ANATOL J FAMILY MED
The Anatolian Journal of Family Medicine
Original Article

DOI: 10.5505/anatoljfm.2024.02986
AJFAMED 2024;7(1):2–8

Clinicians' Beliefs and Attitudes about Patient Activation: Validation of the Turkish Clinician Support for Patient Activation Measure by Rasch Analysis

Ercan Kulak,[1] Seyhan Hıdıroğlu,[2] Judith Hibbard,[3] Nadiye Pınar Ay[2]

[1]Eyupsultan District Health Directorate, Istanbul, Türkiye
[2]Department of Public Health, Faculty of Medicine, Marmara University, Istanbul, Türkiye
[3]Institute For Policy Research and Innovation, University of Oregon, Eugene, Usa

ABSTRACT

Objectives: Patient self-management (PSM) and patient activation (PA) are essential for chronic disease management. There is not a trustworthy tool available in Turkey for clinicians' opinions regarding PSM. The objective of this study was to validate the Clinician Support for Patient Activation Measure (CS-PAM) for use in Turkey.

Methods: This study was carried out among 209 clinicians providing care to patients with chronic diseases. The World Health Organization's suggested that methodology was used to translate the CS-PAM into Turkish. Classical test theory methods and Rasch analysis were used for reliability and validity analysis.

Results: The correlation coefficient of the 2-week test–retest reliability was 0.79 ($p<0.001$), and the Cronbach's alpha reliability coefficient was 0.90. Rasch analysis indicated the person reliability, the person separation index, and the item reliability as 0.86, 2.45, and 0.99, respectively. Exploratory factor analysis yielded two subdimensions of the Turkish CS-PAM: "Patient Responsibility" and "Shared Decision Making." The eigenvalues of the subscales were 4.62 and 2.87, and the total variance explained was 57.59%.

Conclusion: The CS-PAM in Turkish is a legitimate and trustworthy instrument for assessing physicians' opinions regarding PSM. It may additionally be utilized for planning interventions that may support physicians.

Keywords: Chronic disease, patient activation, physicians' role, reliability and validity, self-management

Please cite this article as: Kulak E, Hıdıroğlu S, Hibbard J, Ay NP. Clinicians' Beliefs and Attitudes about Patient Activation: Validation of the Turkish Clinician Support for Patient Activation Measure by Rasch Analysis. AJFAMED 2024;7(1):2–8.

Address for correspondence: Dr. Ercan Kulak. Eyupsultan District Health Directorate, Istanbul, Türkiye
Phone: +90 212 564 32 32
E-mail: ercan.kulak@hotmail.com

Received Date: 26.10.2023
Revision Date: 31.10.2023
Accepted Date: 09.04.2024
Published online: 26.04.2024

©Copyright 2024 by Anatolian Journal of Family Medicine - Available online at www.AJFAMED.org

OPEN ACCESS

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

INTRODUCTION

The World Health Organization indicates that non-communicable diseases (NCDs) are the leading cause of mortality, contributing to 71% of annual deaths worldwide.[1] NCDs also have a deteriorating effect on patients' lives; the Global Burden of Disease Study 2017 determined that 62% of disability-adjusted life-years were attributed to NCDs.[2] Effective NCD control requires patients to have the necessary knowledge and abilities to manage their diseases. Thus, two alternative approaches for managing chronic diseases are beginning to emerge: Patient activation (PA) and patient self-management (PSM). PA is a behavioral concept defined as "knowledge, skill, and confidence in managing an individual's health."[3] PSM, as defined by Lorig, is "learning and practicing the necessary skills to maintain an active and emotionally satisfying life in a chronic condition."[4]

Compared to less active patients, active patients experience better health outcomes and cheaper health-care costs.[5] Active patients are also probably going to use medical services more efficiently. PSM requires changes in every aspect of daily life, such as the management of symptoms, treatments, diet, and physical activity. Many patients require learning new

abilities, learning how to control their emotions, and solving novel issues.[4] Since PSM is a key determinant of health outcomes, it is essential to measure PA and improve processes that support PSM.[6] PA Measure, developed by Hibbard et al. in 2004, is the most widely used tool to measure the PSM level of individuals with chronic diseases.[3]

Care for chronic illnesses must be planned and approached from a comprehensive approach.[7] Patient responsibility for self-care and self-management must rise, and this can only happen with regular medical follow-up and clinician support. During this process, clinicians are expected to provide individualized PSM support, taking into account the prognosis of the existing chronic diseases, sociodemographic factors, beliefs, thoughts, attitudes, and the patient's level of activity. To provide this support, physicians are expected to start by evaluating their patients' roles in self-management. The American Clinician Support for Patient Activation Measure (CS-PAM) is a practical tool developed to evaluate clinicians' current beliefs about PSM. At present, there is no trustworthy tool for assessing doctors' attitudes regarding patients' self-management. The objective of this study was to validate the CS-PAM for use in Turkey.

METHOD

Participants

This validation study was conducted among physicians working at a Research and Training Hospital in an Istanbul neighborhood as well as primary health care centers (PHCs). The participants consisted of primary care physicians working in PHCs and residents, specialists, and professors from family medicine, pulmonary medicine, and internal medicine clinics of the hospital. We chose a sample from PHCs and a university hospital to encompass a diverse population from both primary and tertiary health care.

To do factor analysis, it is advised that the sample size should be at least 5–10 times the total number of attributes in the scale.[8] Since the CS-PAM has 13 items, we needed at least 130 participants. But for ease of analysis, we recruited a total of 209 clinicians, 100 from PHCs and 109 from the hospital through convenient sampling. The test–retest analysis was carried out among 30 participants working in PHCs at a 2-week interval.

Data Collection

Data were gathered by the use of a questionnaire. The questionnaire included questions evaluating sociodemographic characteristics, the concept of PSM, and the CS-PAM. The original version of CS-PAM was developed by Hibbard et al. with an adaptation of the PA Measure.[9] PA Measure focuses on various competencies necessary for the successful management of a person's chronic disease.[10] The purpose of the CS-PAM is to assess doctors' opinions regarding the importance of self-management abilities for patients with chronic health conditions. It consists of 13 items, and it is shown to be a valid, reliable, and unidimensional instrument. Each item in CS-PAM is evaluated as 1=not important, 2=somewhat important, 3=important, and 4=very important. If the item does not apply, the clinician is asked to select the N/A option.[9] The CS-PAM score ranges from 0 to 100 and is based on Rasch analysis, which makes an interval measurement.[11] A high score shows that the physician is more likely to agree that self-management abilities are crucial for patients with chronic medical conditions. The level of clinician support in CS-PAM is categorized as low (Level 1), medium (Level 2), and high (Level 3).[12]

Translation and Adaptation Process

The World Health Organization's methodical approach, which included forward translation, expert panel meetings, back-translation, pre-testing, and cognitive interviewing, was followed in translating and adapting the CS-PAM to Turkish. Ultimately, a consensus was reached on the final version.[13] The forward translation was carried out by two independent translators who were advanced in English and were professors in the family medicine and public health departments. An expert panel composed of professors from family medicine, internal medicine, and the public health departments identified and resolved inadequate, or misleading expressions, or concepts in the translated version. Discrepancies between the English and Turkish versions were reviewed and resolved. The instrument was then translated back to English by two English-language lecturers from the School of Foreign Languages. The team that created the CS-PAM authorized the most recent version after a few small differences between the back-translation and the original tool were fixed. The final version was pre-tested, and cognitive interviewing was performed with 20 clinicians. The authors can access the instrument's final version (the Turkish CS-PAM) upon request.

Descriptive data were presented as frequency, percentage, mean, standard deviation, and median (25^{th}-75^{th} percentile). Continuous variables were compared through the Mann–Whitney U and Kruskal–Wallis tests since the data did not follow a normal distribution. For correlation analysis, Spearman's method was used. The accepted threshold for statistical significance was $p<0.05$. Reliability was evaluated using internal consistency analysis and the coefficient of invariance. Internal consistency was evaluated through Cronbach's alpha reliability coefficient, item-total correlation, and item analysis based on the lower-upper group averages. Reliability over time was evaluated with the 2-week test–retest method through Spearman's correlation and

the Wilcoxon test. The construct validity of the scale was evaluated with exploratory factor analysis. The Kaiser–Meyer–Olkin coefficient and Barlett's test were used to determine whether the data were appropriate for factor analysis. The eigenvalue coefficients obtained by the principal component analysis were used for the factor structure, and the factor loadings of each item and explained variance were also calculated. The varimax method was used for rotation. The associations between sociodemographic characteristics and CS-PAM scores were evaluated.

The reliability and validity of CS-PAM were also evaluated through the Rasch analysis. The Rasch model is widely used to examine the psychometric properties of measurement tools using individuals' abilities and the difficulty levels of the items together. Thus, it uses the interaction between individuals and items.[14] The person's ability is related to the difficulty level of the items and, accordingly, to what extent individuals find these items important. It is expected that items with a low level of difficulty will be evaluated as more critical than those with a higher difficulty. The difficulty level of the item is related to whether people find it important or not. The item that participants believe is least significant is the one with the highest difficulty level. In contrast, the one that they believe is most important is the one with the lowest difficulty level.[15]

Rasch analysis was used to assess reliability using person reliability, person separation index, and item reliability. The appropriateness of an individual's reaction to the items about the scale's difficulty structure is assessed using person reliability. The person-separation index is used to classify participants according to their scores. Item reliability is related to the extent to which the items in the measurement tool distinguish individuals. Item difficulty structure and item fit statistics (in-fit and out-fit) were used to evaluate validity by Rasch analysis. In-fit statistics are more sensitive to unexpected responses to items that have a similar difficulty level as the person's ability. Out-fit statistics are more sensitive to unexpected responses to items that are more difficult or easier than one's ability.[15]

RESULTS

Participant Characteristics and the CS-PAM Scores

Among the 209 participants, the median age was 33.0 (28.0–48.0) years, and the median duration of professional experience was 8.0 (3.0–22.0) years. The CS-PAM scores ranged between 26.6 and 100.0, with a median of 61.9 (56.4–68.2) and a mean of 63.1±12.5. Among all, 125 (59.8%) had low support levels, 50 (23.9%) had medium support levels, and 34 (16.3%) had high support levels. CS-PAM scores based on the characteristics of the participants are summarized in Table 1.

Table 1. CS-PAM scores by the characteristics of the participants

		CS-PAM Scores	p
Gender			
Female	107 (51.2)	61.9 (59.9–67.6)	0.544*
Male	102 (48.8)	60.2 (55.4–69.2)	
Place of work			
Primary health-care center	100 (47.9)	63.6 (56.9–69.9)	0.001†
Department of Internal Medicine	69 (33.0)	58.5 (53.9–65.5)	
Department of Family Medicine	32 (15.3)	64.3 (60.2–75.2)	
Department of Pulmonary Diseases	8 (3.8)	57.7 (52.4–64.6)	
Clinician type			
Primary care physician	85 (40.7)	61.9 (55.6–68.9)	0.035†
Resident	73 (34.9)	60.2 (54.6–65.5)	
Specialist	26 (12.4)	67.6 (56.9–72.4)	
Professor	25 (12.0)	61.9 (56.9–72.4)	
Years in practice			
≤10 years	116 (55.5)	60.2 (55.4–66.1)	0.012*
>10 years	93 (44.5)	63.6 (56.9–72.4)	

CS-PAM: Clinician Support for Patient Activation Measure.
Data is presented as n (%) and median (25.-75. percentile).
*Mann-Whitney U test, †Kruskal-Wallis test.

Among all, 58 (27.8%) (95% CI: 22.0–34.1) indicated that they had known the concept of PSM, and 12 (5.7%) (95% CI: 3.2–9.5) had been trained about PSM. All of the participants reported at least one barrier to support PSM in their clinical practice. The most frequent barriers stated were "Patients' inadequate knowledge and awareness" (84.2%), "Lack of time during consultation" (83.7%), "Patients' unhelpful attitudes and beliefs" (74.2%), "Unsupportive health policies" (67.9%), "Inconvenient electronic databases" (32.5%), "Inadequate clinician skills" (31.6%), and "Lack of motivation" (17.2%).

Reliability

The Turkish CS-PAM's test–retest reliability correlation coefficient was 0.79 ($p<0.001$). The correlation coefficients between the items and the total ranged from 0.45 to 0.71 ($p<0.001$, for all). The internal consistency reliability coefficient, measured by Cronbach's alpha, was 0.90. The items in the assessment instrument discriminated between 56 doctors with the highest total scores and 56 clinicians with the lowest total scores, according to the item analysis based on the lower-upper group averages ($p<0.001$).

The results of the Rasch analysis were 0.86, 2.45, and 0.99 for the person reliability, person separation index, and item reliability, respectively. The tool successfully divided the participants into three groups, and the findings showed that item and person reliability had been guaranteed.

Validity

The CS-PAM items and factor loadings for the sub-dimensions are summarized in Table 2. Bartlett's test was significant ($p<0.001$), and the Kaiser–Meyer–Olkin coefficient was 0.90. Two sub-dimensions were obtained using varimax rotation and principal component analysis. The sub-dimensions had eigenvalues of 2.87 and 4.62, and 57.59% of the variation was explained overall. For the first sub-dimension (items 1 through 8), the factor loadings were 0.88–0.48, and for the second sub-dimension (items 9 through 13), they were 0.79–0.60. For the first and second sub-dimensions, the Cronbach's alpha values were 0.88 and 0.80, respectively.

Table 2. The items of the CS-PAM and the Factor Loadings of the Sub-dimensions

As a clinician how important is it to you that your patients with chronic conditions	Factor Loading	Eigenvalue	Explained Variance (%)
Patient Responsibility			
1. Are able to take actions that will help prevent or minimize symptoms associated with their health condition(s).	0.82	4.62	35.53
2. Are able to figure out solutions when new situations or problems arise with their health condition(s).	0.61		
3. Bring a list of questions to their office visit.	0.48		
4. Are able to make and maintain lifestyle changes needed to manage their chronic condition.	0.88		
5. Can follow through on medical treatments you have told them they need to do at home.	0.84		
6. Know what each of their prescribed medications is for.	0.63		
7. Are able to determine when they need to go to a medical professional for care and when they can handle the problem on their own.	0.75		
8. Understand which of their behaviors make their chronic condition better and which ones make it worse.	0.66		
Shared Decision Making			
9. Understand the different medical treatment options available for their chronic condition(s).	0.72	2.87	22.06
10. Tell you the concerns they have about their health even when you do not ask.	0.68		
11. Want to be involved as a full partner with me in making decisions about their care.	0.60		
12. Look for trustworthy sources of information about their health and health choices, such as on the web, news stories, or books.	0.79		
13. Want to know what procedures or treatments they will receive and why before the treatments or procedures are performed.	0.68		
Total Explained Variance	57.59		

CS-PAM: Clinician Support for Patient Activation Measure.

The item difficulty structure and fit statistics derived from the Rasch analysis of the Turkish CS-PAM are summarized in Table 3. The values were calibrated using Rasch analysis on a theoretical 0–100 scale and provided as logit units. The item calibrations in our study ranged from 34 to 69, meaning that clinicians' agreement with that particular item was either easy (zero) or difficult (100). The item with the highest difficulty level was the 12th one, which the doctors considered to be the least important. The item with the lowest difficulty level was the fifth one, which the clinicians deemed to be the most crucial. With the exception of item 12, all of the in-fit and out-fit values fell into acceptable ranges (0.5–1.5). When an item's value falls between 1.5 and 2.0, it may not have an impact on the model fit when combined with other factors.[15]

DISCUSSION

Reliability

The 2-week test–retest correlation coefficient of the Turkish CS-PAM was 0.79, indicating a good consistency over time.[16] Furthermore, the item-total correlation coefficients were over 0.45 for each item (0.45–0.71), showing that the participants were distinguished well.[17,18] Thus, each item measured similar attitudes and contributed to the total score.

The original version of CS-PAM which had been developed with the participation of American and British clinicians working in primary care yielded a Cronbach's alpha coefficient of 0.86.[9] Cronbach's alpha of the Dutch version of CS-PAM was computed for the three different study samples and was 0.97 (Clinicians from the Dutch National Panel of People with Chronic Illness or Disability), 0.82 (Clinicians from the National Registration of General Practitioners), and 0.83 (Clinicians from the Diabetes Study).[19] Similarly, our study determined a Cronbach's alpha coefficient of 0.90 and indicated that the Turkish CS-PAM comprises consistent items measuring the components of the same concepts.

As in the original and Dutch versions of the CS-PAM, we used Rasch analysis to determine the scale's psychometric properties. The person reliability of the Turkish version was 0.86, indicating that the measurement tool classified the participants into three or four levels. The person reliability of the original and the Dutch versions were 0.80 and 0.82, respectively.[9,19] The person separation index was 2.45 which also showed that the measurement tool categorized the participants into at least three levels.[15] The item reliability is expected to be 0.9 or above. In our study, the item reliability coefficient was 0.99. This value shows that item reliability is ensured and item difficulty in the CS-PAM has a hierarchical structure.

Validity

For the validation of the original and Dutch versions, only Rasch analysis, a method that utilizes probabilities according to the item response theory, was used. We used classical test theory methods for reliability and validity in addition to Rasch analysis. The construct validity of the scale was evaluated by exploratory factor analysis through the

Table 3. Item Difficulty Structure and Fit Statistics by Rasch Analysis of the Turkish CS-PAM

Items	Item Difficulty Structure Values*	In-Fit	Out-Fit	Content of the Items
12	2.90 (69)	1.57	1.79	Patient should be an independent information seeker
10	1.69 (60)	1.19	1.17	Patient can take an active role during consultations
3	0.97 (55)	1.33	1.46	
9	0.95 (55)	0.97	0.94	
13	0.63 (53)	0.77	0.76	
11	0.13 (49)	0.87	0.84	Patient can make independent judgments and actions
2	-0.18 (47)	1.00	1.14	
6	-0.47 (45)	1.05	0.97	
8	-0.83 (42)	0.76	0.72	
7	-0.95 (41)	0.83	0.79	
1	-1.16 (40)	0.82	0.82	Patient should follow medical advice
4	-1.80 (35)	0.78	0.62	
5	-1.88 (34)	0.89	0.79	

CS-PAM: Clinician Support for Patient Activation Measure.

*Values were presented as Logit units (Logit units were calibrated on a theoretically 0-100 scale by Rasch analysis).

classical test theory. Barlett's test and the Kaiser–Meyer–Olkin coefficient showed that the data were appropriate for factor analysis. Exploratory factor analysis determined two sub-dimensions which explained 57.59% of the total variance. The eigenvalues were above one (4.62 and 2.87). While the factor loading of the third item was 0.48, medium size, the others were above 0.60. The two sub-dimensions had high internal consistency (0.88 and 0.80).

The original and Dutch versions of the CS-PAM are unidimensional.[9,19] However, considering the exploratory factor analysis results and the conceptual framework, we recommend that the Turkish version of the CS-PAM should be used with two dimensions. Upon conceptual evaluation, the first sub-dimension may be named "Patient Responsibility," while the second sub-dimension may be named "Shared Decision Making." "Patient Responsibility" is about taking action to reduce the symptoms, finding a solution when a new health situation arises, making lifestyle changes, maintaining the recommended medical treatments, and understanding the consequences of their behavior. "Shared Decision Making" refers to communicating health concerns to decision-makers, fully engaging as a participant in the process, and being informed about the procedures or treatments they will receive and the rationale behind them before the procedures or treatments are carried out.

The item difficulty structure of the Turkish CS-PAM (item calibrations were 34–69) was compatible with the original (34–68) and the Dutch versions (38–66).[9,19] The 12th item (look for trustworthy sources of information about their health and health choices, such as on the web, news stories, or books) was evaluated as less important compared to the previous studies. This might be because patients have negative experiences with accessing reliable sources of information, especially on the web, and interpreting this information. The 10th item (tell you the concerns they have about their health even when you do not ask) was also less important for the Turkish clinicians. Clinicians indicated that they had a lack of time during the consultations. Consequently, the 10th item might have been evaluated as less important since patients' concerns could lead to prolonged consultation time. The 3rd item (bring a list of questions to their office visit) was more important for the Turkish clinicians compared to the previous studies. In our study, clinicians mostly stated that patients often forgot some of the issues they wanted to ask; this might be why they thought this statement was more important.

Item fit statistics (in-fit and out-fit) provide information about the consistency of the responses and model compatibility. Item fit statistics between 0.5 and 1.5 show that the measurement is useful. Values between 1.5 and 2.0 indicate that the item may not affect the model fit if evaluated with other parameters.[15] In our study, all of the in-fit and out-fit values were within acceptable limits (0.5–1.5), except item 12 (in-fit=1.57 and out-fit=1.79). Item 12 also had the highest difficulty structure value. Item fit statistics are between 0.5 and 1.5 in the Dutch CS-PAM.[19] The out-fit value of the third item is 3.07, and the in-fit and out-fit values of all other items are between 0.5 and 1.5 in the original version of CS-PAM. Hibbard et al. stated that out-fit problems are less of a threat to measurement than in-fit ones.[9]

Previous studies using the CS-PAM have been applied not only to physicians but also to other healthcare professionals, such as nurses and others serving those with chronic conditions. Only physicians were included in our study since patients mostly communicate with physicians during examinations and consultations in Turkey. Therefore, an inference cannot be made for non-physician healthcare professionals based on this study. Besides, since we used a convenient sample, the results cannot be generalized to all clinical settings. Also, the data were collected based on self-reports. Therefore, we don't exactly know to what extent participants' statements about PSM reflect their actual behavior.

CONCLUSION

The CS-PAM is a measurement instrument that is both valid and reliable for assessing Turkish professionals' beliefs regarding the PSM of chronic health conditions. The structure of the Turkish CS-PAM must also be confirmed by confirmatory factor analysis in future studies. The validity of the Turkish CS-PAM can be evaluated with the participation of other health-care professionals. The CS-PAM can be used to plan appropriate interventions for supporting clinicians in PSM and activation and to evaluate the effectiveness of the interventions.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Funding: None.

Ethics Committee Approval: The Clinical Research Ethics Committee of the Marmara University School of Medicine granted ethical permission (approval date: December 07, 2018, approval no.: 09.2018.834). Insignia Health granted authorization for the scale's adaptation and validation in Turkish. Once participants' consent was obtained, they were added to the research.

Authorship Contributions: Conception – E.K., S.H., N.P.A.; Design – E.K., N.P.A.; Supervision – E.K., S.H., N.P.A.; Resource – E.K., N.P.A.; Data collection and/or processing – E.K., S.H., N.P.A.; Analysis and/or interpretation – E.K., N.P.A.; Literature review – E.K., N.P.A.; Writer – E.K., S.H., J.H., N.P.A.; Critical review – E.K., J.H., N.P.A.

REFERENCES

1. World health statistics 2018: Monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2018.
2. GBD 2017 DALYs and HALE Collaborators. Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. Lancet 2018;392(10159):1859–922.
3. Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): Conceptualizing and measuring activation in patients and consumers. Health Serv Res 2004;39(4p1):1005–26.
4. Lorig K. Self-management of chronic illness: A model for the future. Generations 1993;17(3):11–4.
5. Hibbard JH. Patient-centered Care. In: Mas N, Wisbaum W, editors. The Triple Aim for the Future of Health Care. Madrid: FUNCAS; 2015. p.121–137.
6. Hibbard JH, Mahoney ER, Stock R, Tusler M. Do increases in patient activation result in improved self-management behaviors? Health Serv Res 2007;42(4):1443–63.
7. Hibbard JH, Gilburt H. Supporting people to manage their health. An introduction to patient activation. London: The King's Fund; 2014.
8. Yaşlıoğlu MM. Factor analysis and validity in social sciences: Application of exploratory and confirmatory factor analyses. Istanbul Uni J School Bus [Article in Turkish] 2017; 46:74–85.
9. Hibbard JH, Collins PA, Mahoney E, Baker LH. The development and testing of a measure assessing clinician beliefs about patient self-management. Health Expect 2010;12(1):65–72.
10. Hibbard JH, Mahoney ER, Stockard J, Tusler M. Development and testing of a short form of the patient activation measure. Health Serv Res 2005;40(6p1):1918–30.
11. Smith R. Polytomous mean-square fit statistics. Rasch Measurement Transactions. 1996;10(3):516–7.
12. Alvarez C, Greene J, Hibbard JH. The role of primary care providers in patient activation and engagement in self-management: A cross-sectional analysis. BMC Health Serv Res 2016; 16(1):85–92.
13. World Health Organization. Process of translation and adaptation of instruments. Available at: https://www.who.int/substance_abuse/research_tools/translation/en/. Accessed Nov 14, 2019.
14. Boone WJ. Rasch analysis for instrument development: Why, when, and how? CBE Life Sci Educ 2016;15(4):rm4.
15. Linacre JM. Winsteps Rasch measurement computer program user's guide. Oregon: Winsteps; 2012.
16. Koo TK, Mae YL. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. J Chiropr Med 2016;15(2):155–63.
17. Tavşancıl E. Tutumların ölçülmesi ve SPSS ile veri analizi. 4. Baskı. Ankara: Nobel Yayın Dağıtım; 2006.
18. Şencan H. Sosyal ve davranışsal ölçümlerde güvenirlik ve geçerlik. 1. Baskı. Ankara: Seçkin Yayıncılık; 2005.
19. Rademakers J, Jansen D, Hoek van der L, Heijmans M. Clinicians' beliefs and attitudes toward patient self-management in the Netherlands; translation and testing of the American Clinician Support for Patient Activation Measure (CS-PAM). BMC Health Serv Res 2015;15(1):138.