



Research Article

Cross-cultural Adaptation, Reliability, and Validity of the Turkish Version of the Health Professionals Communication Skills Scale



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SUMMARY

Purpose: The aim of this study is to evaluate the psychometric properties of the Turkish version of the Health Professionals Communication Skills Scale (HP-CSS).

Methods: The HP-CSS was translated into Turkish following an international instrument translation guideline. A convenience sample of 394 health professionals participated in this study. Internal consistency reliability, content validity, test-retest reliability, and convergent validity were assessed. A confirmatory factor analysis was conducted to evaluate the construct validity.

Results: The Turkish version of HP-CSS comprised four factors (empathy, informative communication, respect, and social skill). The HP-CSS-TR demonstrated adequate internal consistency (Cronbach's α values .72–.79). In terms of the content validity, the scale-level content validity index (CVI) was .94, and the item-level CVI ranged from .83 to 1.00. The HP-CSS-TR showed good test-retest reliability (intraclass correlation coefficients were above .82). No statistically significant difference was found between the applications. There was a good agreement between the HP-CSS-TR and communication skills inventory (CSI) scales. Confirmatory factor analysis results (χ^2/df , GFI, AGFI, IFI, TLI, CFI, RMSEA, and SRMR) showed a good fit for the original four-factor model.

Conclusion: Results showed that the Turkish version of the HP-CSS is a valid and reliable tool for the assessment of communication skills of health professionals in Turkey. The use of the HP-CSS-TR measure in clinical settings could be useful in enhancing the quality of care by identifying inadequacies and improving communication skills.

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Introduction

Communication is essential for healthcare professionals to share health information with the patients and their relatives. It plays a very significant role in defining patients' beliefs, emotions, needs, and expectations as well as their biomedical characteristics and in decision-making processes [1]. Patient-centered communication is one of the key factors in providing safe and effective nursing care. It facilitates the formation of positive and supportive relationships

and positive health outcomes by increasing the quality of information transmission [2–4]. There is growing evidence that effective clinical communication contributes to improved treatment outcomes and the experiences of patients and healthcare professionals [5]. Besides, communication skills of nurses can help improve the quality of life of patients [6].

Healthcare professionals are expected to act in line with the patients' information needs and common decision-making preferences by considering the emotional needs and sensitivities of patients. They need good communication skills to communicate effectively in this complex process [7]. Indeed, studies evaluating the effectiveness of training to improve communication skills showed that healthcare providers stated to have been less exposed to the aggressive behaviors of patients after the training and that their self-confidence in dealing with these behaviors increased [8,9]. Some study results also showed that improvement was found in their empathy skills [5,10,11] and patient-centeredness in clinical

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practice [12], and that patient satisfaction [13] and patient adherence increased [11,14].

Clinical communication skills are one of the key personal traits for an ideal interaction with patients and are the combination of convertible skills that can be improved. These skills may indicate the ability to transmit information to patients and the ability to incorporate patients' preferences in the decision-making process and to understand their messages [15,16]. Good communication skills of employees in the health sector, where there is intensive communication between the patients and healthcare professionals, positively affect the diagnosis processes. These skills also play a role in issues such as reduced job stress of employees, increased compliance and patient satisfaction, and improved patient care quality [17]. It is known that patients' perceptions of the quality of health services they receive significantly depend on the quality of communication with the healthcare team. Previous studies proved that there was a positive and strong relationship between patient-provider communication and patients' adherence to treatment [18], management of chronic diseases, and their motivation to adopt better lifestyles [19]. On the other hand, a minor mistake to be made by healthcare professionals due to the problems in communication leads to irrecoverable consequences and problems such as misdiagnosis, medication errors, and delayed treatment [20].

The role given to communication studies in health services has increased over the years, and thus, Health Communication discipline has been established accordingly. United States Office of Disease Prevention and Health Promotion has indicated that health communication studies are essential for effective public health strategies and practices [21]. The USA has included the title of health communication within the context of "Healthy People 2010" targets and emphasized the increasing importance of it, and they also have included health communication under the title of "Health Communication and Health Information Technology" in the "Healthy People 2020" project aiming a healthier society in 2020 [22].

There are different ways to evaluate the communication skills of healthcare professionals such as self-assessment questionnaires, patient-assessment questionnaires, and third-party observations. Various scales have been developed to assess communication skills. However, to the best of our knowledge, the number of studies that focus on the communication skills of health professionals is very limited. In a systematic review study conducted by Cömert et al., scales assessing the communication skills of medical students were investigated. In the study, the methodological quality of studies was reported mainly as poor [23].

The Health Professionals Communication Skills Scale (HP-CSS) shows good psychometric properties. Moreover, the HP-CSS is one of the rare instruments that show the entire process of scale development starting from the semantic and syntactic definition of the construct to the evaluation of psychometric properties [24]. In a very recent study conducted on 692 nurses, psychometric properties of the scale were analyzed and appropriate results were obtained. The study empirically revealed that nurses who have adequate communication skills feel themselves safer and more competent, and thus, their relationships with patients are improved [25]. In another study assessing the performance of fourth-year nursing students in the simulated clinical practices, a positive relationship between the students' communication skills and their performance was reported. It was also revealed that higher levels of empathy, respect, informative communication, and assertiveness result in improved performance in the clinical environment [26].

Reliable instruments can be used to assess nurses' communication skills to contribute to the improvement of quality of care and the development of the studies on further improvement of their

skills [15,27]. Therefore, there is a need for valid and reliable measurement tools specially developed to evaluate the communication between healthcare professionals and patients [28]. As far as the literature review is concerned, no previous study was conducted to validate a communication skills scale specific to health professionals in Turkey. In general, studies assessing the communication skills of health professionals were carried out using scales developed not for health professionals, but for general use. The aims of the present study were to translate and adapt the HP-CSS developed by Leal-Costa et al. [28] into Turkish and to examine whether it is a valid and reliable tool for assessing the communication skills of health professionals. The study results will provide researchers and managers of health institutions with a useful tool for the new studies and assessments in Turkey.

Method

Study design

This methodological study consisted of two phases. In phase 1, the HP-CSS was translated and culturally adapted into Turkish following guidelines proposed by Sousa [29] and World Health Organization (WHO) for cross-cultural adaptation process [30]. In phase 2, the psychometric properties of the Turkish version of the HP-CSS were evaluated through a cross-sectional survey (Figure 1).

Setting and participants

The present study was conducted between September 2017 and February 2018. A convenience sampling method was used to recruit health professionals from three hospitals of a hospital group in Istanbul. A total of 394 health professionals including nurses and physicians participated in the study. In the adaptation of a scale to another language, it is recommended that the sample size should be 5–10 times greater than the number of items in the scale [31]. The HP-CSS consists of 18 items and our sampling size met this criterion with a ratio of 1 to 22.

Ethical considerations

For adaptation of the HP-CSS to Turkish, written permission of César Leal-Costa, who developed the instrument, was taken. The ethics committee approval of the study was obtained from the Clinical Research Ethics Committee of Demiroglu Bilim University before conducting the study (Approval no. 04.07.2017/60-14). Additionally, verbal consent was obtained from each of the participants.

Instrument

The questionnaire was composed of three sections: (1) a demographic information form including age, gender, marital status, education level, major, working period, and attendance to any training related to communication skills before; (2) the HP-CSS developed by Leal-Costa et al. (2016), and (3) communication skills inventory (CSI) [32].

The HP-CSS is a self-report scale evaluating the communication skills of health professionals. The development of the original scale was completed in two phases. In the first phase, the authors analyzed the components of communication skills of health professionals, interrelationships between the components and relationships with other external constructs from a theoretical point of view. The adequacy of the definition of the construct was assessed by 29 experts using a Delphi-type methodology. Adequacy scores of each construct ranged between .83 and .93. The evidence

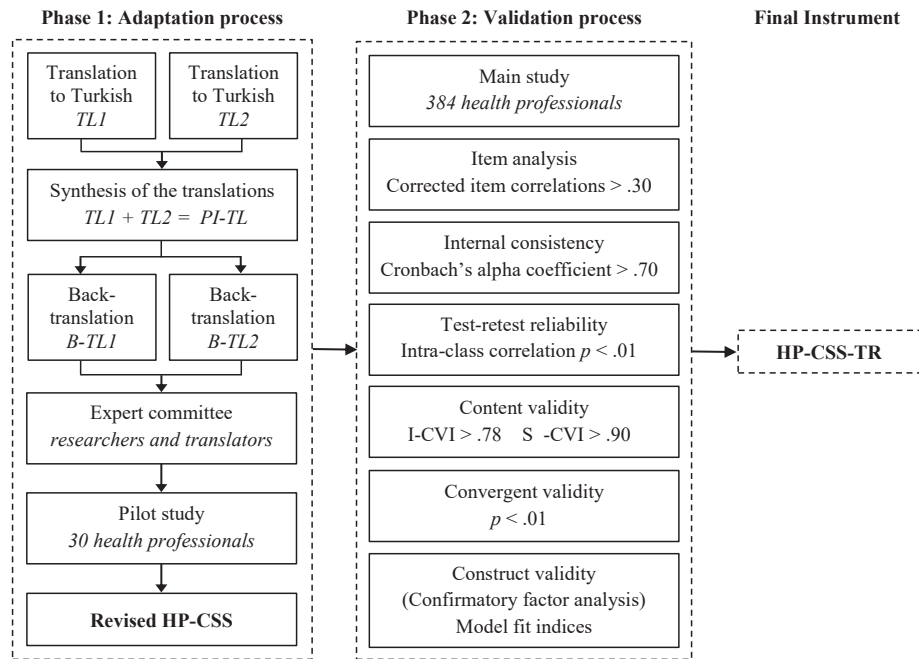


Figure 1. Cross-cultural adaptation and validation process of the HP-CSS-TR.

Note. B-TL = back-translated version; I-CVI = content validity index of the scale items; PI-TL = preliminary initial translated language; S-CVI = content validity index for the overall scale; TL = desired language.

of content validity was provided. In the second phase, the scale consisting of 46 items was developed. The items were evaluated by 27 experts specialized in health communication and they decided to remove four items. Consensus validity was based on expert agreement. The first preliminary test was carried out with a small group of health professionals consisting of two physicians, four nurses, and three nursing assistants [24]. Psychometric properties of the scale were investigated in another research, which is the continuation of the first study. Exploratory factor analysis and confirmatory factor analysis (CFA) were conducted to analyze the items and components they belong to. The resulting scale consisted of 18 items divided into four dimensions, including empathy (five items), informative communication (six items), respect (three items), and social skill (four items). The participants were assessed on how often each item applies to themselves by using a six-point Likert-type scale from 1 to 6 (1 = almost never, 2 = once in a while, 3 = sometimes, 4 = normally, 5 = very often, and 6 = many times). Empathy includes items 2, 4, 6, 11, and 12, and the score ranges between 5 and 30; informative communication includes items 5, 8, 9, 14, 17, and 18, and the score ranges between 6 and 36; respect includes items 1, 3, and 15, and the score ranges between 3 and 18; social skill includes items 7, 10, 13, and 16, and the score ranges between 4 and 24. Higher scores reflect better communication skills of health professionals. The Cronbach's α coefficients of the original scale were reported as .77, .78, .74, and .65 for empathy, informative communication, respect, and social skill dimensions, respectively [28].

The CSI consists of 45 items rated on a five-point Likert-type scale. The scale comprises three dimensions: behavioral (CSI-B), cognitive (CSI-C), and emotional (CSI-E). Scores range from 15 to 75 for each dimension; the higher the score, the better the communication skills [32].

Translation and adaptation process

The cross-cultural adaptation process was carried out in four steps: forward translation, expert panel back translation, pretesting

and cognitive interviewing, and the final version [29,30]. The translation process was completed in 3 weeks with no significant difficulty.

Step 1 Forward translation: After the approval from the developer of the original HP-CSS, the scale was translated into Turkish. Two bilingual experts (a nurse professor and an English lecturer at the Faculty of Health Sciences), both fluent in English, independently translated the original scale into Turkish (TL1 and TL2). A panel including a third independent nurse professor, one communication professor, and the research team reviewed forward-translated versions to achieve the most accurate translation. After resolving ambiguities and disagreements, a preliminary initial translated version named as version 1 was created (PI-TL).

Step 2 Back translation: Version 1 of the scale was then independently translated back into English by two scholars in the English Language and Literature who have not seen the original HP-CSS (B-TL1 and B-TL2). One of the translators had experience in health terminology. The back-translated English versions were compared with the original version of the HP-CSS in English by an expert committee, comprising the researchers and all translators involved in the process. In this meeting, the committee discussed each item in more detail to ensure no major discrepancies existed and to achieve the best possible level of semantic and conceptual relevance. The expert committee decided to make minor changes to items 16 and 18. Item 16, "I find it difficult to make requests of patients" was changed to "It is difficult for me to make requests of patients." Item 18, "I find it difficult to ask for information from patients" was modified to "It is difficult for me to ask questions to patients to collect information." These changes were made considering the prevalence of use in Turkish to obtain appropriate items in terms of clarity and understandability. The comprehensibility and the cognitive equivalence of the translation were confirmed by the cognitive interviews. After a consensus

was reached within the committee, the prefinal version named as version 2 was produced.

- Step 3 Pretesting and cognitive interviewing: Next, version 2 of the scale was examined in a pilot study on 30 health professionals aged 20–42 from the same hospital. Of the participants, 23 were female. The health professionals were asked to read and answer all items of the prefinal version of the HP-CSS. Then, the participants were individually interviewed about their opinions regarding the clarity and understandability of the questions. All of the health professionals indicated that the items were easy to understand and did not have unnecessary words. At the end of the pilot study, no modification was required and version 3 was created.
- Step 4 Final version: The last step is the proofreading of version 3. The final Turkish version of HP-CSS was completed by requesting a Turkish linguist for typo, spelling, or grammatical errors. The final version of the scale was named HP-CSS-TR.

Regarding content validity, a panel of six independent experts (two teaching staff from the field of communication, two nurse academicians, one physician, and one registered nurse) reviewed and evaluated each item separately. The clarity and relevance of each item were assessed by using a four-point scale (1 = not clear/relevant, 2 = somewhat clear/relevant, 3 = quite clear/relevant, and 4 = highly clear/relevant). The content validity index (CVI) for each item was computed by dividing the total score of each item by the total number of experts. The overall CVI was computed by taking the average of the CVIs of all items. The CVI of the scale items (I-CVI) ranged from .83 to 1. The CVI for the overall scale (S-CVI) was .94, which supports that HP-CSS-TR has good content validity.

Data collection

Data were collected in three hospitals of a hospital group in Istanbul. The health professionals who voluntarily accepted to participate in the study were informed about the purpose of the study and the parts of the questionnaire. In the second part of the survey, they were asked to mark the most appropriate option for each item considering their experiences with the patients. A brief

description of the purpose of the study was also included at the beginning of the survey form. It took 5–8 minutes to answer the HP-CSS-TR by the participants. The HP-CSS was re-administered to 30 health professionals 2 weeks later to evaluate the test-retest reliability of the scale.

Data analysis

Data analyses were performed using the IBM SPSS Statistics 21 and IBM SPSS Amos 24 (IBM Corp., Armonk, NY, USA) software packages. Descriptive statistics (mean, standard deviation, and frequency distributions) were used to determine participants' socio-demographic characteristics. The skewness and kurtosis coefficients were assessed to test the normality of the distribution of the data. The distribution of the data was accepted as normal if the absolute value of skewness of all variables was smaller than 3 and the absolute value of the kurtosis was smaller than 10 [33].

The content validity of the HP-CSS-TR was assessed using scale and item-level CVI. The convergent validity was investigated by examining the relationship between the HP-CSS-TR and the CSI scales. The Spearman correlation coefficient was used to investigate the correlation between the HP-CSS-TR and the CSI scores.

The internal consistency of the instrument was evaluated by calculating the Cronbach's α coefficient. The test-retest reliability was investigated by the intraclass correlation and paired sample t test. Correlations between the HP-CSS-TR dimensions were studied. The CFA was performed to evaluate the construct validity of the scale. The indices χ^2/df (chi-square/degrees of freedom), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), incremental fit index (IFI), Tucker-Lewis coefficient (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were used to assess the dimensions' goodness of fit. A $p < .05$ was considered to indicate statistical significance.

Results

Sample characteristics

The sample consisted of 394 people (304 women and 90 men) that were between 19 and 67 years old. The mean age was 29.54 years, with a standard deviation of 9.75 years. Of the

Table 1 Sample characteristics of the participants ($N = 394$).

Variables	n (%) or Mean \pm SD
Age	29.54 \pm 9.75
Gender	
Women	304 (77.2)
Men	90 (22.8)
Marital status	
Single	128 (32.5)
Married	266 (67.5)
Education	
Vocational school of health	75 (19.0)
Associate degree	61 (15.5)
Undergraduate	226 (57.4)
Postgraduate	32 (8.1)
Occupation	
Nurse	329 (83.5)
Physician	65 (16.5)
Years working as a health professional	8.16 \pm 8.83
Education, training, or symposium related to communication skills	
Yes	245 (62.2)
No	149 (37.8)
Does communication with the patient affect the quality of care?	
Yes	384 (97.5)
No	10 (2.5)

Note. SD = standard deviation.

participants, 329 were nurses (83.5%) and 65 were physicians (16.5%). The average of time working as a health professional was 8.16 ± 8.83 years. The majority of the respondents were married (67.5%), had a bachelor's degree (57.4%), had attended training related to communication skills before (62.2%), and indicated that communication with the patient affects the quality of care (97.5%). The socio-demographic characteristics of the sample are presented in Table 1.

Descriptive statistics

The mean scores of the 18 items ranged between 4.57 and 5.78, and standard deviations ranged from 0.52 to 1.32. The mean scores of HP-CSS-TR dimensions were 27.45 (SD 2.85; range 8–30) for empathy, 32.87 (SD 3.37; range 11–36) for informative communication, 17.09 (SD 1.38; range 8–18) for respect, and 19.80 (SD 3.30; range 7–24) for social skill. The skewness and kurtosis values were in acceptable range (<3 for skewness and <10 for kurtosis) for all variables, which indicates multivariate normality. The item-total correlation coefficients were all greater than .40 and statistically significant at $p < .001$ significance level (Table 2).

Validity

Construct validity was analyzed using CFA. In CFA, HP-CSS-TR is composed of 18 items in four dimensions, including empathy (items 2, 4, 6, 11, and 12), informative communication (items 5, 8, 9, 14, 17, and 18), respect (items 1, 3, and 15), and social skill (items 7, 10, 13, and 16). Two models were tested in this study. Model 1 provides the CFA of the HP-CSS-TR without correlating error terms. The fit indices of the model were almost satisfactory: $\chi^2/df = 3.37$, GFI = .89, AGFI = .85, IFI = .89, TLI = .87, CFI = .89, and RMSEA .08. The data fit was improved in Model 2 by setting six error covariances (Cov (e13, e14); Cov (e22, e23); Cov (e18, e20); Cov (e18, e21); Cov (e25, e26); and Cov (e28, e29)) as free parameters. The model fit indices and standardized factor weights of Model 2 are presented in Figure 2. CFA model fits the data very well; $\chi^2/df = 2.79$, GFI = .91, AGFI = .88, IFI = .92, TLI = .90, CFI = .92, and RMSEA .07. Except for item 18, all items of the HP-CSS-TR showed appropriate standardized factor weights with a range of .45–.80 ($\lambda > .40$). Since the fit index values were in good agreement, we decided to keep item 18 on the scale. Consequently, the model was confirmed.

Convergent validity was assessed through the correlation between the HP-CSS-TR and the CSI. All HP-CSS-TR scores were found to be significantly positively correlated with CSI scores ($p < .001$). While the great majority of correlations were moderate or strong, there was a weak correlation between respect and CSI-B ($r = .39$, $p < .001$); and social skill and CSI-E subscales ($r = .38$, $p < .001$) (Table 3).

Reliability

The internal consistency of the HP-CSS-TR was assessed by the Cronbach's α coefficient. The Cronbach's α values of the empathy, informative communication, respect, and social skill dimensions were .79, .74, .73, and .72, respectively. Item-total correlations were between .63 and .83 for empathy, .64 and .77 for informative communication, .78 and .83 for respect, and .69 and .78 for social skill. All dimensions demonstrated good internal consistency reliability.

To evaluate the scale's stability over time, a test-retest analysis was performed in 7.6% ($n = 30$) of the participants with an interval of 2 weeks. It was determined that the intraclass correlation coefficients (ICCs) varied between .82 and .89 for the dimensions. The

Table 2 Descriptive Statistics and Item-total Correlation Dimension.

Item	Mean	SD	Item-total correlation dimension	Test-retest reliability (ICC)
1. I respect the right of patients to express themselves freely.	5.47	0.83	.78*	.65
2. I explore the emotions of my patients.	5.68	0.56	.68*	.95
3. I respect the autonomy and freedom of patients.	5.55	0.78	.83*	.80
4. When the patient speaks, I show interest through body gestures (nodding, eye contact, smiles, ...)	5.36	0.85	.63*	.74
5. I provide information to patients (whenever my professional competency permits me) about what concerns them.	5.39	0.84	.71*	.78
6. I listen to patients without prejudice, regardless of their physical appearance, mannerisms, form of expression,	5.61	0.71	.71*	.82
7. I express my opinions and desires clearly to patients.	5.41	0.81	.76*	.74
8. When I give information, I use silence to allow the patient to assimilate what I am saying.	5.64	0.64	.64*	.95
9. When I give information to patients, I do so in understandable terms.	5.69	0.62	.77*	.82
10. When a patient does something that does not seem right, I express my disagreement or discomfort.	5.33	0.82	.74*	.94
11. I dedicate time to listen and try to understand the needs of patients.	5.19	1.32	.83*	.87
12. I try to understand the feelings of my patient.	5.78	0.52	.82*	.83
13. When I interact with patients, I express my opinions clearly and firmly.	5.69	0.58	.78*	.92
14. I believe that the patient is entitled to receive health information.	5.61	0.61	.71*	.50
15. I feel that I respect the needs of patients.	5.21	1.00	.80*	.81
16. I find it difficult to make requests of patients.	4.57	1.29	.69*	.77
17. I make sure that patients have comprehended the information provided.	5.14	1.03	.71*	.81
18. I find it difficult to ask for information from the patients.	4.89	1.15	.64*	.90

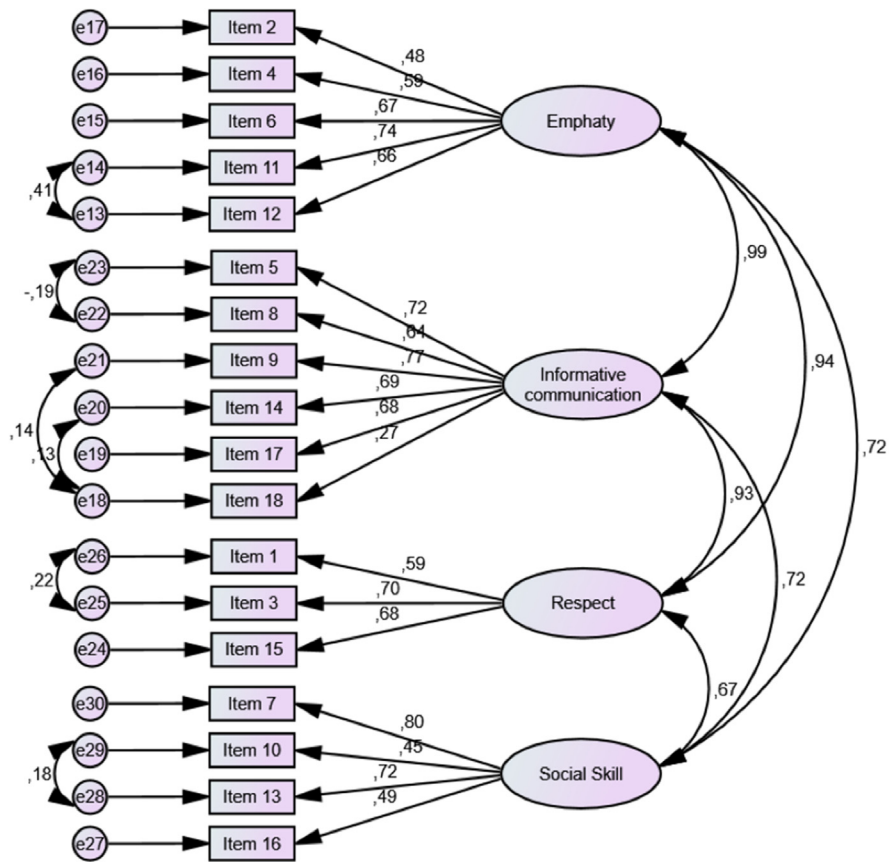
Note. ICC = intraclass correlation coefficient; SD = standard deviation.

* $p < .001$.

correlation values between the first and the second questionnaires were $r = .80$ for empathy, $r = .53$ for informative communication, $r = .83$ for respect, and $r = .79$ for social skill with a significant difference at $p < .01$ significance level. Additionally, mean dimension scores of the first and second assessments were compared with paired sample t test and no statistically significant difference was found ($p > .05$). These findings indicate good temporal stability.

Discussion

Effective communication is an important component of patient care that positively affects health outcomes. Assessment of health professionals' communication skills using valid and reliable measures can be useful in clinical environments. In this study, it was aimed to adapt the HP-CSS into Turkish and to determine its validity and reliability. To the best of our knowledge, this is the first instrument in Turkey to evaluate the communication skills of health professionals. We translated the HP-CSS into Turkish



$\chi^2 = 343.34$, $df = 123$, $\chi^2/df = 2.79$, $GFI = .91$, $AGFI = .88$, $IFI = .92$, $TLI = .90$, $CFI = .92$, and $RMSEA = .07$

Figure 2. Confirmatory factor analysis of the HP-CSS-TR with correlation between dimensions, factorial weights and R^2 for each item.

Note. AGFI = adjusted goodness of fit index; χ^2 = chi-square; CFI = comparative fit index; CI = confidence interval; df = degrees of freedom; GFI = goodness of fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis coefficient.

Table 3 Concurrent Validity of the HP-CSS-TR (N = 394).

	Empathy: HP-CSS-TR	Informative communication: HP-CSS-TR	Respect: HP-CSS-TR	Social skill: HP-CSS-TR	CSI-B	CSI-C	CSI-E
	<i>r</i> (<i>p</i>)						
Empathy: HP-CSS-TR	1						
Informative communication: HP-CSS-TR	.66 (<.001)	1					
Respect: HP-CSS-TR	.63 (<.001)	.60 (<.001)	1				
Social skill: HP-CSS-TR	.54 (<.001)	.48 (<.001)	.46 (<.001)	1			
CSI-B	.49 (<.001)	.41 (<.001)	.39 (<.001)	.69 (<.001)	1		
CSI-C	.54 (<.001)	.72 (<.001)	.65 (<.001)	.44 (<.001)	.42 (<.001)	1	
CSI-E	.63 (<.001)	.48 (<.001)	.44 (<.001)	.38 (<.001)	.40 (<.001)	.42 (<.001)	1

Note. HP-CSS-TR = Turkish version of the health professionals' communication skills scale; CSI-B = communication skills inventory behavioral subscale; CSI-C = communication skills inventory cognitive subscale; CSI-E = communication skills inventory emotional subscale; r = Spearman's correlation coefficient.

through a procedure including translation, synthesis, back-translation, expert review, and pilot study proposed by Sousa and Rojjanasrirat (2010) and WHO [29,30]. Our findings support the reliability and validity of the HP-CSS-TR.

To evaluate the content validity of the scale, the I-CVI and S-CVI were calculated. According to previous studies, an I-CVI value of at least .78 and an S-CVI value of at least .90 are considered as appropriate [34–36]. In the present study, the I-CVI ranged from

.83 to 1.00, and an S-CVI of .94 indicated that the experts confirmed the relevance and clarity of the Turkish version of HP-CSS.

The convergent validity of the HP-CSS-TR was assessed by performing a correlation analysis between the HP-CSS-TR and CSI scale scores. In terms of the consistency between the HP-CSS-TR and CSI scales, all correlations were found to be statistically significant ($p < .001$). This finding indicates that the convergent validity of HP-CSS-TR was supported.

With regard to the reliability of the HP-CSS-TR, the Cronbach's α coefficients were .79, .74, .73, and .72 for empathy, informative communication, respect, and social skill dimensions, respectively. These values were all above the acceptable limit of .70, which suggests adequate internal consistency [37]. Compared to the internal consistency obtained in the original scale, results demonstrated slightly better internal consistency in empathy and social skill dimensions (.77, .78, .74, and .65, respectively) [28]. In a recent validation study conducted on nurses in Spain, Cronbach's α coefficients were found between .65 and .78 [25]. Additionally, the item-total correlations were calculated to determine the relationship between the items and the scale scores. It is recommended that the item-total correlation of an item should be above .20 [38]. In the present study, the item-total correlations were between .63 and .83, which indicates that the scale has sufficient internal consistency.

The test-retest analysis showed consistent results over a 2-week interval, with all ICCs exceeding .80. This finding is consistent with the findings of Leal-Costa et al. (2016) [28]. The correlations of scores between interviews were significant for all dimensions ($p < .01$). As a result of the paired samples analysis, no statistically significant difference was found, indicating that the measurements are repeatable ($p > .05$). Results demonstrated that the psychometric properties are adequate in terms of internal consistency and stability over time.

The goodness of fit for the four-dimension model reported by Leal-Costa et al. (2016) was examined by CFA [28]. The model fit was improved by allowing correlated measurement errors. Although this strategy is criticized by some authors [33,39], it is commonly used in the literature and supported by many researchers [40–42]. Moreover, the original scale developers [28] and a validation study on nurses all reported the use of correlated errors [25]. To present differences between the two models more clearly, we also reported the model fit indices before and after the use of correlated errors. The results of the modified model indicated an acceptable goodness of fit. Acceptable values of $\chi^2/df (\leq 3)$, GFI, IFI, TLI (NNFI), and CFI ($\geq .90$), RMSEA $\leq .08$, and AGFI ($\geq .85$) were calculated [43]. Except for item 18 ($\lambda: .27$), the factor loadings were between .45 and .80. Jöreskog [44] reported that the coefficient α of a measurement item should be over .30. Nevertheless, since the fit index values were in acceptable agreement and the factor weight of item 18 is very close to the threshold, we decided to keep item 18 on the scale. In the Spanish version of the scale, the factor loadings were between .41 and .81. Similarly, the item with the lowest factor loading was item 18 [28]. In general, CFA results are consistent with the original study. The CFA of the HP-CSS-TR supports its structural validity.

The health professionals who participated in the present study perceived themselves as having good communication skills with their patients, as they received high average scores on the HP-CSS-TR scale. This result is similar to the results achieved by Sánchez Expósito et al. [26]. In addition, it was found that there was no significant difference between nurses' and physicians' HP-CSS-TR scores. However, the scores of the nurses were relatively higher than the physicians' in empathy and respect dimensions.

Communication between health professionals and patients is one of the most significant dimensions of patient care, which affects patient outcomes and quality of care especially in chronic diseases [7,11,19]. It is important for nurse managers to identify the communication skills and educational needs of nurses related to communication skills and plan training activities for development [45]. As a reliable and valid tool, HP-CSS-TR can be used by both nurse managers and other managers in health organizations, to be sure that communication skills are developed and maintained in clinical environments. Moreover, a study was conducted to

determine the research priorities of consumers and other stakeholders to inform Cochrane Reviews in "health communication and participation." Structural and cultural challenges in health services and building health professionals' communication skills were the most addressed topics [46]. Researchers can contribute to the literature by conducting detailed studies on health professionals' communication skills and related factors using the scale.

Strengths and limitations of the study

This study had some limitations. First, the sample only consisted of nurses and physicians. Future work should further validate the Turkish version of HP-CSS using a much larger sample that includes other health professionals such as physiotherapists, dieticians, psychologists, etc. Second, this study was conducted at three hospitals (one teaching hospital and two class-I private hospitals) in Istanbul. Therefore, results cannot be generalized to the entire population of health professionals in Turkey. Further studies should be conducted in other types of hospitals, community health centers, and other cities in Turkey. Despite these limitations, the present study makes an important contribution toward improving the quality of care by enhancing the relational aspects between health professionals and patients.

Conclusions

According to the findings, it was determined that the Turkish version of the HP-CSS is a valid and reliable instrument for evaluating the communication skills of healthcare professionals. Our findings confirmed four factors in the HP-CSS-TR, including empathy, informative communication, respect, and social skill. The HP-CSS-TR can be readily used to evaluate relational aspects between health professionals and patients in Turkey. Future research is recommended to assess the effects of healthcare professionals' communication skills on the quality of care and patient outcomes in Turkey.

Source data

The dataset used in the present study has been published in Mendeley Data and is available at <https://doi.org/10.17632/ww8f8yxm7t.2>.

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Conflict of interest

None.

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References

1. Rubinelli S, Silverman J, Aelbrecht K, Deveugle M, Finset A, Humphris G, et al. Developing the international association for communication in healthcare (EACH) to address current challenges of health communication. *Patient Educ Counsel*. 2019;102(6):1217–21. <https://doi.org/10.1016/j.pec.2019.01.004>

2. Shao YN, Sun HM, Huang JW, Li ML, Huang RR, Li N. Simulation-based empathy training improves the communication skills of neonatal nurses. *Clin Simul Nurs*. 2018;22:32–42. <https://doi.org/10.1016/j.ecns.2018.07.003>
3. Pagano MP, O'Shea ER, Campbell SH, Currie LM, Chamberlin E, Pates CA. Validating the health communication assessment tool© (HCAT). *Clin Simul Nurs*. 2015;11(9):402–10. <https://doi.org/10.1016/j.ecns.2015.06.001>
4. Pehrson C, Banerjee SC, Manna R, Shen MJ, Hammonds S, Coyle N, et al. Responding empathically to patients: development, implementation, and evaluation of a communication skills training module for oncology nurses. *Patient Educ Counsel*. 2016;99(4):610–6. <https://doi.org/10.1016/j.pec.2015.11.021>
5. Muddle L, O'Malley CJ, Stupans I. Learning and teaching of patient-centred communication skills in allied healthcare manual therapy students: a systematic review. *Int J Osteopath Med*. 2019;32:21–7. <https://doi.org/10.1016/j.ijom.2019.04.002>
6. Wang JJ, Hsieh PF, Wang CJ. Long-term care nurses' communication difficulties with people living with dementia in Taiwan. *Asian Nurs Res*. 2013;7(3):99–103. <https://doi.org/10.1016/j.janr.2013.06.001>
7. Bos-van den Hoek DW, Visser LN, Brown RF, Smets EM, Henselmans I. Communication skills training for healthcare professionals in oncology over the past decade: a systematic review of reviews. *Curr Opin Support Palliat Care*. 2019;13(1):33–45. <https://doi.org/10.1097/SPC.0000000000000409>
8. Swain N, Gale C. A communication skills intervention for community healthcare workers reduces perceived patient aggression: a pretest-posttest study. *Int J Nurs Stud*. 2014;51(9):1241–5. <https://doi.org/10.1016/j.ijnurstu.2014.01.016>
9. Baby M, Gale C, Swain N. Communication skills training in the management of patient aggression and violence in healthcare. *Aggress Violent Behav*. 2018;39:67–82. <https://doi.org/10.1016/j.avb.2018.02.004>
10. Bry K, Bry M, Hentz E, Karlsson HL, Kyllönen H, Lundkvist M, et al. Communication skills training enhances nurses' ability to respond with empathy to parents' emotions in a neonatal intensive care unit. *Acta Paediatr Int J Paediatr*. 2016;105(4):397–406. <https://doi.org/10.1111/apa.13295>
11. Moore PM, Rivera S, Bravo-Soto GA, Olivares C, Lawrie TA. Communication skills training for healthcare professionals working with people who have cancer. *Cochrane Database Syst Rev*. 2018;7. <https://doi.org/10.1002/14651858.CD003751.pub4>
12. Maatouk-Bürmann B, Ringel N, Spang J, Weiss C, Möltner A, Riemann U, et al. Improving patient-centered communication: results of a randomized controlled trial. *Patient Educ Counsel*. 2016;99(1):117–24. <https://doi.org/10.1016/j.pec.2015.08.012>
13. Boissy A, Windover AK, Bokar D, Karafa M, Neuendorf K, Frankel RM, et al. Communication skills training for physicians improves patient satisfaction. *J Gen Intern Med*. 2016;31(7):755–61. <https://doi.org/10.1007/s11606-016-3597-2>
14. Lonsdale C, Hall AM, Murray A, Williams GC, McDonough SM, Ntoumanis N, et al. Communication skills training for practitioners to increase patient adherence to home-based rehabilitation for chronic low back pain: results of a cluster randomized controlled trial. *Arch Phys Med Rehabil*. 2017;98(9):1732–43. <https://doi.org/10.1016/j.apmr.2017.02.025>
15. Cubaka VK, Schriver M, Vedsted P, Makoul G, Kallestrup P. Measuring patient-provider communication skills in Rwanda: selection, adaptation and assessment of psychometric properties of the communication assessment tool. *Patient Educ Counsel*. 2018;101(9):1601–10. <https://doi.org/10.1016/j.pec.2018.04.010>
16. Axboe MK, Christensen KS, Kofoed PE, Ammentorp J. Development and validation of a self-efficacy questionnaire (SE-12) measuring the clinical communication skills of health care professionals. *BMC Med Educ*. 2016;16:272. <https://doi.org/10.1186/s12909-016-0798-7>
17. Ranjan P, Kumari A, Chakrawarty A. How can doctors improve their communication skills? *J Clin Diagn Res*. 2015;9(3):1–4. <https://doi.org/10.7860/JCDR/2015/12072.5712>
18. Matthews SM, Peden AR, Rowles GD. Patient-provider communication: understanding diabetes management among adult females. *Patient Educ Counsel*. 2009;76(1):31–7. <https://doi.org/10.1016/j.pec.2008.11.022>
19. Claramita M, Arininta N, Fathonah Y, Kartika S, Prabandari YS, Pramantara ID. A partnership-oriented and culturally-sensitive communication style of doctors can impact the health outcomes of patients with chronic illnesses in Indonesia. *Patient Educ Counsel*. 2019;103(2):292–300. <https://doi.org/10.1016/j.pec.2019.08.033>
20. Foronda C, MacWilliams B, McArthur E. Interprofessional communication in healthcare: an integrative review. *Nurse Educ Pract*. 2016;19:36–40. <https://doi.org/10.1016/j.nepr.2016.04.005>
21. ODPHP. Health literacy [Internet]. Washington: Office of Disease Prevention and Health Promotion; 2020 [cited 2019 Dec 4]. Available from: <https://health.gov/our-work/health-literacy/>
22. ODPHP. Healthy people [Internet]. Washington: Office of Disease Prevention and Health Promotion; 2020, 2020 [cited 2019 Dec 4]. Available from: <https://www.healthypeople.gov/2020/topics-objectives/>
23. Cömert M, Zill J, Christalle E, Dirmaier J, Härter M, Scholl I. Assessing communication skills of medical students in objective structured clinical examinations (OSCE) - a systematic review of rating scales. *PLoS One*. 2016;11(3):e0152717. <https://doi.org/10.1371/journal.pone.0152717>
24. Leal-Costa C, Tirado-González S, Román CJH, Rodríguez-Marín J. Creation of the communication skills scale in health professionals, CSS-HP. *Anal Psicol*. 2016;32(1):49–59. <https://doi.org/10.6018/analesps.32.1.184701>. Spanish.
25. Leal-Costa C, Tirado González S, Ramos-Morcillo AJ, Díaz Agea JL, Ruzafa-Martínez M, Van-der Hofstadt Román CJ. Validación de la Escala sobre Habilidades de Comunicación [Validation of the Communication Skills Scale in nursing professionals]. *An del Sist Sanit Navar*. 2019;42(3):291–301. <https://doi.org/10.23938/ASSN.0745>. Spanish.
26. Sánchez Expósito J, Leal Costa C, Díaz Agea JL, Carrillo Izquierdo MD, Jiménez Rodríguez D. Socio-emotional competencies as predictors of performance of nursing students in simulated clinical practice. *Nurse Educ Pract*. 2018;32:122–8. <https://doi.org/10.1016/j.nepr.2018.07.009>
27. Korkut Owen F, Bugay A. Developing a communication skills scale: validity and reliability studies. *Mersin Univ J Fac Educ*. 2014;10:51–64.
28. Leal-Costa C, Tirado-González S, Rodríguez-Marín J, vander-Hofstadt-Román CJ. Psychometric properties of the health professionals communication skills scale (HP-CSS). *Int J Clin Health Psychol*. 2016;16(1):76–86. <https://doi.org/10.1016/j.ijchp.2015.04.001>
29. Sousa V, Rojjanasrirat W. Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. *J Eval Clin Pract*. 2010;17(2):268–74. <https://doi.org/10.1111/j.1365-2753.2010.01434.x>
30. World Health Organization. Process of translation and adaptation of instruments [Internet]. Geneva, Switzerland: World Health Organization; 2015 [cited 2019 Mar 04]. Available from: https://www.who.int/substance_abuse/research_tools/translation/en/
31. DeVellis RF. Scale development: theory and applications. 3rd ed. London: Sage Publications; 2012. p. 203–4.
32. Ersanli K, Balci S. Developing a communication skills inventory: its validity and reliability. *Turkish Psychol Counsel Guid J*. 1998;10(2):7–12. Turkish.
33. Kline RB. Principles and practice of structural equation modeling. New York: The Guilford Press; 2011. p. 427.
34. Polit DF, Beck CT, Owen SW. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Res Nurs Health*. 2007;30(4):459–67. <https://doi.org/10.1002/nur.20199>
35. Lynn SJ, Das LS, Hallquist MN, Williams JC. Mindfulness, acceptance, and hypnosis: cognitive and clinical perspectives. *Int J Clin Exp Hypn*. 2006;54(2):143–66. <https://doi.org/10.1080/00207140500528240>. French.
36. Davis L. Instrument review: getting the most from a panel of experts. *Appl Nurs Res*. 1992;5(4):194–7. [https://doi.org/10.1016/S0897-1897\(05\)80008-4](https://doi.org/10.1016/S0897-1897(05)80008-4)
37. Nunnally J, Bernstein I. Psychometric theory. 3rd ed. New York: McGraw-Hill; 1994. p. 248–92.
38. Streiner D, Norman G. Cairney J. Health measurement scales: a practical guide to their development and use. 5th ed. Oxford: Oxford University Press; 2015. p. 84.
39. Brown TA. Confirmatory factor analysis for applied research. 2nd ed. New York: Guilford Press; 2006. p. 157–84.
40. Cole DA, Ciesla J, Steiger J. The insidious effects of failing to include design driven residuals in latent-variable covariance structure analysis. *Psychol Methods*. 2008;12(4):381–98. <https://doi.org/10.1037/1082-989X.12.4.381>
41. Hermida R. The problem of allowing correlated errors in structural equation modeling: concerns and considerations. *Comput Methods Soc Sci*. 2015;3(1):5–7.
42. Shah R, Goldstein SM. Use of structural equation modeling in operations management research: looking back and forward. *J Oper Manag*. 2006;24(2):148–69. <https://doi.org/10.1016/j.jom.2005.05.001>
43. Schermelleh-Engel K, Moosbrugger H, Müller H. Evaluating the fit of structural equation models: tests of significance and descriptive goodness of fit measures. *Methods Psychol Res*. 2003;8(2):23–74.
44. Jöreskog KG. Testing structural equation models. In: Bollen KA, Long JS, editors. *Testing structural equation models*. CA: Sage Publications; 1993. p. 294–316.
45. Timmins F. Managers' duty to maintain good workplace communications skills. *Nurs Manag*. 2011;18(3):30–4. <https://doi.org/10.7748/nm2011.06.18.3.30.c8538>
46. Synnot A, Bragge P, Lowe D, Nunn J, O'Sullivan M, Horvat L, et al. Research priorities in health communication and participation: international survey of consumers and other stakeholders. *BMJ Open*. 2018;8(5):e019481. <https://doi.org/10.1136/bmjopen-2017-019481>