hours	55	44.7	32	25.2	87	34.8		
Rotated working hours	68	55.3	95	74.8	163	65.2		
Working Hour/Weekly								
40 hour	85	69.1	32	25.2	117	46.8		
41-50 hour	38	30	84	66.1	122	48.8		
51 + hour	-	-	11	8.7	11	4.4		
Having an expertise or certification in nursing								
Yes	42	34.1	36	28.3	78	31.2		
No	81	65.9	91	71.7	172	68.8		

Table 4 Control Over Nursing Practices Scale item reliability analysis

Items	Corrected Item-Total Correlation	Cronbach's Alpha (if item deleted)
1. We are free to consult with other healthcare professionals to solve complicated healthcare problems.	0.45	0.94
2. We are free to change or adjust patient care procedures and protocols.	0.51	0.94
3. We are free to provide patient-centered and holistic care.	0.68	0.94
4. We are free to plan strategies to fulfill our personal development needs.	0.63	0.94
5. We are free to apply our clinical skills to put forward our best performance.	0.71	0.93
6. We are free to conduct critical analysis of problems.	0.65	0.94
7. We are free to assist in the decision-making process regarding the selection of new employees in our unit.	0.39	0.94
8. We are free to engage in care planning in collaboration with other members of the patient care team.	0.63	0.94
9. We are free to implement our own decisions regarding care provision.	0.72	0.93
10. We are free to coordinate the healthcare services that patients receive outside the hospital.	0.38	0.94
11. We are free to confer with others to determine our time off.	0.51	0.94
12. We are free to exercise our authority to perform our tasks and responsibilities.	0.69	0.93
13. We are free to request assistance from other workers when needed.	0.60	0.94
14. We are free to assess existing nursing policies and procedures.	0.65	0.94
15. We are free to assess the outputs of the patient care provided by nurses.	0.72	0.93
16. We are free to determine the standards of nursing practices at this hospital.	0.48	0.94
17. We are free to provide nursing care in an effective way.	0.69	0.93
18. We are free to be creative in the presentation of nursing care practices.	0.78	0.93
19. We are free to take part in the arrangement of our work schedule(s).	0.50	0.94
20. We are free to implement nursing practices and procedures.	0.69	0.93
21. We are free to determine the problems that arise while providing nursing care.	0.70	0.93
22. We are free to rearrange patients' care plans to meet their changing needs.	0.64	0.94
23. We are free to benefit from research results to enhance our nursing practices.	0.68	0.93

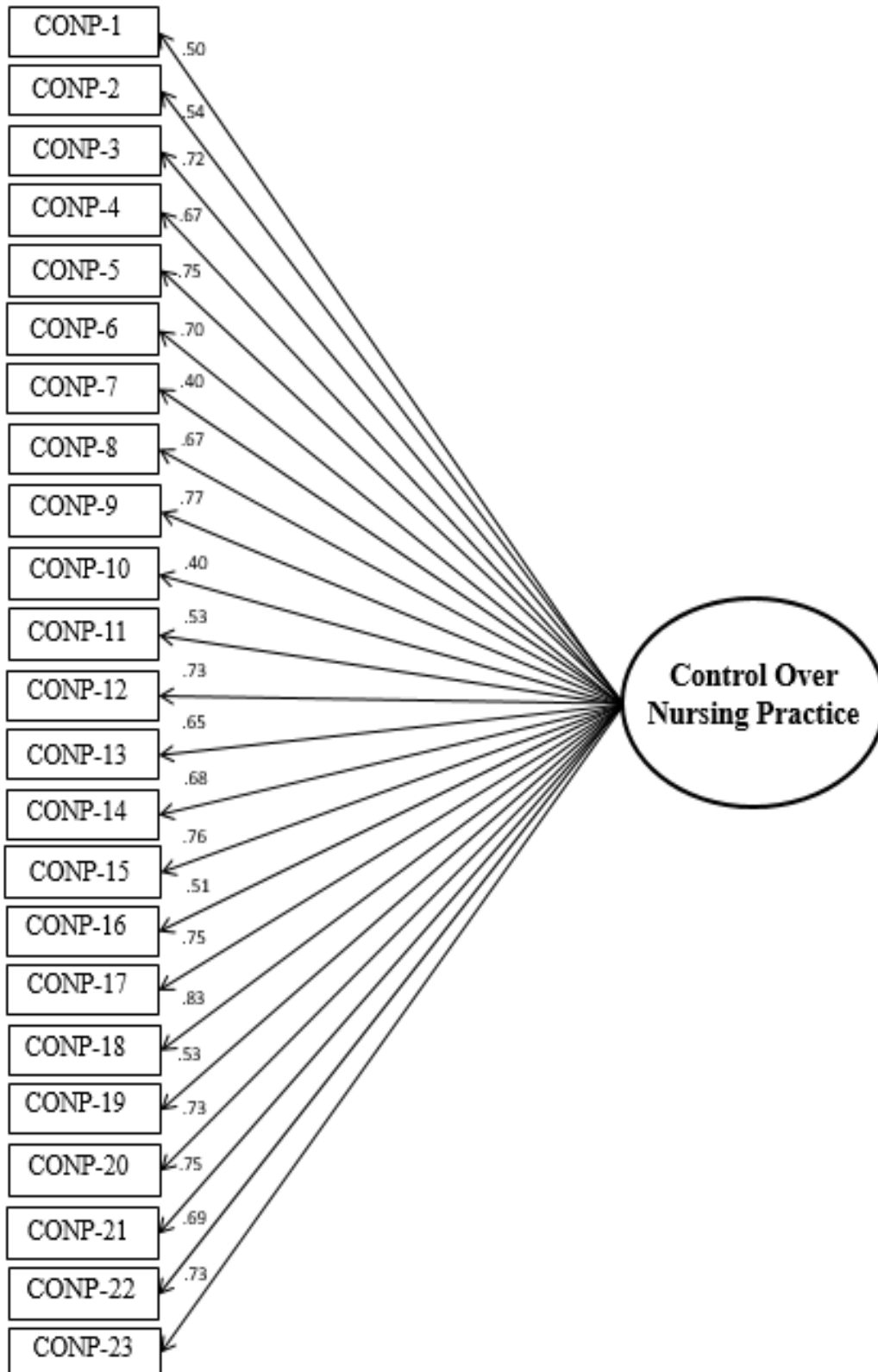


Figure 1 Confirmatory factor analysis results of the Control Over Nursing Practice Scale
 CONP= Control over nursing practice

Results

Validity

Content Validity

On the stage of content validity, the opinions of four faculty members from Nursing Management area and one expert from a Department of Measurement and Evaluation in Education were asked. The experts evaluated the scale items according to Content Validity-Index. According to this index, the points given by the experts about the appropriateness of scale items are changing between 1 and 4. 1 point: not appropriate, 2 points: bringing the material to the appropriate form, 3 Points: appropriate, but a little change is needed, 4 point: very appropriate. In order to say that the scale has content validity, the score must be 0.80 and more (Esin, 2014). In this study, the points given by each expert were evaluated and the inter-professional compliance was found as 0.89.

Construct Validity

Confirmatory Factor Analysis: The results obtained in the goodness of fit statistical analyses conducted to determine the structural validity of the scale were as follows: $\chi^2 / df = 758.42 / 228 = 3.32$, RMSEA = 0.097, CFI = 0.96, GFI = 0.98, NNFI = 0.95. When the fit indices were examined, the CFI, GFI, and NNFI were determined to be close to 1. The χ^2 / df value was determined to be smaller than 5. However, the RMSEA value was close to 0.1.

In the CFA, 43.776% of the total change was explained by means of a single factor structure. Based on Figure 1, it is evident that the factor loads of all the items included in the CONP-S ranged between 0.40 and 0.83. Among the scale items, Item 10 had the lowest factor load (0.40).

The Cronbach's α internal consistency coefficient of the scale was found to be .94 in the statistical analysis conducted to determine reliability.

The test–retest model was also implemented within the scope of the reliability study. The average scores obtained in the first and second applications of the CONP-S were 108.68 ± 20.10 and 105.40 ± 21.91 , respectively (Table 3). The Intra-class Correlation Coefficient between the first measurement and the result obtained in the retest was 0.748 ($p < 0.001$; Table 3). The item validity and reliability coefficient numbers were checked within the scope of the inventory

reliability, and the t-values of all the items were determined to be higher than 1.95.

The total corrected item correlations for all the items included in the scale ranged between 0.38 and 0.78. Among the scale items, Items 7 and 10 had the lowest correlation coefficients (0.39 and 0.38, respectively). However, the α of the scale did not change if these items were deleted (Table 4). Therefore, they were retained in the scale.

Discussion

The CVI was used to determine the content validity of the scale. According to the literature, the content validity of the scale must be 0.80 or higher (Esin, 2014). In this study, the intra-expert consistency was determined to be 0.89. These results point to a high CVI for the scale.

The CFA revealed the rate at which a single factor structure could explain the total change and factor loads. This factor structure was identical to that of the original version of the scale (Weston, 2009). The SEM results must be examined to determine the Goodness of Fit Indices (Esin, 2014). Therefore, in the present study, structural validity was examined using both CFA and SEM. Upon assessment of the Index of Fit results of the scale, the structure was determined to be valid on the basis that CFI, GFI, and NNFI were close to 1, and the value of χ^2 / df was smaller than 5. However, the RMSEA value was close to 0.1. This shows that the fit in the structural equation model was weak. However, we decided that the model was still usable as the results of the fitness indices other than the RMSEA were within the desired ranges (Esin, 2014).

Since the rate of explained variance for the CFA was 43.776, the model fit could be said to be low. However, considering that this value was 41% in the original scale, the prescribed structure could be said to be sufficient to explain the variance. In the study "Antecedents of Control Over Nursing Practices," Weston (2006) found the percent of explained variance of the scale at an individual level to be 43.3. Further, the factor loads of all the items were 0.40 or higher.

Therefore, the scale could be said to have a single factor structure. According to the results of the SEM, Items 7 (0.40) and 10 (0.40) contributed the least to the factor that we wished to measure. However, in line with the opinion of the original

author of the scale, these items were not removed to avoid disrupting the integrity of the scale. Kline (1994) emphasizes that a rate above 40% is a significant indicator of structural validity. On the other hand, in Weston's study (2006), the factor load range was determined to be between .41 and .79.

The total corrected item correlations for all the items included in the scale ranged between 0.38 and 0.78. These results demonstrate the validity of the items in the scale. Among the scale items, Items 7 and 10 had the lowest correlation coefficients (0.39 and 0.38, respectively). However, the α of the scale did not change if these items were deleted (Table 4). Therefore, they were retained in the scale.

The Cronbach's α internal consistency coefficient was found to be .94 in the statistical analysis conducted to determine reliability. An α reliability value between 0.80 and 1.00 indicates high reliability (Alpar, 2012). Weston (2006) determined the internal consistency coefficient for the individual and group levels to be 0.94 and .76, respectively. Within the scope of the present reliability study, the intra-class correlation coefficient value, through which the fit between the test–retest measurements are examined, was found to be 0.748 ($p < 0.001$). As the intra-class correlation coefficient value was within a range of 0.70–0.84, the scale was considered to be moderately reliable (Alpar, 2012). The high consistency of the scale is important in terms of contributing accurate and beneficial information to the literature.

The item validity and reliability coefficient numbers were checked within the scope of scale reliability, and the t-values of all the items were determined to be higher than 1.95. These values show that the scale is reliable. The reliability of the scale means it could also be used in other studies. As a matter of fact, the lack of any other scale to directly measure the level of control of practices by nurses in our country renders the obtained results important in terms of contributing to the efforts of the researchers in the field.

Conclusions and Recommendations

The group-level validity and reliability of the CONP-S, originally developed in English by Gerber et al. (1990), have been found to be sufficient. In conclusion, the CONP-S has been determined to fit the Turkish culture and to

exhibit optimal content validity. It is suggested that the validity and reliability studies on the CONP-S be conducted on larger groups and that the scale be used in assessing the level of control over nursing practices. Furthermore, the use of the scale in cross-cultural studies to assess the control of nursing practices by nurses from different cultures is also suggested.

Limitations of the study

As the present findings were based on data from the hospitals where the study was conducted, the study results cannot be generalized.

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