

Original Research

# Translation, cultural adaptation, and psychometric validation of the Persian hypertension self-management questionnaire in South Sumatera, Indonesia

Yopi Rikmasari , Tri Murti Andayani , Susi Ari Kristina , Dwi Endarti 

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## Abstract

**Background:** Poor self-management has been associated with uncontrolled blood pressure in hypertensive patients. A valid instrument is needed to assess the self-management of hypertensive patients, especially to measure self-management changes after health workers' intervention. **Objective:** To examine the psychometric properties Persian Hypertension Self-Management Questionnaire among patients with hypertension in Indonesia.

**Methods:** Data collection was carried out cross-sectionally using convenience sampling; obtained 407 hypertensive patients in ten primary health centers in South Sumatra Province. The translation of the questionnaire has been carried out by applying forward-backward methods. The Face validity test based on respondents' responses to each question item was evaluated descriptively. We evaluated content validity by an expert with qualitative and quantitative; known group validity was analyzed using chi-square. Internal consistency reliability test using Cronbach alpha and test-retest reliability using Pearson correlation test or Pearson Spearman rank correlation. **Results:** Content validity by the expert shows sentence improvement, and CVI value = 1.00. Face validity shows that respondents can understand well to the questionnaire, and the known group validity was considered very good, as indicated by a significant relationship between the level of self-management and blood pressure control ( $p < 0.001$ ). The reliability assessment on internal consistency was 0.823 with a range of values for each domain, namely 0.710 - 0.823, and Test-retest reliability of 0.707 ( $p < 0.001$ ) with values ranging from 0.600 - 0.906. **Conclusions:** The Persian Hypertension Self-Management Questionnaire has been translated into the Indonesian version and has satisfactory validity and reliability for assessing self-management in hypertensive patients in Indonesia.

**Keywords:** Indonesia; self- management; translation; validation

## INTRODUCTION

Hypertension is a significant disease that causes premature death globally, accounting for 10.4 million deaths per year and a cause of disability-adjusted life-years (DALY) worldwide. In addition, hypertension is associated with cardiovascular disease, cerebrovascular disease, and kidney disease due to inadequate blood pressure control.<sup>1,2</sup> The World Health Organization (WHO) estimates that the prevalence of hypertension globally is 22% of the world population. Southeast Asia is in the third highest rank, with a majority of 25% of the total population.<sup>3</sup> The prevalence of hypertension in Indonesia in the 2018 national health survey based on measurement

results in people aged  $\geq 18$  years reported an increase from 25.8% (2013) to 34.1% (2018).<sup>4</sup>

Self-management is the gold standard in treating chronic diseases, including hypertension, so people with chronic conditions must develop self-management skills.<sup>5</sup> Self-management is a patient-centred intervention process directed at increasing knowledge and skills as well as self-regulation considering each person's specific contextual factors, health condition, and physical and social environment of the patient. Through self-management, patients improve their health behaviour and, in turn, achieve positive blood pressure and quality of life.<sup>6</sup> Various interventions were carried out to improve self-management. In addition, Self-Management Intervention (SMI) improves health-related quality of life, reduces healthcare costs, prevents the development of chronic conditions, and has beneficial effects on older adult hypertensive patients.<sup>5,7</sup> Furthermore, mHealth self-management intervention effectively improves self-management behaviour, medication adherence, and blood pressure control.<sup>8</sup>

However, until now, a measuring tool has yet to be identified as the best instrument for assessing hypertensive patients' self-management level in Indonesia. Questionnaires are a practical and cost-effective method of evaluating participant conditions (such as quality of life, health, and emotional well-being, symptoms experienced), can be administered to large numbers of participants, allow for quantitative analysis including longitudinal assessments and allow for direct

**Yopi RIKMASARI.** MSc. Doctoral Program in Pharmacy, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta; Faculty of Pharmacy, Sekolah Tinggi Ilmu Farmasi Bhakti Pertiwi, Palembang, Indonesia. [mpie030178@gmail.com](mailto:mpie030178@gmail.com)

**Tri Murti ANDAYANI\***. Sp.FRS, PhD. Department of Pharmacology and Clinical Pharmacy, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia. [trimurtia@ugm.ac.id](mailto:trimurtia@ugm.ac.id)

**Susi Ari KRISTINA.** S.Farm, M.Kes. Department of Pharmaceutics, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia. [susiari\\_k@ugm.ac.id](mailto:susiari_k@ugm.ac.id)

**Dwi ENDARTI.** S.F, M.Sc. Department of Pharmaceutics, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia. [endarti\\_apt@ugm.ac.id](mailto:endarti_apt@ugm.ac.id)



comparisons between trial groups different and different studies.<sup>9</sup> In addition, questionnaires provide researchers with a valid instrument to measure acceptance of various healthcare interventions.<sup>10</sup>

In Indonesia, the number of questionnaires used as a reference for measuring intervention outcomes still needs to be increased. One of the instruments available for assessing self-management is the Persian Hypertension Self-Management Questionnaire, with five domains, self-integrity, self-regulation, interaction with health workers/people closest to them, self-monitoring, and adherence to the recommended regimen consisting of 31 questions.<sup>11</sup> The advantage of this questionnaire is that it has a complete domain covering all aspects needed in self-management. Currently, the questionnaire is unavailable in Indonesian, so translation, cultural adaptation, and instrument validation are required to measure self-management in hypertensive patients.

## METHODS

### Ethics

This research has been reviewed and approved by the Medical and Health Ethics Committee of Universitas Gadjah Mada under the number KE/FK/O833/EC/2021.

### Research design and participants

The research was conducted from September to December 2021 in Palembang and OKU Selatan, South Sumatera, Indonesia, with a cross-sectional study design. Data collection at primary health centers on 420 hypertensive patients with inclusion criteria aged > 18 years, diagnosed with essential hypertension for more than three months, willing to become participants, and having the ability to fill out questionnaires. Participants who were willing to participate were given an explanation related to the research and informed consent. In addition, each respondent was given a questionnaire to fill in demographic data and respondent characteristics, namely age, gender, education, working status, monthly income, marriage status, medical insurance, comorbid, and distance and was given a questionnaire. This research was carried out in three steps sequentially, namely 1) translation and cultural adoption, 2) face and content validity, and 3) construct validity and reliability assessment.

### Original questionnaire

The Persian Hypertension Self-management Questionnaire consists of 31 questions with five domains, self-integrity, self-regulation, interaction with health workers/close people, self-monitoring, and adherence to recommended regimens. The questionnaire has optimal psychometric properties with CVI score = 0.82, CVR = 0.63, and IS = 4.41, the internal consistency value of Cronbach's alpha = 0.882, and ICC 0.94. Patients are asked to rate each question item to indicate how often they perform a series of behaviours by selecting one of the 5 Likert scale options: never, sometimes, often, very often, and always. Assessment is done by giving a score that is never (score = 1), sometimes (score = 2), usually (score = 3), very often (score

= 4), and always (score = 5).<sup>11</sup> The results of completing the questionnaire are added so that the score is in the range of values 1 to 155. The score is analyzed so that the greater the deal, the better self-management. The use of this questionnaire has gone through the author's permission.

### Translation and cultural adoption

The Persian Hypertension Self-management Questionnaire was translated into Indonesian using the forward-backward method. The translation is done at the Center for Language Learning, Faculty of Cultural Sciences, Gadjah Mada University by two independent linguists with expertise in language communication and cultural or language structure, followed by re-translation by professional translators into English. Translation validity is needed to ensure whether the translation results reflect the real meaning of the construct to assess the extent to which the constructs on each item in the domain are operationalized and verified using subjective assessments through face validity and content validity.<sup>12</sup>

### Face and content validity

Content validity is carried out to determine whether the question items can adequately measure the domain of concern through evaluation by experts and the target population. Evaluation by experts is carried out using quantification of judgments by judges using proper scaling and statistical procedures, including content validity ratio and content validity index. We assessed the target population by conducting cognitive interviews for each question item to evaluate the face validity.<sup>13,14</sup>

This study assessed content validity by an expert qualitatively and quantitatively.<sup>14,15</sup> The questionnaire was reviewed directly by three experts, namely academic pharmacists who are experts in methodology, clinical pharmacy, social pharmacy, and behaviour. First, the expert compares the original questionnaire and the translation results to ensure equality in terms of semantics, idiomatic, and concepts and ensure that respondents can accept and understand the questionnaire because they have clear instructions.<sup>16,17</sup> After that, the three experts filled out a questionnaire to re-assess the modified questionnaire according to Indonesian culture with criteria relevance (1= not relevant, 2=item need some revision, appropriate but need minor modification), clarity (1=not clear, 2=item need some correction, 3=clear but need minor revision, 4=very clear), simplicity (1=not simple, 2=item need some revision, 3=simple but need minor revision, 4=very simple) and ambiguity (1=doubtful, 2=item need some revision, 3=no doubt but need minor revision, 4=meaning is clear). CVI measured content validity based on relevance, clarity, simplicity, and ambiguity.<sup>14,18,19</sup>

Face validity is a qualitative measure that states the items measured to follow the target population.<sup>15,20</sup> We assessed face validity through 30 respondents' responses to the questionnaire regarding the clarity and ambiguity of the questions, ease of answering, style of language, and letters on each question item showing by providing comments in the column provided for each question item in the questionnaire.



### Construct validity and reliability assessment

The validity test aims to ensure that the items on the questionnaire measure the latent dimensions of the intended criteria, among others, through construct validity. In this study, an assessment of construct validity was carried out, namely differentiation by “known group,” aimed at testing the suitability of the concept being measured to behave as expected about “known group” by selecting binary variables that are known based on theoretical and empirical knowledge and determine the known score group.<sup>13,21</sup> This study measured known group validity through the relationship between self-management and blood pressure control. Patients who practice self-management well are likely to have good blood pressure control.<sup>22</sup> To assess differentiation by “known group,” questionnaires were distributed to 420 respondents.

The reliability test helps ascertain whether the responses from respondents are consistent when repeated, including calculating reliability statistics and test-retest reliability. Calculate reliability statistics through internal consistency by measuring Cronbach’s alpha and test-retest reliability to evaluate the scale’s stability over time with increasing strength of association between scale items over the two time periods.<sup>13</sup> To measure internal consistency, questionnaires were distributed to 420 respondents. Test-rest reliability comparing the scores of two measurements using the same questionnaire without intervention with an interval of 14 to 30 days on 30 respondents.

### Data analysis

Content validity based on the evaluation of expert opinion is analyzed with CVI by determining the CVI of each item in the instrument by adding the experts who assess an item as valid (setting a score of 3 or 4 on relevancy, simplicity, clarity, and ambiguity). The CVI value for each item is calculated using the number of experts who judge the thing as valid divided by the total expert. Acceptable CVI values are in the range of 0.75 to 1.00.<sup>14,18,19</sup> Face validity based on evaluation of respondents analyzed descriptively.<sup>19</sup>

Reliability tests were carried out through internal consistency (Cronbach alpha) and test-retest reliability by Pearson correlation/Spearman rank correlation. In addition, known group validity is assessed through the relationship between the self-management category and the achievement of blood pressure targets using the chi-square test at the significance level set at <0.05 using SPSS version 26 software. Sociodemographic data, patient characteristics, and level of self-management were analyzed using descriptive statistics in percentage and frequency for categorical variables and mean and SD for continuous variables. The self-management criterion is divided into two categories: good self-management and poor self-management, using the cut-off point method. Differences in Persian Hypertension Self-management Questionnaire dimension scores based on demographic characteristics were analyzed using the Mann-Whitney U test or the Kruskal-Wallis H test.

## RESULTS

### Sociodemographic

A total of 420 respondents participated in this study, but only 407 completed the questionnaire. The data obtained show that the majority are female 62.7%, and the majority, aged ≥ 60, is 48.6%, with an average age of 58. Most of the respondents had primary education or below (37.6%), most of them worked (63.6%), had a monthly income < 1.000.000 IDR, and were married 86.2%. Most respondents were participants of the Indonesian National Social Health Insurance 93.1%, and the distance from home to health service facilities was 1 – 5 km 49.6%. The patient’s medical condition showed an average systolic blood pressure of 149.09 ± 18.95 mmHg and a diastolic of 90.17 ± 10.29 mmHg. Most patients had uncontrolled blood pressure 73.7%, without comorbid 77.6%, illness duration of 1 - < 5 years 52.1% and self-management mostly inadequate 53.1%. Co-morbidities experienced by patients are diabetes mellitus and hyperlipidemia (Table 1).

Variable	Category	N (407)	%
Age, years	Mean = 58,38 ± 9,45		
	< 45	28	6.9
	45 – 59	181	44.5
	≥ 60	198	48.6
Gender	Female	255	62.7
	Male	152	37.3
Education	Primary and below	153	37.6
	Middle school	54	13.3
	High School	130	31.9
	Bachelor and above	70	17.2
Working status	Working	259	63.6
	Retired	54	13.3
	Others	94	23.1
Monthly income (IDR)	< 1.000.000 IDR	168	41.3
	1.000.000 - < 3.000.000 IDR	164	40.3
	3.000.000 - < 5.000.000 IDR	64	15,7
	≥ 5.000.000 IDR	11	2.7
Marriage status	Single	26	6.4
	Married	351	86.2
	Divorced/widowed	30	7.4
Medical insurance	Indonesian National Social Health Insurance	379	93.1
	No insurance	28	6.9
Comorbid	Comorbid	91	22.4
	No comorbid	316	77.6
Distance	< 1 km	150	36.9
	1 – 5 km	202	49.6
	>5 km	55	13.5



duration of illness	< 1 year	67	16.5
	1 - < 5 years	212	52.1
	≥ 5 years	128	31.2
Blood pressure	Mean Systolik = 149.09 ± 18.95 mmHg		
	Mean Diastolik = 90.17 ± 10.29 mmHg		
	Uncontrolled	300	73.7
	Controlled	107	26.3
Self-management	Poor (≤ 103)	216	53.1
	Good (104-155)	191	46.9

Abbreviations: IDR, Indonesia Rupiah

### Translation, cultural adoption, content, and face validity

The original Persian Hypertension Self-management Questionnaire has been translated into Indonesian using forward and backward methods. Three pharmacists reviewed the questionnaire with expertise in methodology, clinical pharmacy, social pharmacy, and behavioural science by directly comparing the translated results with the original questionnaire. Comparisons have been made regarding the semantics (meanings of words), idiomatic (expressions), and conceptual alignment between the Indonesian language and the original version. The results of the expert review directly stated that 22 questions had to be corrected according to Indonesian culture and adapted to the initial questionnaire of 31 questions so that respondents in Indonesia could easily understand them (Appendix 1).

In the self-integration domain, item 7 in the original questionnaire, "Due to having hypertension, I have opted for a healthier lifestyle," is corrected to "because I suffer from hypertension, I have adopted a healthier lifestyle." In the self-regulation domain, item number 14 in the original questionnaire, "If I feel an increase or decrease in my blood pressure level, I take the routine measuring concerning blood pressure (for instance, dose of my medicines, diet)" is corrected to "if I feel that my blood pressure is going up or down, I do sports, take

medicine and diet. In interaction with health professionals and significant others, item number 20, "I talk with medical centers staff or my doctor about changing the prescribed treatment schedule," is corrected to "I conveyed to the doctor about changes to the prescribed treatment schedule." In the self-monitoring domain, item 27 in the original questionnaire, "If I feel a decrease or increase in my blood pressure level, I measure it," is corrected to "I will measure my blood pressure if I feel an increase or decrease. In addition, we made no improvements in the adherence to the recommended regimen domain. After that, the expert was asked to re-assess using a questionnaire so that the results obtained on the four components of relevance, simplicity, clarity, and ambiguity obtained CVI = 31/31 = 1.00. It shows that each item in the instrument is valid.

All respondents could respond to all questions on the Persian Hypertension Self-Management Questionnaire. Respondents gave ambiguous and unclear comments on several question items, but overall, respondents can fill out the questionnaire appropriately. As in the domain of self-integrity, item 9 is, "I am trying to quit smoking to control my blood pressure," and item 10, "I have quit smoking to control my blood pressure," are specific questions aimed at smokers' respondents. Respondents who do not smoke can be given the maximum score on both questions.

In addition, differences in self-management based on demographic characteristics have been conducted through the Mann-Whitney and Kruskal Wallis tests. The test results have shown there are significant differences in self-management scores on self-integration and self-regulation based on marital status, on interaction with health professionals and significant others based on work status, as well as self-monitoring and adherence to the recommended regimen based on distance from home to primary health care facilities (table 2).

### Construct validity and reliability assessment

Construct validity by assessing known group validity using the chi-square test shows a relationship between the level of self-management and blood pressure control ( $p < 0.001$ ). As many

Characteristics	SI	SR	I	SM	A
Age, years	0.324	0.886	0.341	0.694	0.410
Gender	0.168	0.464	0.336	0.202	0.918
Education	0.297	0.123	0.106	0.124	0.291
Working status	0.068	0.477	0.011*	0.143	0.873
Monthly income (IDR)	0.093	0.146	0.183	0.150	0.527
Marriage status	0.030*	0.011*	0.346	0.121	0.205
Medical insurance	0.215	0.086	0.210	0.092	0.177
Comorbid	0.195	0.426	0.738	0.545	0.451
Distance	0.621	0.049	0.061	0.022*	0.014*
Duration of illness	0.626	0.957	0.351	0.085	0.829

SI indicates self-integration; SR, self-regulation; I, interaction with health professionals and significant others; SM, self-monitoring; A, Adherence to the recommended regimen

\*Significant value



as 87.5% of respondents with a low level of self-management were in the group of patients with uncontrolled blood pressure, while 41.9% were in the group of patients with controlled self-management of their blood pressure (Table 3).

Test-retest reliability in the five domains of the Persian Hypertension Self-management Questionnaire was carried out using the Pearson correlation/ Spearman rank correlation test

by comparing the scores of two measurements using the same questionnaire without intervention with an interval of 14 to 30 days. The test-retest results show a value of 0.707 with a range in each domain of 0.600 - 0.906, which shows that the questionnaire is stable and reliable. Reliability test by assessing internal consistency using Cronbach alpha with a value of 0.823 with a range of 0.710 - 0.980 so that the questionnaire can be reliable and acceptable (table 4).

Blood pressure control	Poor self-management	Good self-management	Total (n)	p
Uncontrolled	189 (87.5%)	111 (58.1%)	300 (73.7%)	0.000 <sup>a</sup>
Controlled	27 (12.5%)	80 (41.9%)	107 ((26.3%)	
Total (n)	216 (100%)	191 (100%)	407 (100%)	

<sup>a</sup>Chi-square

Item	Test				Item	Retest		
	Test-retest reliability	Internal consistency (Cronbach alpha)	Mean	SD		Internal consistency (Cronbach alpha)	Mean	SD
SI_1	0.781 <sup>a</sup>	0.828	48.40	5.24	SI_2	0.857	44.83	6.16
SR_1	0.600 <sup>a</sup>	0.884	22.23	2.91	SR_2	0.873	22.93	3.17
I_1	0.628 <sup>a</sup>	0.710	21.20	2.84	I_2	0.887	21.67	3.88
SM_1	0.621 <sup>a</sup>	0.714	14.60	1.94	SM_2	0.826	14.33	2.23
A_1	0.906 <sup>b</sup>	0.980	7.00	1.78	A_2	0.972	7.03	1.81

SI indicates self-integration; SR, self-regulation; I, interaction with health professionals and significant others; SM, self-monitoring; A, Adherence to the recommended regimen

<sup>a</sup>Pearson correlation

<sup>b</sup>Spearman rank correlation

## DISCUSSION

Throughout our search, self-management questionnaires for hypertensive patients that can be used to assess the results of interventions still need to be completed. This research is the first to translate and validate 31 question items with five domains Persian Hypertension Self-Management Questionnaire in Indonesian. The questionnaire can be used in needs assessment in intervention studies. The measurement results of the questionnaire in the original version had optimal psychometric properties.<sup>11</sup>

Psychometric test results show that the questionnaire is valid and reliable for measuring self-management in hypertensive patients in Indonesia. In general, the questionnaire displayed good validity test results, namely face validity and known group validity, as well as reliability test results on internal consistency assessment and test-retest reliability. Valid indicates the tool's accuracy in measuring what we want to measure and is reliably related to the consistency of the questionnaire. If it is used to make measurements many times, it will produce the same data.<sup>12</sup>

Good face validity is proven by respondents being able to respond to questions even though several questions are given comments regarding clarity and ambiguity. Overall, respondents

can fill out the questionnaire appropriately. Respondents could understand 13 questions in the self-integrity domain, six in self-regulation, six in the interaction with health professionals and significant others domain, four in the self-monitoring domain, and two in adherence to the recommended regimen. There are substantial self-management differences in demographic characteristics, namely self-integration, self-regulation based on marital status, interaction with health professionals and significant others based on work status, self-monitoring, and adherence to the recommended regimen based on distance from home to primary health care facilities.

We assessed known group validity by analyzing the relationship between the level of self-management and blood pressure control. The self-management level is divided into two cut-off point methods so that a lousy self-management level is obtained if the score is  $\leq 103$  and good if the score is 104 – 155. Blood pressure control refers to the blood pressure target according to JNC VIII because the therapy guidelines in primary healthcare facilities in Indonesia refer more to the JNC guidelines.<sup>23</sup> Many factors influence blood pressure control, including limited access to health services, not having health insurance, absence of health care facilities for routine supervision, failure to diagnose hypertension (failure to assess high blood pressure without showing symptoms, blood pressure measurement



not inaccurate, failure to recognize hypertension), the inertia of therapy from clinicians, insufficient patient education, lack of joint decision-making, harmful lifestyle recommendations and counseling, low adherence to lifestyle modification and compliance to taking antihypertensive medication, lack of monitoring and reporting blood pressure from home, low awareness of patients and health care providers about blood pressure targets and no systematic follow-up.<sup>24</sup> In this study, the level of self-management was related to blood pressure control ( $p < 0.000$ ). Validity measurement indicates the extent to which the questionnaire measures the domain or construct developed to be evaluated.<sup>13</sup> Validity is essential in psychometrics and is related to reliability.<sup>25</sup> In this study, the test-retest results were 0.707, indicating a stable and reliable questionnaire with a range of values for each domain of 0.600 – 0.906. Likewise, the results of internal consistency measurements using Cronbach's alpha 0.823 with a value range of 0.710 – 0.980 indicate a reliable and acceptable questionnaire. Reliability shows the consistency or the stability of size under various conditions, which must obtain the same results.<sup>12</sup> Cronbach's alpha and test-retest reliability are the statistical analyses used to assess scale reliability.<sup>13</sup>

The term self-management refers to an individual's ability to manage their health condition, control symptoms, seek appropriate treatment, make lifestyle modifications, and consider physical consequences and psychosocial effects with or without the support of healthcare facilities.<sup>5,26</sup> In addition, in treating chronic diseases, there are essential elements that influence, namely motivating to make changes, transferring information through education and self-monitoring, developing skills, involving existing resources, including the environment, and involving patients actively by building social support.<sup>27</sup> Self-management education has increased self-efficacy and contributed to blood pressure control.<sup>28</sup> Self-management education by providing health literacy also increases medication adherence and Health-related quality of life.<sup>29,30</sup>

Self-management interventions in hypertensive patients have generally shown success through self-monitoring interventions, patient education, health care led by health professionals (nurses, pharmacists), organizational interventions aimed at providing care, and appointment reminder systems.<sup>31</sup> Factors influencing self-management are human resources, staff training, program content, supporting materials, program implementation protocols, patient population served, and patient communication. In addition, support for implementing interventions and communication between healthcare providers has also been identified as a factor that enhances self-management.<sup>32</sup> The health application is recommended to combine several methods and create applications according to user needs.<sup>33,34</sup> Self-management, combined with telemonitoring of blood pressure measurement, is an additional essential intervention to control hypertension in primary care.<sup>35</sup> There is a complex interaction of intrinsic and extrinsic factors that influence self-care and self-management behavior that should be considered in future research, intervention design,

and implementation.<sup>36</sup>

Every intervention requires a valid and reliable instrument to assess the level of self-management. Generic questionnaires are needed to determine acceptance of interventions from the perspective of recipients that were developed using methods to evaluate the results of interventions reported by participants based on theoretical foundations, previous research, and input from stakeholders. Questionnaires are helpful to researchers as a measuring tool that can be adapted to measure the acceptance of various healthcare interventions.<sup>10</sup>

The Persian Hypertension Self-Management Questionnaire has been translated into the Indonesian version. The limitation of this study is that data collection was carried out during the Covid-19 pandemic, so patients did not routinely seek treatment at healthcare facilities, which might affect self-management. This research is also a cross-sectional study; the results are limited to a self-reported questionnaire, and there may be other factors that we did not observe that we should have considered. In addition, self-management scales in hypertensive patients are still limited, so further psychometric tests are needed.

## CONCLUSIONS

The Persian Hypertension Self-Management Questionnaire has been translated into the Indonesian version. The conclusion from this study shows that the questionnaire is valid and reliable as an instrument for measuring self-management in hypertensive patients in Indonesia.

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## CONFLICTS OF INTEREST

None to declare.

## AUTHOR CONTRIBUTION

Conception and design: YR, TMA, SAK, DE; Analysis and interpretation of the data: YR, TMA, SAK. Drafting of the article: YR, TMA, SAK, DE; Critical revision of the article for important intellectual content: YR, TMA; Final approval of the article: YR, SAK, TMA, DE; Provision of study materials: YR, TMA; Administrative, technical, or logistic support: YR, TMA; Collection and assembly of data: YR, SAK, TMA, DE.

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Appendix 1. Original questionnaire, results of translation and adaptation

No	Original Questionnaire	Translation results in Indonesian	Adaptation results by experts
	Self-integration	Integritas Diri	
1	I consume enough fruits and vegetables (3 – 5 courses every day)	Saya mengkonsumsi cukup buah dan sayur (3-5 sajian setiap hari).	
2	I consume low fat foods	Saya mengkonsumsi makanan rendah lemak.	
3	I consume low salt foods	Saya mengkonsumsi makanan rendah garam.	
4	In order to control my blood pressure, I control the types of food I consume at home	Untuk mengontrol tekanan darah, saya mengatur jenis makanan yang saya konsumsi di rumah.	
5	In order to control my blood pressure, I control the types of food I consume out of home	Untuk mengontrol tekanan darah, saya mengatur jenis makanan yang saya konsumsi di luar rumah.	
6	When selecting any type of food, I consider its effects on blood pressure	Ketika memilih makanan apapun, saya mempertimbangkan pengaruhnya terhadap tekanan darah.	Ketika memilih makanan, saya mempertimbangkan pengaruhnya terhadap tekanan darah.
7	Due to having hypertension, I have opted for a healthier lifestyle (avoiding sitting for a long time)	Karena menderita hipertensi, saya sudah memilih gaya hidup yang lebih sehat (tidak duduk lama).	Karena menderita hipertensi, saya sudah melakukan gaya hidup yang lebih sehat (tidak duduk lama).
8	I control my weight	Saya mengontrol berat badan saya.	Saya mengontrol berat badan
9	I am trying to quit smoking so as to control my blood pressure	Saya sedang mencoba berhenti merokok untuk mengontrol tekanan darah saya.	Saya sedang mencoba berhenti merokok untuk mengontrol tekanan darah
10	I have quit smoking so as to control my blood pressure	Saya sudah berhenti merokok untuk mengontrol tekanan darah saya.	Saya sudah berhenti merokok untuk mengontrol tekanan darah
11	In order to control my blood pressure, I do sports	Saya berolahraga untuk mengontrol tekanan darah saya.	Saya berolahraga untuk mengontrol tekanan darah
12	When I am nervous, I resort to some ways like speaking with my friends or family to get rid of my stress	Ketika saya gelisah, saya menggunakan beberapa cara seperti berbicara dengan teman atau keluarga untuk menghilangkan stress.	Ketika gelisah, saya berbicara dengan teman atau keluarga untuk menghilangkan stress.
13	Despite having hypertension, I take part in social activities (like public walking)	Meski menderita hipertensi, saya ikut serta dalam kegiatan sosial (seperti jalan santai bersama).	Meskipun menderita hipertensi, saya ikut serta dalam kegiatan sosial (seperti jalan santai bersama).
	Self - regulation	Regulasi Diri	
14	If I feel an increase or decrease in my blood pressure level, I take the routine measuring concerning blood pressure (for instance, dose of my medicines, diet, etc)	Jika saya merasakan peningkatan atau penurunan tingkat tekanan darah, saya melakukan tindakan rutin yang berkaitan dengan tekanan darah (seperti minum obat, diet, dsb).	Jika saya merasa tekanan darah naik atau turun, saya melakukan olahraga, minum obat, diet dan lain - lain
15	I can understand the signs and symptoms of any decrease or increase in my blood pressure level	Saya dapat mengerti tanda dan gejala peningkatan atau penurunan tingkat tekanan darah saya.	Saya mengerti tanda dan gejala peningkatan atau penurunan tekanan darah
16	I take the recommendations of physicians or medical centers staff about treating any decrease or increase in blood pressure for granted	Saya menerima dengan yakin atas rekomendasi dari dokter atau tenaga kesehatan untuk memperlakukan kondisi hipertensi saya.	Saya mengikuti rekomendasi dokter atau tenaga kesehatan tentang cara mengelola tekanan darah
17	I take any sign of a decrease or increase in blood pressure to be important	Saya menganggap penting semua tanda-tanda menurun atau meningkatnya tekanan darah.	Saya memperhatikan tanda-tanda penurunan atau peningkatan tekanan darah.
18	I take any cause that may affect blood pressure level to be important	Saya menganggap penting semua penyebab yang dapat mempengaruhi tingkat tekanan darah.	Saya menganggap penting semua penyebab yang dapat mempengaruhi tekanan darah.
19	I control my blood pressure level in order to evade its complications	Saya mengontrol tingkat tekanan darah saya untuk menghindari komplikasinya	Saya mengontrol tekanan darah untuk menghindari komplikasi
	Interaction with health professionals and significant others	Interaksi dengan Tenaga Kesehatan atau Orang-orang terdekat	
20	I talk with medical centers staff or my doctor about changing the prescribed treatment schedule	Saya berbicara dengan staff pusat layanan kesehatan atau dokter saya tentang perubahan jadwal pengobatan yang telah ditentukan.	Saya menyampaikan kepada dokter tentang perubahan jadwal pengobatan yang telah ditentukan

21	I talk with medical centers personnel or my doctor about the possibility of changing the prescribed treatment schedule	Saya berbicara dengan staf pusat layanan kesehatan atau dokter tentang kemungkinan mengubah jadwal pengobatan yang telah ditentukan.	Saya menyampaikan kepada dokter tentang kemungkinan perubahan jadwal pengobatan yang telah ditentukan
22	I comfortably make recommendations to medical centers personnel or my doctor to change my treatment schedule	Saya dapat dengan mudah meminta kepada dokter atau staf pusat layanan kesehatan untuk mengubah jadwal pengobatan saya	Saya dapat dengan mudah meminta kepada dokter untuk mengubah jadwal pengobatan saya
23	I ask my doctor questions about the centers that provide blood pressure care procedurs	Saya bertanya kepada dokter tentang pusat layanan kesehatan yang menyediakan layanan pengobatan tekanan darah.	
24	I ask others (friends, family, neighbor and other patients) to guide me in controlling blood pressure	Saya meminta kepada orang lain (teman, keluarga, tetangga, dan pasien lain) untuk membantu saya mengontrol tekanan darah.	Saya meminta bantuan orang lain (teman, keluarga, tetangga, dan pasien lain) untuk memandu saya dalam mengontrol tekanan darah.
25	I take others (relatives, friends, neighbors) view and beliefs about controlling blood pressure for granted	Saya menerima dengan yakin pendapat dan keyakinan orang lain (teman, keluarga, tetangga) tentang mengontrol tekanan darah.	Saya percaya dengan pendapat orang lain tentang mengontrol tekanan darah
	Self-monitoring	Monitor Diri	
26	I measure my blood pressure on a regular basis	Saya mengukur tekanan darah secara teratur.	
27	If I feel a decrease or increase in my blood pressure level, I measure it	Jika saya merasakan peningkatan atau penurunan tingkat tekanan darah saya, saya akan mengukurnya.	saya akan mengukur tekanan darah jika saya merasakan terjadi peningkatan atau penurunan
28	When there is a decrease or increase in my blood pressure level, I visit my doctor	Ketika terdapat peningkatan atau penurunan tingkat tekanan darah saya, saya akan pergi ke dokter saya.	Ketika tekanan darah meningkat atau menurun, saya akan pergi ke dokter
29	Every 1 – 3 months, I visit my doctor for a checkup or examination	Saya pergi ke dokter untuk pemeriksaan setiap 1-3 bulan.	Saya pergi ke dokter untuk melakukan kontrol setiap 1-3 bulan.
	Adherence to the recommended regimen	Kepatuhan Terhadap Regimen yang direkomendasikan	
30	I consume the prescribed doses of medicines	Saya mengonsumsi obat sesuai dosis yang ditentukan	
31	I take my medicines at the recommended time	Saya minum obat pada waktu yang ditentukan	

**Persian Hypertension Self-Management Questionnaire :  
Versi Bahasa Indonesia**

Manajemen diri merupakan salah satu faktor penting yang mempengaruhi kontrol tekanan darah pasien hipertensi. Terdapat 5 domain manajemen diri yaitu integritas diri, regulasi diri, interaksi dengan tenaga kesehatan dan orang – orang terdekat, monitor diri dan kepatuhan terhadap regimen obat yang direkomendasikan. Untuk mengetahui bagaimana tingkat manajemen diri Bapak/ibu kami meminta kesediaannya untuk mengisi kuesioner sesuai dengan kondisi saat ini secara lengkap. Melalui informasi ini tenaga kesehatan dapat melakukan upaya intervensi untuk meningkatkan manajemen diri Bapak/ibu dengan lebih baik sesuai dengan keadaan bapak/ibu.

**Bagian I. Identitas Responden**

Bagian pertama merupakan formulir isian yang berhubungan dengan identitas Bapak/ibu. Kami meminta kesediaan Bapak/ibu mengisi dengan lengkap sebelum mengisi kuesioner selanjutnya

a	Nama	:	.....
b	Umur	:	.....tahun .....bulan
c	Jenis kelamin	:	Laki – laki Perempuan
d	Tinggi Badan/Berat badan	:	.....m/ .....Kg
e	Status	:	Menikah Belum menikah Cerai
f	Pendidikan terakhir	:	Tidak/belum pernah sekolah Tidak tamat SD Tamat SD Tamat SMP Tamat SMA Tamat diploma keatas
g	Pekerjaan	:	Tidak bekerja PNS/TNI/POLRI/BUMN/BUMD Petani/buruh tani Wiraswasta Buruh/sopir/asisten rumah tangga Nelayan Pegawai swasta Sekolah Lainnya .....
h	Penghasilan (IDR)	:	≤ Rp. 1.000.000 Rp. 1.000.000 – Rp. 3.000.000 Rp. 3.000.000 – Rp. 5.000.000 Rp. 5.000.000 – Rp. 10.000.000 ≥ Rp. 10.000.000

**Bagian II. Kuesioner**

Bagian kedua merupakan pernyataan yang berhubungan dengan manajemen diri. Bapak/ibu untuk dipersilahkan memberikan tanda centang (v) sesuai dengan kondisi yang ada pada saat ini.

No	Pernyataan	Tidak pernah	Kadang – kadang	Sering	Sangat sering	Selalu
<b>Integritas Diri</b>						
1	Saya mengkonsumsi cukup buah dan sayur (3-5 sajian setiap hari).					
2	Saya mengkonsumsi makanan rendah lemak.					
3	Saya mengkonsumsi makanan rendah garam.					
4	Untuk mengontrol tekanan darah, saya mengatur jenis makanan yang saya konsumsi di rumah.					
5	Untuk mengontrol tekanan darah, saya mengatur jenis makanan yang saya konsumsi di luar rumah.					



6	Ketika memilih makanan, saya mempertimbangkan pengaruhnya terhadap tekanan darah.					
7	Karena menderita hipertensi, saya sudah melakukan gaya hidup yang lebih sehat (tidak duduk lama).					
8	Saya mengontrol berat badan					
9	Saya sedang mencoba berhenti merokok untuk mengontrol tekanan darah					
10	Saya sudah berhenti merokok untuk mengontrol tekanan darah					
11	Saya berolahraga untuk mengontrol tekanan darah					
12	Ketika gelisah, berbicara dengan teman atau keluarga untuk menghilangkan stress.					
13	Meskipun menderita hipertensi, saya ikut serta dalam kegiatan sosial (seperti jalan santai bersama).					
<b>Regulasi Diri</b>						
14	Jika saya merasa tekanan darah naik atau turun, saya melakukan olahraga, minum obat, diet dan lain – lain					
15	Saya mengerti tanda dan gejala peningkatan atau penurunan tekanan darah					
16	Saya mengikuti rekomendasi dokter atau tenaga kesehatan tentang cara mengelola tekanan darah					
17	Saya memperhatikan tanda – tanda penurunan atau peningkatan tekanan darah					
18	Saya menganggap penting semua penyebab yang dapat mempengaruhi tekanan darah					
19	Saya mengontrol tekanan darah untuk menghindari komplikasi					
<b>Interaksi dengan Tenaga Kesehatan atau Orang-orang terdekat</b>						
20	Saya menyampaikan kepada dokter tentang perubahan jadwal pengobatan yang telah ditentukan					
21	Saya menyampaikan kepada dokter tentang kemungkinan perubahan jadwal pengobatan yang telah ditentukan					
22	Saya dapat dengan mudah meminta kepada dokter untuk mengubah jadwal pengobatan saya					
23	Saya bertanya kepada dokter tentang pusat layanan kesehatan yang menyediakan layanan pengobatan tekanan darah.					
24	Saya meminta bantuan orang lain (teman, keluarga, tetangga, dan pasien lain) untuk memandu saya dalam mengontrol tekanan darah.					
25	Saya percaya dengan pendapat orang lain tentang mengontrol tekanan darah					
<b>Monitor Diri</b>						
26	Saya mengukur tekanan darah secara teratur.					
27	Saya akan mengukur tekanan darah jika saya merasakan terjadi peningkatan atau penurunan					
28	Ketika tekanan darah meningkat atau menurun, saya akan pergi ke dokter					
29	Saya pergi ke dokter untuk melakukan kontrol setiap 1 – 3 bulan					
<b>Kepatuhan Terhadap Regimen yang direkomendasikan</b>						
30	Saya mengonsumsi obat sesuai dosis yang ditentukan					
31	Saya minum obat pada waktu yang ditentukan					