Psychometric Properties of the Turkish Version of Hypertension Self-Care Profile

Hipertansiyon Öz Bakım Profili Türkçe Versiyonunun Psikometrik Özellikleri

ABSTRACT

Objective: The aim of this study was to determine the psychometric properties of the Turkish version of the Hypertension Self-Care Profile.

Methods: This methodological study was conducted with a total of 300 patients with hypertension who visited the internal medicine outpatient clinic of a hospital. The validity of the Hypertension Self-Care Profile was determined with language validity, content validity, and construct validity. The Cronbach's alpha, item-total score correlations, and test–retest were used in the evaluation of reliability.

Results: Item-total correlations ranged from 0.37 to 0.58 for Behavior, 0.64 to 0.83 for Motivation, and 0.28 to 0.61 for Self-Efficacy scales. The Cronbach's alpha coefficient was 0.81, 0.94, and 0.80 for Behavior, Motivation, and Self-Efficacy scales, respectively. The test–retest reliability was between 0.96 and 0.99.

Conclusion: The Turkish Version of Hypertension Self-Care Profile concluded that the scale is a valid and reliable tool and can be used to determine the self-care of patients with hypertension.

Keywords: Hypertension, reliability, self-care, validity

ÖZ

Amaç: Bu çalışmanın amacı, hipertansiyon öz bakım profilinin Türkçe versiyonunun psikometrik özelliklerini belirlemektir.

Yöntemler: Bu metodolojik çalışma, bir hastanenin dahiliye polikliniğine başvuran hipertansiyonlu toplam 300 hasta ile gerçekleştirilmiştir. Hipertansiyon Öz Bakım Profilinin geçerliği dil geçerliliği, içerik geçerliliği ve yapı geçerliliği ile belirlenmiştir. Güvenirliğin değerlendirilmesinde Cronbach alfa, madde-toplam puan korelasyonu ve test-tekrar test kullanılmıştır.

Bulgular: Madde toplam korelasyonu Davranış Ölçeği için 0,37 ile 0,58, Motivasyon Ölçeği için 0,64 ile 0,83, Öz Yeterlik Ölçeği için 0,28 ile 0,61 arasında değişmektedir. Davranış, Motivasyon ve Öz-yeterlik ölçekleri için Cronbach alfa katsayısı sırasıyla 0,81, 0,94 ve 0,80'dir. Test-tekrar test güvenirliği 0,96 ile 0,99 arasındadır.

Sonuç: HBP SCP-Tr ölçeğin geçerli ve güvenilir bir araç olduğu ve hipertansiyonlu hastaların öz bakımını belirlemede kullanılabileceği sonucuna varılmıştır.

Anahtar Kelimeler: Geçerlilik, güvenilirlik, hipertansiyon, öz bakım

Öznur Adadıoğlu[1]
Ahmet Seven[2]
Esin Danç[3]

[1]Department of Internal Medicine Nursing, Sakarya University, Faculty of Health Science, Sakarya, Türkiye
[2]Department of Nursing, Kahramanmaras Sütcü Imam University, Afsin Faculty of Health Sciences, Kahramanmaraş, Türkiye
[3]Division of Nursing, Sakarya Yenikent Hospital, Sakarya, Türkiye

Corresponding author:
Öznur Adadıoğlu
✉ oznuradadioglu@sakarya.edu.tr

Introduction

Hypertension, the prevalence of which is increasing daily, affects all countries worldwide. According to data from the World Health Organization, 1.4 billion people worldwide have hypertension, with most of those affected living in low- and middle-income countries.[1] In Türkiye, there are more than 13 million patients with hypertension, and the prevalence of hypertension in adults is 31.2%.[2] The World Health Organization notes that hypertension ranks first globally among preventable causes of death.[3]

In addition to increases in the prevalence of hypertension worldwide and in Türkiye, an increase has also been observed in secondary mortality rates due to hypertension. In Türkiye in 2015, there were more than 54 000 deaths due to hypertension, and hypertension accounted for 13.4% of total deaths.[4] According to the results of

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one study in Türkiye, lack of awareness of hypertension was found to be associated with the male gender, a young age, rural residency, a lower level of education, being employed, a sedentary lifestyle, less physical activity in women, and unhealthy dietary habits and modifiable risk factors, including smoking and drinking, in men. The same study also suggested that a low level of education for women, increasing age, marital status subgroups within gender (being single for men and being married for women), smoking and alcohol use for men, and diseases such as diabetes and obesity were also directly associated with poor control of hypertension.[5] The development of self-care behaviors in patients, in order to control blood pressure and keep it in a healthy range, plays an important role in disease management.[6]

Self-care is defined as the capacity of people, families, and communities to participate in health development and protection, disease prevention, and other activities to cope with a disease and/or disability with or without the support of a healthcare provider.[7]

Self-care in hypertension is defined as a dynamic and active process that requires knowledge, attitude, discipline, determination, commitment, self-regulation, empowerment, and self-efficacy.[8] The optimal self-care behaviors recommended for disease control in hypertension are the regular use of antihypertensive drugs, adherence to a low-salt diet, adequate physical activity, and cessation of smoking.[9] In a meta-analysis, it was stated that self-care interventions were very effective in hypertension and that decreases in systolic and diastolic blood pressure were observed as a result of these interventions.[10] However, self-care compliance among adults with hypertension is low and they are often reluctant to make the recommended behavioral changes.[9]

The concept of self-care in patients with hypertension is multidimensional. The capacity for self-care depends on a person's self-efficacy, their motivation, and the actual execution of the necessary activities as reflected in their behaviors.[11] In their study, Zareban et al[6] showed that self-efficacy in hypertension was the strongest predictor of self-care. Bandura[12] suggested that self-efficacy affects motivation and participation in self-care behaviors. Individuals with high self-efficacy are able to motivate themselves to engage in regular self-care behaviors. There are also other studies in the literature reporting that higher self-efficacy is associated with participation in self-care.[13-15] It is important to determine the self-care needs of patients in the management of hypertension, and the Hypertension Self-Care Profile (HBP SCP) is often used for this purpose.[16] No scale has been specifically developed to evaluate the self-care activities of patients with hypertension in Türkiye. There was thus a need to adapt the HBP SCP for use in Turkish society. This study aimed to adapt the HBP SCP for Turkish society and to determine the validity and reliability of this adaptation.

Methods

This methodological study was carried out on patients with hypertension in the internal medicine outpatient clinic of a public hospital between August and December 2019. In methodological studies, the sample size should be at least 5-10 times the number of items on the scale.[17] The HBP SCP has 60 items, so the study was completed with 300 patients, 5 times the number of items. Individuals who were aged 18 years and above, willing to participate in the study, literate, had no communication problems, had been followed up with a diagnosis of hypertension for at least 1 year, and had received antihypertensive treatment were included in the study.

In the content validity analysis, 8 experts' opinions on the scale were obtained and 10 patients were included in the pilot study. The intraclass correlation coefficient (ICC) was used in the test-retest study for the Turkish version of Hypertension Self-Care Profile (HBP SCP-Tr). The sample size required for a high level of agreement (ICC of at least 0.95 or 0.97) between the 2 measurements ranges from 18 to 50.[18] The HBP SCP was applied to 50 patients with hypertension 2 weeks later to evaluate the test-retest reliability and these patients were included in the sample. In the study, the HBP SCP was renamed the HBP SCP-Tr to indicate its adaptation into Turkish.

Data Collection Tools

The data were collected using the HBP SCP-Tr and a Patient Information Form. The Patient Information Form consisted of questions about sociodemographic characteristics (age, gender, education, marital status, employment status, family history of hypertension) and characteristics of the individual's disease (disease duration in years, number of medications used to treat hypertension)

The HBP SCP was developed by Han et al.[16] It contains scales for Behavior, Motivation, and Self-efficacy that can be used together or independently. The HBP SCP is used to assess and determine the self-care behavior, motivation, and self-efficacy of patients with hypertension. Each of the 3 scales is scored separately, resulting in scoring ranging from 20 to 80. A higher score represents better self-care in a patient with hypertension. The HBP SCP is a 4-point Likert scale. The original HBP SCP scales' Cronbach's α coefficients were 0.83 for Behavior, 0.93 for Motivation, and 0.91 for Self-efficacy.[16] The Cronbach's α coefficients of the Behavior, Motivation and Self-efficacy scales in the Malay version were 0.85, 0.92, and 0.94, respectively.[19] The internal consistency coefficients of the Behavior, Motivation, and Self-efficacy scales in Mandarin were 0.83, 0.92, and 0.92, respectively.[20]

In adapting the HBP SCP to Turkish society, first, the necessary permission was first obtained through email from Hae-Ra Han, who developed the scale. The study was initiated after receiving the approval of the Sakarya University Clinical Research Ethics Committee (Approval number: 19.07.2019-231, Date:19.07.2019). The patients with hypertension constituting the sample group were informed about the aim of the study and their written consent was obtained. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki.

The data were completed by transferring the data to the IBM Statistical Package for the Social Sciences (SPSS, Version 23.0, Armonk, NY, USA) and IBM SPSS AMOS 23 (IBM Corp., Armonk, NY, USA) programs. In evaluating the study data, categorical variables were shown with frequency (number, percentage)

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and descriptive statistics (mean, standard deviation) were presented for numerical variables. The content validity index (CVI) was used for content validity. The suitability of the data for factor analysis was examined using the Kaiser–Meyer–Olkin (KMO) value and Bartlett's test.

Exploratory factor analysis (EFA) with varimax rotation was performed for construct validity. Confirmatory factor analysis (CFA) is used in scale adjustment to examine the similarities and differences in the factor structure of the adjusted scale based on the factor structure of the original scale. The CFA was evaluated with the goodness of fit indices.[21] Test–retest is a technique used to check the stability of the measurement instrument. It is based on the idea of applying the test twice to the same group at a certain time interval and evaluating the correlation between the results of the 2 tests. The ICC was used in the test–retest study for the HBP SCP-Tr.[22]

The Cronbach's alpha internal consistency coefficient and Spearman–Brown and Guttman split-half reliability coefficients were taken into consideration when ascertaining reliability. The Cronbach's alpha coefficient is used to determine whether items consistently measure a particular conceptual construct; it is often used in combination with Likert-type scales that use a single measurement instrument.[23] Spearman–Brown and Guttman split-half analyses are used to calculate scale reliability coefficients for the 2 halves.[24]

Item–total score correlation was also calculated. Item–total score correlation coefficients explain the relationship between the scores obtained from the test items and the total score of the test. A positive and high item–total score correlation indicates that the items capture similar behaviors and that the internal consistency of the test is high.[25]

Results

The mean age of patients with hypertension was 61.31 ± 11.02, and 73.7% of the patients were female. Most patients were married (86%). Of the patients, 6% were university graduates, while 12.7% were employed. A family history of hypertension was found in 52.7% of the patients, 19.3% had experienced hypertension for 20 years more, and 75.7% were only using only 1 medication in their antihypertensive treatment (Table 1).

Process of Cultural Adaptation
When the cultural background, country of residence, and language of a new target population are different from the culture in which a scale was developed, the scale needs to be culturally adapted. This process of adaptation includes testing for language and content validity, using an expert panel, and pilot testing.[26]

The cultural adaptation process of the HBP SCP scales thus consisted of 3 stages: testing for language validity, content validity, and pilot testing.[27] In the first stage of the study, the HBP SCP was translated into Turkish by 2 academics fluent in both Turkish and English. A single form was created after these translations had been evaluated. The HBP SCP-Tr was then translated back into English by another academic fluent in English who had not seen the original English version of the HBP SCP. This back-translation was compared with the original English scale, and semantic equivalence was achieved.

Table 1. Sociodemographic Characteristics of Participants (n = 300)

Characteristics	n	%
Age (mean ± SD)	61.31 ± 11.02	
Gender		
Female	221	73.7
Male	79	26.3
Marital status		
Married	258	86.0
Single	42	14.0
Educational level		
Literate	56	18.7
Elementary–secondary school	193	64.3
High school	33	11.0
University	18	6.0
Employment status		
Employed	38	12.7
Unemployed	261	87.3
Disease duration in years		
1-5	82	27.3
6-10	95	31.7
11-20	65	21.7
20 and above	58	19.3
Number of medications used to treat hypertension		
1 drug	227	75.7
2 drugs	54	18.0
3 and above	19	6.3
Family history of hypertension		
Yes	156	52.7
No	140	47.3

In the content validity testing, 8 experts (5 lecturers from the nursing department, 1 clinical nurse with a doctorate, 1 clinical nurse with a master's degree, and 1 specialist doctor) provided their opinions about the HBP SCP-Tr. These experts were asked to give each item of the Behavior, Self-efficacy and Motivation scales a score of between 1 and 4 points. In line with the opinions of the experts, the CVI was calculated by dividing the number of experts who gave 3 and 4 points to the items in the scale by the total number of experts. A value of 0.83 was considered adequate for the content validity.[28]

Pilot testing was carried out with 10 patients in the outpatient clinic where the study was conducted in order to evaluate the scales' comprehensibility. These patients were not included in the study sample. The patients with hypertension reported that the questions were easy to understand and that they did not have any problems answering them. Therefore, no revision was made to the HBP SCP-Tr at this stage. The patients were

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able to complete the HBP SCP-Tr and Patient Information Form in 15 to 20 minutes.

Validity and Reliability of the Turkish Version of Hypertension

Behavior Scale

The mean CVI value of the HBP SCP-Tr Behavior scale was found to be 0.99. The KMO coefficient was found to be 0.781 and the result of the Bartlett's test was $\chi^2 = 1735.14$ ($P < .001$). These results showed that the sample size was adequate and suitable for factor analysis. The varimax axis rotation technique was applied for the interpretation of data in the factor analysis. Since the factor loads of items 1, 2, 4, 8, 11, 12, 13, 14, and 20 were below 0.40, these 9 items were excluded from the scale and the number of items decreased from 20 to 11. The HBP SCP-Tr Behavior scale consists of a 2-factor structure with an eigenvalue > 1. These 2 factors determined by factor analysis accounted for 59.48% of the total variance of the scale. This first factor included 6 items and was named "conscious nutrition." The second factor included 5 items and was named "disease management." The factor loadings of the HBP SCP-Tr Behavior scale were between 0.54 and 0.90 (Table 2).

The fit indices of the model related to CFA (χ^2/df 3.40, Root Mean Square Error of Approximation (RMSEA) 0.08, Standardized Root

Table 2. Results of the Exploratory Factor Analysis for Behavior Scale

Items and Subscales	Factor Loading
Factor 1: conscious nutrition	
3. Replace traditional high-salt foods (e.g. canned soups, Oodles of Noodles) with low-salt products (e.g. homemade soups, fresh vegetables)?	0.663
5. Eat less than 1 teaspoon of table salt per day (6 g)?	0.670
6. Eat less foods that are high in saturated (e.g. red meat, butter) and trans fat (e.g. shortening)?	0.654
7. Use broil, bake, or steam instead of frying when cooking?	0.845
9. Replace traditional high-fat foods (e.g. deep fried chicken) with low-fat products (e.g. baked chicken)?	0.900
10. Limit total calorie intake from fat (less than 65 g) daily?	0.795
Factor 2: disease management	
15. Forget to take your blood pressure medicine?	0.871
16. Forget to fill your prescriptions?	0.883
17. Keep your weight down?	0.541
18. Monitor situations that cause a high level of stress (e.g. arguments, death in the family) resulting in blood pressure elevation?	0.749
19. Engage in activities that can lower stress (e.g. deep breathing, meditation)?	0.696

Table 3. Mean Score, Cronbach's α Coefficient, Item–Total Correlation, and Test–Retest Reliability of Behavior, Motivation, and Self-Efficacy Scales

Scales	Mean Score	Cronbach's α Coefficient	Item–Total Correlation	Intraclass Correlation Coefficient (50)
Behavior	33.80 ± 4.83	0.813	0.37-0.58	0.996
Conscious nutrition	16.27 ± 3.46	0.852	0.42-0.58	0.993
Disease management	17.53 ± 2.69	0.797	0.37-0.51	1.000
Motivation	53.47± 7.17	0.948	0.64-0.83	0.963
Maintaining health	34.83 ± 5.48	0.944	0.67-0.83	0.953
Disease management	18.64 ± 2.23	0.892	0.64-0.67	0.956
Self-efficacy	36.17 ± 5.10	0.807	0.28-0.61	0.967
Conscious nutrition	19.55 ± 3.77	0.882	0.49-0.61	0.971
Disease management	16.62 ± 2.78	0.716	0.28-0.40	0.950

Mean Square ResiduaL (SRMR) 0.10, Goodness of Fit Index (GFI) 0.92, Turker-Lewis Index (TLI) 0.94, Comperative Fit Index (CFI) 0.94) indicated that the proposed model was suitable for the scale. The item–total score correlations were in the range of 0.37-0.58 and the Cronbach's α coefficient of the scale was found to be 0.81. The intraclass correlation coefficient of the HBP SCP-Tr Behavior scale was 0.996 (Table 3). The Spearman–Brown reliability coefficient for the HBP SCP-Tr Behavioral scale was 0.85 and the Guttman split-half reliability coefficient was 0.83.

Motivation Scale

The mean CVI value of the HBP SCP-Tr Motivation scale was found to be 0.98. The KMO coefficient was found to be 0.92 and the result of Bartlett's test was $\chi^2 = 4213.66$ ($P < .001$). These results showed that the sample size was adequate and suitable for factor analysis. The varimax axis rotation technique was applied for the interpretation of data in the factor analysis. Since the factor loads of items 3, 7, 13, 14, and 15 were below 0.40, these 9 items were excluded from the scale and the number of items decreased from 20 to 15. The HBP SCP-Tr Motivation scale consists of a 2-factor structure with an eigenvalue > 1. These 2 factors determined by factor analysis accounted for 70.91% of the total variance of the scale. The first factor included 10 items and was named "maintaining health." The second factor included 5 items and was named "disease management." The factor loadings of the HBP SCP-Tr Motivation scale were between 0.554 and 0.917 (Table 4). The fit indices of the model related to CFA (χ^2/df 4.69, RMSEA 0.08, SRMR 0.05, GFI 0.90, TLI 0.90, CFI 0.92) indicated that the proposed model was suitable for the scale. In the internal consistency analysis, the item–total score correlations were in

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Table 4. Results of the Exploratory Factor Analysis for Motivation Scale

Items and Subscales	Factor Loading
Factor 1: maintaining health	
1. Take part in regular physical activity (e.g. 30 minutes of walking 4-5 times per week)?	0.733
2. Eat less processed foods such as (e.g. canned or frozen foods, lunch meats)?	0.717
4. Replace traditional high-salt foods (e.g. canned soups, Oodles of Noodles) with low-salt products (e.g. homemade soups, fresh vegetables)?	0.803
5. Limit use of high-salt condiments (e.g. ketchup)	0.560
6. Eat less than 1 teaspoon of table salt per day (6 g)	0.774
8. Use broil, bake, or steam instead of frying when cooking?	0.901
9. Read food nutrition facts label to check information on saturated (e.g. butter, red meats) and trans fat (e.g. shortening)?	0.645
10. Replace traditional high-fat foods (e.g. deep fried chicken) with low-fat foods (e.g. baked chicken)?	0.910
11. Limit total calorie intake from fat (less than 65 g) daily?	0.816
12. Eat 5 or more servings of fruits and vegetables daily?	0.554
Factor 2: disease management	
16. Take your blood pressure medicine?	0.895
17. Get your prescriptions filled?	0.917
18. Keep your weight down?	0.701
19. Try to stay away from anything and anybody that causes stress?	0.754
20. See a doctor regularly?	0.753

Table 5. Results of the Exploratory Factor Analysis for Self-Efficacy Scale

Items and Subscales	Factor Loading
Factor 1: conscious nutrition	
2. Eat less processed foods such as (e.g. lunch meats, canned or frozen foods)?	0.762
4. Replace traditional high-salt foods (e.g. canned soups, Oodles of Noodles) with low-salt products (e.g. homemade soups, fresh vegetables)?	0.747
6. Eat less than 1 teaspoon of table salt per day (6 g)?	0.742
7. Eat less foods that are high in saturated (e.g. red meat, butter) and trans fat (e.g. shortening)?	0.594
8. Use broil, bake, or steam instead of frying when cooking?	0.869
10. Replace traditional high-fat foods (e.g. deep fried chicken) with low-fat products (e.g. baked chicken)?	0.874
11. Limit total calorie intake from fat (less than 65 g) daily?	0.785
Factor 2: disease management	
16. Take your blood pressure medicine?	0.847
17. Get your prescriptions filled?	0.864
18. Keep your weight down?	0.700
19. Try to stay away from anything and anybody that causes any kind of stress?	0.420
20. See a doctor regularly?	0.692

the range of 0.64-0.83 and the Cronbach's α coefficient of the scale was found to be 0.94. The intraclass correlation coefficient of the HBP SCP-Tr Motivation scale was 0.963 (Table 3). For the HBP SCP-Tr Motivation scale, the Spearman–Brown reliability coefficient was 0.96 and the Guttman split-half reliability coefficient was 0.94.

Self-Efficacy Scale
The mean CVI value of the HBP SCP-Tr Self-efficacy scale was found to be 0.96. The KMO coefficient was found to be 0.80 and the result of Bartlett's test was $\chi^2 = 1912.56$ ($P < .001$). The results showed that the sample size was adequate and suitable for factor analysis. The varimax axis rotation technique was applied for the interpretation of data in the factor analysis. Since the factor loads of items 1, 3, 5, 9, 12, 13, 14, and 15 were below 0.40, these 8 items were excluded from the scale and the number of items decreased from 20 to 12. The HBP SCP-Tr Self-efficacy scale consists of a 2-factor structure with an eigenvalue >1. These 2 factors determined by factor analysis accounted for 57.52% of the total variance of the scale. The first factor included 7 items and was named "conscious nutrition." The second factor included 5 items and was named "disease management." The factor loadings of the HBP SCP-Tr Self-efficacy scale were between 0.42 and 0.87 (Table 5). The fit indices of the model related to CFA (χ^2/df 2.81, RMSEA 0.07, SRMR 0.07, GFI 0.92, TLI 0.93, CFI 0.95) indicate that the proposed model is suitable for the scale. In the internal consistency analysis, the item–total score correlations were in the range of 0.28-0.61 and the Cronbach's α coefficient of the scale was found to be 0.80. The intraclass correlation coefficient of the HBP SCP-Tr Self-efficacy scale was 0.967 (Table 3).

For the HBP SCP-Tr Self-efficacy scale, the Spearman–Brown reliability coefficient was 0.75 and the Guttman split-half reliability coefficient was 0.75.

Discussion

In this study, the HBP SCP developed by Han et al[16] was adapted into Turkish. The psychometric evaluation revealed that the HBP SCP-Tr was valid and reliable in a sample of Turkish patients with hypertension.

The CVI, for which the generally accepted standard level is 0.83 and above, was found to be 0.99 for the HBP SCP-Tr

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Behavioral scale, 0.98 for the Motivation scale, and 0.96 for the Self-efficacy scale.[28] It can thus be said that the scales are adequate in terms of content validity. Before factor analysis, Bartlett's test was performed to determine the adequacy of the sample size, and the KMO was calculated to determine the suitability of the sample for factor analysis. The KMO value should be greater than 0.60 for good factor analysis.[29] In this study, the KMO values were 0.78 for the Behavior scale, 0.92 for the Motivation scale, and 0.80 for the Self-efficacy scale. These findings suggest that the sample size was adequate for factor analysis. The importance of Bartlett's test in scale adaptations is that it shows that the sample size is adequate and that the correlation matrix is suitable for factor analysis.[24] In this study, according to the result of Bartlett's test, the data were found to be suitable for factor analysis.

In contrast to the original study, EFA revealed that the Behavior, Motivation, and Self-efficacy scales in this study had a 2-factor structure. In the Chinese version of the scale, the Behavior and Self-efficacy scales consist of 2 factors and the Motivation scale consists of 1 factor.[30] The Vietnamese version of the Behavior scale consists of 5 factors.[31] The Persian version of the Self-efficacy scale consists of 3 factors.[32] The difference in the structure of HBP SCP-Tr in this study from the original HBP SCP may be due to the different culture, ethnicity, and race of the patients with hypertension, as well as other social factors and their individual characteristics. In fact, various adaptation studies conducted in different cultures support this idea.[30-32]

In the process of developing and adapting a scale, it has been stated that the item factor loading value should be at least 0.40 and above.[33] The factor loadings of the HBP SCP-Tr were between 0.42 and 0.91. This accounted for 59.48%, 70.91%, and 57.52% of the variance for the Behavior, Motivation, and Self-efficacy scales, respectively. The higher the variance rates obtained for EFA (they should be 50% and above), the stronger the factor structure of the scale.[34] According to the findings of EFA in the study, the factor loadings were adequate, and the variances accounted for were high.

The CFA supported the 2-factor scale structure provided by EFA for the Behavior, Motivation, and Self-efficacy scales. For the construct validity of the scale, the "goodness-of-fit statistics" applied in the CFA should be at the desired level.[22,24]

According to the results of the CFA of the Behavior, Motivation, and Self-efficacy scales, the fit index values were at acceptable levels and demonstrated that the models had been validated.[35] It has been emphasized in the literature that if Cronbach's α coefficient is high, the reliability of the scale is also high. If the coefficient value is between 0.60 and 0.80, the scale is considered to be reliable, while it is considered to have a high level of reliability when the value is between 0.80 and 1.00.[23]

In this study, Cronbach's α coefficients were 0.81, 0.94, and 0.80 for the Behavior, Motivation, and Self-efficacy scales, respectively. The values of Cronbach's α coefficients showed that the scales were quite reliable and that HBP SCP-Tr had an overall high reliability. The Cronbach's α values of the scales were between 0.83 and 0.93 in the original version and between

0.86 and 0.94 in the Chinese version.[16,30] In the version created for an Asian population, Cronbach's α coefficients were 0.857, 0.948, and 0.931 for the Behavior, Motivation, and Self-efficacy scales, respectively.[36] The findings of the present study are similar to the literature. Therefore, it can be said that the scales are quite reliable. The Spearman–Brown and Guttman split-half reliability coefficients for the Behavior, Motivation, and Self-efficacy scales were found to be adequate.[24]

Another internal consistency criterion is the item–total score correlation. Item–total score correlations, which ensure the internal consistency of a scale, are expected to be over 0.30.[25] The item–total correlations in the original scales range from 0.20 to 0.63 for the Behavior scale, 0.46 to 0.70 for the Motivation scale, and 0.40 to 0.74 for the Self-efficacy scale.[16] In this study, the item–total correlations ranged between 0.37 and 0.58 for the Behavior scale, between 0.64 and 0.83 for the Motivation scale, and between 0.28 and 0.61 for the Self-efficacy scale. The item–total score correlation of 1 item was 0.28, but since this was very close to 0.30, and the factor structure was also confirmed in the CFA, the item was not removed in order to preserve the structure of the scale. The findings for the item–total score correlation of the HBP SCP-Tr were similar to those for other language versions of HBP SCP.[31,37] The findings of the present study revealed that there were no problematic items in the HBP SCP-Tr.

The test–retest method for reliability was performed to measure the time invariance of the scale.[27] In the present study, the test–retest method was evaluated using the ICC coefficient. An ICC coefficient value between 0.75 and 1.00 is considered excellent.[38] The ICC values of the Behavior, Motivation, and Self-efficacy scales were close to 1 and the results showed that the scales have excellent internal consistency and reliability in repeated measurements. The ICC coefficients of the HBP SCP-Tr scales were higher than other versions of the scales in different languages.[19,20,39] All these results show that the HBP SCP-Tr scales have internal consistency and reliability.

Limitations
The fact that this study was conducted in only 1 hospital is a limitation in terms of the generalizability of the study results.

Conclusion

The HBP SCP-Tr was found to be appropriate and useful for determining the self-care of patients with hypertension in Türkiye. With 3 scales and 38 items, the HBP SCP-Tr is a valid and reliable tool. The use of these scales will enable the factors affecting the self-care of patients with hypertension in the Turkish population to be determined, as well as contribute to the disease management of patients through studies of nursing interventions. Future studies could also be carried out with different populations in Turkish society, allowing the Behavior, Motivation, and Self-efficacy scales and their sub-dimensions to be evaluated at the same time.

Informed Consent: Written informed consent was obtained from the patients who agreed to take part in the study.

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