Translation and Validation of the Indonesian Version of the Hypertension Self-care Profile

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Abstract

BACKGROUND: High blood pressure self-care profile (HBP-SCP) is one of the instruments that needed to evaluate education program among hypertension patients.

AIM: The purpose of the study was to translate and validate HBP-SCP into Indonesian version.

METHODS: This study involved translation, content validation, and psychometric testing. The first instrument was conducted forward and backward translation by experts. Seven expert reviewed the contents for consistency, clarity, difficulty, representativeness, and suitability for inclusion. Finally, instrument was tested for reliability and validity on 40 hypertensive patients using Cronbach's alpha and Pearson's moment product.

RESULTS: The final Indonesian version of HBP-SCP included behavior, motivation, and self-efficacy that each consists of 20 items questions were valid and reliable with positive expert review ratings (content validity index 0.964), internal consistency reliability coefficient ranged from 0.911 to 0.955. Items questionnaire of Indonesian version of HBP-SCP had strong correlation and significant validity (p ≤ 0.05).

CONCLUSION: Indonesian version of HBP-SCP is a valid and reliable instrument to assess behavior, motivation, and self-efficacy among hypertension patients and evaluate group based hypertension education programs in Indonesia.

Introduction

Hypertension is a serious medical condition that significantly increases the risks of cardiovascular diseases. Reducing the prevalence of hypertension by 25% by 2025 is one of the global targets for non-communicable diseases [1]. In Indonesia, the prevalence of hypertension continues to increase. Based on Basic Health Research in 2013, the prevalence of hypertension was 25.8%, while in 2018 increased to 34.1% [2]. Based on Indonesia Family Life Survey-5, the prevalence of hypertension among study participants in Indonesia was 33.4%, males 31.0%, and among females 35.4% [3].

Hypertension can be diagnosed when patients systolic blood pressure (SBP) is ≥140 mmHg and/or their diastolic blood pressure (DBP) is ≥90 mmHg following repeated examination [4]. Risk factors of hypertension include age, smoking history, excessive salt consumption, physical activity, lack of alcohol consumption, obesity, non-adherence to therapy, and secondary diseases including diabetes, hypercholesterolemia, myocardial infarction, and kidney disease. Prevalence of hypertension was higher among persons with comorbidities (diabetes 64.5%, transient ischemic attack 54.7%, and heart disease 64.4%) and prevalence was lower among persons who did regular vigorous intensity exercise versus those who did moderate intensity exercise (32% vs. 45.7%) and among nonsmokers versus smokers (42.2% vs. 46.6%) [5].

Uncontrolled blood pressure (BP) in hypertensive patients can increase the risk of cardiovascular disease. Factors that influence uncontrolled BP based on a systematic review and meta-analysis include medication non-adherence, hypertension stage, atrial fibrillation, triglycerides, and use of antihypertensive drugs [6]. Based on large cohort studies, high BP is an important risk factor for heart failure, atrial fibrillation, chronic kidney disease, heart valve diseases, aortic syndromes, and dementia, in addition to coronary heart disease and stroke [7]. Factors related to stroke prevention behavior among hypertensive patients include self-efficacy, perception, and awareness of stroke risk [8].

Knowledge of risk factors and lifestyle is important for controlling BP in hypertensive patients.

However, 64.8% of hypertension patients' knowledge was low [9]. Another factor that affects the healthy lifestyle of hypertensive patient is low self-awareness. The results of research state that the rates of awareness, treatment, and control of hypertension were 44.9%, 36.5%, and 24.3% [10].

Health education program is needed to increase knowledge, awareness, and lifestyle of hypertensive patients. Education is effective to controlling BP [11]. Health education in hypertensive patients can be done individually or in groups to control risk factors that can be changed through lifestyle changes. Lifestyle intervention recommended for hypertensive patient includes stop smoking, healthy diet and drinks, regular exercise, lose weight, salt reduction, and lower alcohol intake [4]. In order for the program can be evaluated, an instrument to measure the success of the program is needed. One of the self-care instruments for hypertensive patients is the high BP self-care profile (HBP-SCP) developed by Han *et al.* The instrument can measure the self-care behavior, motivation, and self-efficacy of hypertensive patients [12]. The purpose of the study is to translate and validate HBP-SCP into Indonesian version.

Methods

This research was conducted by cross sectional. The population in this study were seven experts and 40 hypertensive patients in the community of the Central Java region of Indonesia. The research was conducted in June 2020–February 2021 after obtaining ethical clearance from the Ethics Commission of Medicine, Public Health and Nursing Faculty of Gadjah Mada University Ref. No.: KE/FK/0621/EC2020. This study involved translation, validation, and reliability testing (Figure 1).

Translation procedure

The first instrument was conducted forward and backward translation by two professional translator Jenderal Soedirman University. The translator consists of English language expert and expert in health science. After translated language into Bahasa Indonesia, the two experts compared the original HBP-SCP version with the results of the back translated Indonesian version instrument. Next, we conducted discussions and adjustments in Indonesian to get the final version which ready for use in the study.

Content validity procedure

Content validity is performed by experts with different backgrounds, usually seven or more
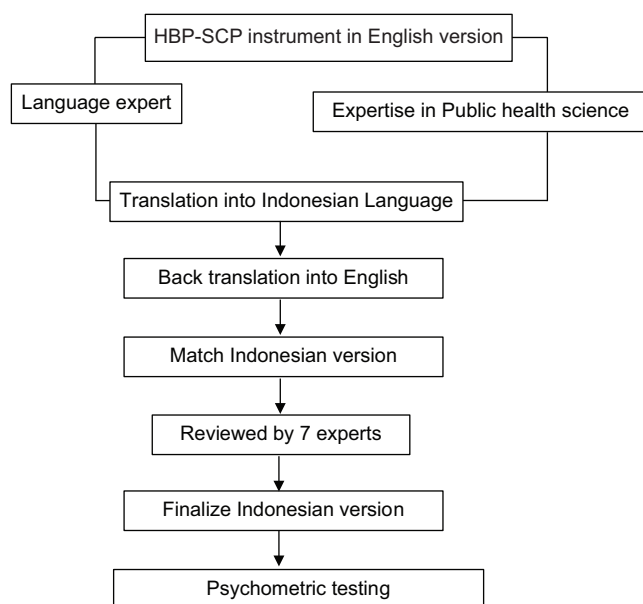

Figure 1: Processes of translational and validation of the Indonesian version of high blood pressure self-care profile

experts [13]. The expert consists of seven people including specialist doctor, nursing lecturer, health center nurse, nutritionists, public health expert, pharmacist, and sociologist. Experts received explanatory sheets about the objectives, validation procedures, and translated instruments before review. Experts reviewed HBP-SCP which consisted of behaviors, motivation, and self-efficacy, each consisting of 20 question items. Experts reviewed the contents for consistency, clarity, difficulty, representativeness, and suitability for inclusion by providing a dichotomous response scale: "Clear = 1" versus "not clear=0." The experts also provided suggestions to improve clarity the questionnaire items.

Psychometric testing

Instruments that have been validated by the experts are corrected according to the suggestions of the experts and then pilot testing is carried out to test the validity and reliability. Forty hypertensive patients who are active in Integrated Health Care Center (Posyandu) in Central Java participated as respondents. The questionnaire which is distributed to the respondents contains the explanation of the questionnaire and the instructions for each of HBP-SCP component questions. Instructions for behavioral questions are "How often do you do the following?" For motivational questions is "How important is it for you to do the following?" and for self-efficacy questions is "How confident are you that you could do the following?" The instructions have been translated into Indonesian. Respondents gave responses on a 1–4 Likert scale. Never, sometimes, often, and always are the answer to a behavioral item questions. Not important, less important, important, and very

Table 1: CVI of Indonesian version of HBP-SCP: Behavior, motivation, and self-efficacy scale

Experts	Consistency	Clarity	Inclusion	Difficulty	Representativeness	Total score
Neurologist	20/20	20/20	20/20	20/20	20/20	100/100
Nursing lecturer	20/20	18/20	20/20	17/20	20/20	95/100
Nurse (public health center)	20/20	18/20	20/20	18/20	20/20	96/100
Nutritionist	20/20	20/20	20/20	20/20	20/20	100/100
Public health expert	20/20	20/20	20/20	20/20	20/20	100/100
Pharmacist	20/20	20/20	20/20	17/20	20/20	97/100
Sociologist	20/20	14/20	20/20	18/20	20/20	92/100
Score						675/700
CVI						0.964

CVI: Content validity index.

important are the answers to motivational questions and unsure, not sure, and very sure are the answers to questions of self-efficacy. Furthermore, the data were analyzed using descriptive statistics for the sample characteristic, Cronbach's alpha coefficient for reliability, and data correlation using Pearson's moment product.

Results

The Indonesian version of HBP-SCP consists of 20 questions for behavior, 20 questions for motivation, and 20 questions for self-efficacy. The results of the content validity based on reviews from experts showed that content validity index (CVI) = 0.964 (Table 1). The experts gave recommendations that several question items needed to be modified because they were unclear or could be confusing. The modified question items included numbers 2, 3, 4, 10, 12, 16, and 17. The sociodemographic characteristics of hypertensive patients who participated in the validity and reliability test are presented in Table 2. Based on this table, it is known that the average participant is 61 years old, mostly female, basic education, low income, and has health insurance.

The results of the questionnaire validity and reliability are presented in Table 3. The results of the reliability test showed that Cronbach's alpha value was more than 0.7 for all question components on the HBP-SCP questionnaire: Behavior (0.955), motivation (0.918), and self-efficacy (0.911). Pearson's correlation coefficients mostly show a strong correlation for self-care behavior, motivation, and self-efficacy questionnaires (Table 4). All HBP-SCP behavior question items had a strong correlation with r = 0.572–0.922 (p < 0.001). Most of the HBP- SCP motivation and self-efficacy question items also have a moderate to strong correlation with r = 0.368–0.846 (p < 0.001–0.010), except for question item number 15 which has a weak correlation r = 0.108 (p = 0.254) for motivation and r = 0.219 (p = 0.087) for self-efficacy.

Discussion

One of the nursing conceptual models to improve the independent behavior of patients in health care is the theory of self-care from Orem [14]. Orem developed the theory of nursing systems, self-care deficits, and self-care. Self-care is a system of actions shown by a person in maintaining life, health, development, and welfare [15].

Table 2: Sociodemographic characteristic of hypertension patients (n=40)

Characteristic	Frequency (%)	Mean (SD)
Age (years)		61.67 (10.72)
Gender		
Male	12 (30)	
Female	28 (70)	
Marital status		
Single	1 (2.5)	
Married	27 (67.5)	
Widow/widower	12 (30)	
Educational status		
Primary	33 (82.5)	
Senior high school	6 (15)	
College/university	1 (2.5)	
Working status		
Not working	16 (40)	
Laborer	3 (7.5)	
Farmer	17 (42.5)	
Government sector	2 (5)	
Entrepreneur	2 (5)	
Monthly income		
<Minimum regional payment	32 (80)	
>Minimum regional payment	8 (20)	
Health assurance		
No have	4 (10)	
Have	36 (90)	
Family history of hypertension		
Yes	8 (20)	
No	32 (80)	
Blood pressure		
Systole	161.58 (23.89)	
Diastole	94.27 (10.56)	
BMI		23.22 (3.36)

BMI: Body mass index.

The HBP-SCP instrument prepared by Han *et al.* is based on a valid theoretical framework from Orem, a published evidence based on hypertension care guidelines and a comprehensive area relevant to self-care for hypertensive patients [12]. Based on this concept, they developed the HBP-SCP instrument to measure self-efficacy, namely, HBP-SCP self-efficacy and hypertension patient self-care behavior (HBP-SCP: Behavior). The results of the content validity of the Indonesian version of the HBP-SCP questionnaire by experts showed a CVI >0.9 which indicated that the question items on the instrument were very relevant and clear. Experts recommend that the cutoff value for CVI is 0.75 [16]. Some of the questions were modified according to suggestions from experts which were

adapted to the language, culture, and habits of the Indonesian people. For item question number 10, it needs to be modified with ingredients that contain high fat, for example, fried foods, coconut milk, and fatty foods. Food ingredients that contain high fat are listed in the Minister of Health Regulation no. 41 of 2014 concerning balanced nutrition [17]. For item question number 12, it is necessary to add the sentence "do not consume alcohol" because most Indonesians people do not consume alcohol because of culture and their belief.

Table 3: Reliabilities of Indonesian version of HBP-SCP scales

Scale	No. of items (response format)	Scale mean (SD)	Cronbach's alpha
Behavior	20 (4 points 1–4)	69 (13.85)	0.955
Motivation	20 (4 points 1–4)	74.25 (7.65)	0.918
Self-efficacy	20 (4 points 1–4)	73.30 (7.88)	0.911

HBP-SCP: High blood pressure self-care profile.

Cronbach's alpha coefficient is applied to determine the consistency of the internal reliability instrument with the variable score using the Likert scale. Cronbach's alpha value of 0.7 or higher indicates good homogeneous among the items of the questionnaire [18]. The results of the Person' correlation coefficient for HBP-SCP showed a strong correlation and a significant p-value so that the instrument was declared valid. Based on data, HBP-SCP is a valid and reliable instrument to measure self-care behavior, motivation, and self-efficacy of hypertensive patients. Reliability can change when performed in different populations [19]. Therefore, HBP-SCP needs to be retested with a different or a wider population.

Table 4: Validity of Indonesian version of HBP-SCP scales

No. of items	Behavior		Motivation		Self-efficacy	
	r	p-value	r	p-value	r	p-value
1	0.748	<0.001	0.600	<0.001	0.675	<0.001
2	0.745	<0.001	0.694	<0.001	0.719	<0.001
3	0.572	<0.001	0.846	<0.001	0.774	<0.001
4	0.856	<0.001	0.582	<0.001	0.641	<0.001
5	0.801	<0.001	0.701	<0.001	0.721	<0.001
6	0.914	<0.001	0.610	<0.001	0.659	<0.001
7	0.684	<0.001	0.705	<0.001	0.760	<0.001
8	0.687	<0.001	0.565	<0.001	0.653	<0.001
9	0.922	<0.001	0.823	<0.001	0.758	<0.001
10	0.727	<0.001	0.614	<0.001	0.761	<0.001
11	0.857	<0.001	0.673	<0.001	0.682	<0.001
12	0.585	<0.001	0.733	<0.001	0.677	<0.001
13	0.693	<0.001	0.645	<0.001	0.681	<0.001
14	0.624	<0.001	0.512	<0.001	0.433	0.003
15	0.709	<0.001	0.108	0.254	0.219	0.087
16	0.774	<0.001	0.685	<0.001	0.541	<0.001
17	0.690	<0.001	0.656	<0.001	0.651	<0.001
18	0.693	<0.001	0.603	<0.001	0.636	<0.001
19	0.867	<0.001	0.477	0.001	0.480	<0.001
20	0.686	<0.001	0.693	<0.001	0.368	0.010

HBP-SCP: High blood pressure self-care profile.

Conclusion

The Indonesian version of HBP-SCP has good content coverage and positive expert review rating. It is a valid and reliable instrument to assess behavior, motivation, and self-efficacy among hypertension patients and relevant to evaluate group-based hypertension education programs in Indonesia. The authors recommend that the instrument needs to be tested for validity and reliability in the different or wider population.

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