



Original Article

Cross-cultural adaptation of the Healthcare Provider-Patient Activation Scale to Japanese

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Abstract. [Purpose] This study aimed to investigate a cross-cultural adaptation of the 40-item Healthcare Provider-Patient Activation Scale (HP-PAS). [Participants and Methods] We followed a guideline for cross-cultural adaptation that recommended using two forward and backward translations. In pilot testing, participants were Japanese physical therapists who provided comments about expression readability. Two authors independently categorized each comment as either “unable to understand” or “suggestion to enhance clarity”, after which Cohen κ and % agreement were used to assess agreement. We then assessed the flooring and ceiling effects, internal consistency, and Spearman ρ between the factor scores of the patient-activation-approach and non-patient-activation-approach. [Results] A total of 58 Japanese physical therapists participated in the pilot test. The agreement on comments was $\kappa=0.44$ and 86.5%. We identified the flooring and ceiling effects for most items. In addition, the internal consistency was acceptable for each factor; however, the Spearman ρ between the patient-activation-approach and non-patient-activation-approach factor scores was positive when it should have been negative. [Conclusion] We developed a Japanese version of the HP-PAS which will serve as a foundation for future studies to establish a measurement method for the magnitude of patient activation in the physical therapist population.

Key words: Patient activation, Patient centered approach, Self-management

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INTRODUCTION

Patient-activation (PA), which allows the patient to actively take control of the consultation and/or in the management of their condition¹⁾, is an important factor in the patient-centered approach (PCA)^{2, 3)}. PA increases patient satisfaction from medical services^{1, 4)}. Importance of PCA has been recognized in physical therapy; however, the therapist-centered biomedical approach has been actually provided⁵⁾. Therefore, further studies are needed to facilitate PCA in physical therapy.

In 2019, the Healthcare Providers Patient-Activation Scale (HP-PAS) has been developed through factor analysis and sensitivity to change analysis⁶⁾. The HP-PAS is a self-reported questionnaire for healthcare providers using a 5-point Likert scale (1, not important; and 5, very important) and evaluates their attitude toward the importance of PA. Shand et al.⁶⁾ reported that the factor analysis demonstrated two-factor structures with 20 items each of PA-approach and non-PA-approach. In the sensitivity to change analysis with 105 Australian healthcare providers comprising mostly of nurses (75 nurses and 10 physical therapists), the total scores in both factors decreased after an online training program to support chronic disease self-management. Therefore, Shand et al.⁶⁾ suggested the use of the 20-item non-PA-approach for the assessment of PA.

The HP-PAS is a promising tool to evaluate attitudes of physical therapists toward PA and to facilitate PCA. However, no Japanese version of the HP-PAS has been reported yet. Therefore, this study aimed to investigate the cross-cultural adaptation of the 40-item HP-PAS.

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PARTICIPANTS AND METHODS

This study was approved by the institutional research committee (Saitama Prefectural University No. 20011), and written informed consent was obtained from each participant. An approval of the HP-PAS translation into Japanese was obtained from the developer a priori. We followed a guideline of cross-cultural adaptation⁷⁾, which includes forward translation, synthesize meeting with forward translations, backward translation, expert committee review, and pilot testing.

In the forward translation process, two English-Japanese bilingual translators independently translated 40 items including the instruction into Japanese. One translator was a physical therapist aware of the aim of the HP-PAS, whereas the other translator was an English scholar unaware of the aim of the HP-PAS. In the synthesize meeting with forward translations, a combined Japanese draft was developed with discussions among two forward translators and two authors. The combined Japanese draft was then translated into English independently by two physical therapists who were blinded to the aim of the HP-PAS. An expert committee review was held with 6 members included in the forward and backward translations. Modifications to ensure semantic, idiomatic, experiential, and conceptual equivalences were recorded⁷⁾, and a pre-final draft to be tested in the pilot testing was developed with one consent among 6 expert committee members.

In the pilot testing, all participants were Japanese physical therapists. The guideline⁷⁾ recommends 30–40 samples; however, data collection was continued until 50–60 samples were obtained to further understand data distribution. Data collection was carried out via an online survey on the home page of an author in July 2020. Participants were asked to provide free comments for each of 40 items including the instruction message in terms of expression readability. Each comment was independently categorized by two authors into “unable to understand” and “suggestion to enhance clarity”. Agreement between authors was assessed with Cohen κ and % agreement, where κ -value of <0.4 was interpreted as poor agreement, $0.41–0.60$ as moderate agreement, $0.61–0.80$ as good agreement, and $0.81–1.0$ as very good agreement⁸⁾. Disagreement between authors was resolved with discussion. Although criteria for the acceptance of missing data are not yet established, 5% can be used⁹⁾. Thus, the pilot test was repeated by modifying the expression with $>5\%$ of “unable to understand” until all items satisfied the criteria.

In the final version, participants completed the 40-item HP-PAS and reported the time to complete. The research utilized the 20-item PA-approach and 20-item non-PA-approach using the Cronbach α to assess internal consistency. Data distributions were assessed in each item, where flooring or ceiling effects were considered when $>15\%$ of the responses were the minimum or maximum response^{10–12)}. Furthermore, Spearman ρ was calculated between sum scores in PA-approach and non-PA-approach factors. Statistical analysis was conducted using the Statistical Package for the Social Sciences (version 21.0, IBM Corporation, New York, USA) using a statistical significance of 5%.

RESULTS

Appendix Table 1 summarizes reasons and/or comments for developing a pre-final draft to be tested in the pilot testing (Appendix 1), which included 58 physical therapists (45 males and 13 females) with a mean \pm standard deviation (SD) of age and years after physical therapy license as 1.0 ± 10.6 years and 9.2 ± 9.0 years, respectively. The pilot testing was conducted once with the moderate agreement in the category of comments (0.44 [$p < 0.001$], 86.5%). Table 1 presents proportions of categories in the comments for each item. The mean \pm SD of time to complete 40 items was 390.3 ± 221.9 s. Cronbach α for the PA-approach and non-PA-approach was 0.94 and 0.89 , respectively. Four items demonstrated the flooring effect and 35 items for the ceiling effect. The Spearman ρ between the PA-approach and non-PA-approach factors was 0.64 ($p < 0.001$).

DISCUSSION

This study investigated the cross-cultural adaptation of the 40-item HP-PAS into Japanese, which will be a foundation for future studies to develop an established measurement method for the magnitude of the PA in the population of physical therapists.

This study indicates that interpretability would be acceptable as the proportion of the “unable to understand” for each item was $<5\%$. Furthermore, the ideal length of a web survey was median of 10 min¹³⁾; thus, the HP-PAS with the maximum of 40 items would be feasible for a web survey and can be conducted with other measures.

The Cronbach α demonstrated an acceptable internal consistency¹⁴⁾ in both PA-approach and non-PA-approach factors. However, most items demonstrated the flooring or ceiling effect, indicating the need to modify the rating scale when the HP-PAS is used in the physical therapist population. The potential reason for flooring or ceiling effect is the lack of a neutral response option, where the 5-point response option may be acceptable¹⁵⁾. The Rasch analysis enables to inspect appropriateness of the rating scale and scale options can be combined to enhance the psychometric property^{10, 11, 16, 17)}. Shand et al.⁶⁾ proposed an idea on the use of the “How often do you...” rather than “How important is it to...,” and these psychometric properties are considered similar. This change of the rating scale can solve the potential concern of the lack of a neutral response option. Therefore, a future study would be required to investigate whether the flooring and ceiling effects can be improved using the % scale or the 11-point % Likert scale and asking the frequency for each item.

Table 1. Proportions of the categories of comments and proportions of response distributions

Item No.	Proportions of the categories of comments			Proportions of responses (%)			
	Unable to understand	Suggestion to enhance clarity	Not important	Slightly important	Moderately important	Very important	Extremely important
Instructions	1.7	6.9	–	–	–	–	–
1 ⁿ	0	6.9	0	3.5	20.7	48.3	27.6
2 ^P	0	3.4	0	1.7	8.6	31.0	58.6
3 ⁿ	0	5.3	1.7	10.3	20.7	32.8	34.5
4 ^P	1.7	5.3	0	1.7	17.2	41.4	39.7
5 ^P	0	5.3	0	3.5	20.7	31.0	44.8
6 ⁿ	3.4	1.7	0	5.2	20.7	36.2	37.9
7 ⁿ	1.7	3.4	0	3.5	19.0	37.9	39.7
8 ^P	0	1.7	1.7	5.2	22.4	29.3	41.4
9 ^P	3.4	1.7	3.5	6.9	24.1	24.1	41.4
10 ⁿ	0	1.7	0	6.9	19.0	43.1	31.0
11 ^P	1.7	8.6	0	12.1	22.4	31.0	34.5
12 ⁿ	0	3.4	0	1.7	15.5	32.8	50.0
13 ^P	3.4	10.3	1.7	19.0	25.9	29.3	24.1
14 ^P	0	1.7	0	3.5	17.2	39.7	39.7
15 ⁿ	0	3.4	0	5.2	10.3	39.7	44.8
16 ⁿ	1.7	3.4	19.0	29.3	39.7	5.2	6.9
17 ^P	0	3.4	1.7	13.8	41.4	20.7	22.4
18 ⁿ	3.4	1.7	0	5.2	27.6	41.4	25.9
19 ^P	0	3.4	3.5	5.2	27.6	39.7	24.1
20 ^P	0	5.3	1.7	3.5	34.5	34.5	25.9
21 ⁿ	0	3.4	27.6	22.4	31.0	13.8	5.2
22 ⁿ	0	3.4	12.1	15.5	32.8	24.1	15.5
23 ^P	3.4	5.3	0	8.6	15.5	46.6	29.3
24 ⁿ	1.7	0	0	12.1	24.1	32.8	31.0
25 ^P	0	1.7	8.6	10.3	25.9	25.9	29.3
26 ^P	0	1.7	0	1.7	24.1	43.1	31.0
27 ⁿ	0	6.9	0	3.5	32.8	34.5	29.3
28 ⁿ	0	5.3	1.7	10.3	22.4	37.9	27.6
29 ^P	1.7	1.7	6.9	13.8	29.3	25.9	24.1
30 ^P	0	3.4	5.2	5.2	32.8	25.9	31.0
31 ⁿ	0	5.3	12.1	29.3	34.5	13.8	10.3
32 ⁿ	0	3.4	15.5	27.6	36.2	15.5	5.2
33 ^P	1.7	1.7	1.7	10.3	29.3	36.2	22.4
34 ^P	1.7	0	0	3.5	20.7	46.6	29.3
35 ^P	0	6.9	3.5	3.5	20.7	36.2	36.2
36 ⁿ	0	1.7	5.2	17.2	34.5	22.4	20.7
37 ⁿ	1.7	1.7	10.3	12.1	29.3	36.2	12.1
38 ^P	1.7	0	0	5.2	31.0	31.0	32.8
39 ⁿ	0	3.4	27.6	32.8	22.4	13.8	3.5
40 ⁿ	0	1.7	3.5	19.0	24.1	27.6	25.9

–: Not applicable; P: Patient-Activation approach factor; ⁿ: non-Patient-Activation approach factor.

The Spearman ρ between the PA-approach and non-PA-approach factors was statistically significant and positive, which should be theoretically negative. This indicates a problem in the content validity of the PA-approach and non-PA-approach factors, which is the most important validity to be inspected first¹⁸⁾. Item generation of the PA-approach factor was undertaken by the author panels in the previous study⁶⁾ based on literature^{19, 20)} and the non-PA-approach items were generated to have the opposite meaning of the PA-approach items. No comprehensive content validity analysis has been undertaken; thus,

further studies of the content analysis are warranted.

Limitation of this study includes findings of the internal consistency and the correlation between the PA-approach and non-PA-approach factors as preliminary, and robust findings are achieved with a larger cohort.

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Conflict of interest

There is no conflict of interest.

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Appendix Table 1. Summary of reasons and/or comments for developing a pre-final draft to be tested in the pilot testing

Phase	Original expression	Final expression	Reasons and/or comments
1	Moderately important (Rating scale) (適度に重要)	やや重要	A literal translation was not natural.
1	Strategies (Items 2, 17, 33, 36 & 38) (戦略・方略)	方法	A literal translation was not natural.
1	Support the patient to make decisions about what treatment options are best for them (Item 5)	Support the patient in making decisions about what treatment options are best for them. (どのような治療選択が最適か患者が意思決定するのを支援する)	The original expression was unclear and a developer clarified the meaning.
1	Explore with the patient their <u>level</u> of knowledge for managing their condition (Item 13) (段階)	レベル	Responders are physical therapists and this KATAKANA expression was considered readable.
1	manage, managing (Items 7 & 21) (管理する・マネージメントする)	コントロールする	In Japanese, ‘control’ was considered more suitable than ‘management’ for emotions.
1	Oversee (Items 24 & 27) (監督する)	把握し、見守る	Discussions were whether ‘oversee’ includes the meaning of education. Finally, we decided that ‘oversee’ here did not include education.
1	Explore the patient’s <u>attitudes</u> towards adhering to their treatment regime (Item 25) (態度)	Explore the patient’s attitude and behavior regarding compliance with treatment plan. (治療方針を遵守することに対する患者の態度・姿勢を探る)	A literal translation was not natural. We included ‘(治療方針の遵守に対する)姿勢’.
1	Help the patient to <u>monitor</u> symptoms of their disease (Item 35) (観察・管理する)	モニタリングする	Responders are physical therapists and the KATAKANA expressions were considered readable.
1	<u>Make sure</u> the patient adheres to their treatment regime (Item 39) (確認する)	Make the patient to be definitely compliant with treatment plan. (患者が必ず治療方針を遵守するようにさせる)	This item belongs to the non-Patient-Activation approach factor and the tone of voice was slightly increased.
2	Lifestyle (Items 1, 3, 4, 6, 7, 9, 14, 20, 23, 24, 26, 28, 31 & 34) (生活習慣)	ライフスタイル	‘生活習慣’ may remind of more than lifestyle. The KATAKANA expression was considered the most suitable here without changing the meaning.
2	Direct (Items 21, 22, 31, 32 & 37) (指導する)	指示する	At the synthesize meeting with forward translations, ‘direct’ was translated into ‘指導する’ but the backward translations lost such a strong tone of voice. Thus, ‘指示する’ was selected to be the most suitable expression here.
2	Behavior (Item 32 & 38) (行動)	行動・ふるまい	‘行動’ was translated into ‘activities’ and ‘action’ in the backward translation. Thus, ‘行動・ふるまい’ was selected to be the most suitable expression here.

1: synthesize meeting with forward translations; 2: expert committee review.

Appendix 1. Healthcare Providers Patient-Activation Scale (Japanese version).

あなたの現在の臨床実践に関する以下の質問について、1～40 の各項目についてどの程度重要だと思いますか？	重要ではない	わずかに重要	やや重要	とても重要	極めて重要
1. 患者にどのようなライフスタイルの変更が必要かを伝える					
2. 症状をマネジメントする方法を患者と一緒に探る					
3. なぜライフスタイルの変更が重要かを患者に強調して伝える					
4. ライフスタイルの変更に伴い直面するであろう障害を患者と一緒に確認する					
5. どのような治療選択が最適か患者が意思決定するのを支援する					
6. ライフスタイルの変更に際する患者のゴールを設定する					
7. ライフスタイルを変更するために何が役に立つかについて患者と知識を共有する					
8. 病気による仕事や私生活へのあらゆる影響に対して患者が対処できるように手助けをする					
9. 患者が自ら変えようとしているライフスタイルは何か見出すのを手伝う					
10. 患者の状態を長期的にマネジメントするためのケアプランを患者に提供する					
11. 自身の症状を管理するために、患者がどのようなスキルを有しているかを患者と一緒に確認する					
12. 症状を管理するためにすべきことを患者にアドバイスする					
13. 自身の状態を管理するための知識レベルを患者と一緒に探る					
14. ライフスタイルの変更に際するゴールを患者と一緒に設定する					
15. 自身の状態を管理する上で知っておくべきことを患者に伝える					
16. 病状の管理についてのあなたのアドバイスに従うように患者を説得する					
17. 患者の感情をコントロールする方法を患者と一緒に探る					
18. 自身で症状を管理する上で遭遇するであろう問題について患者にアドバイスする					
19. 患者の状態を長期的に管理するための治療計画を患者と一緒に作成する					
20. 患者が自身のライフスタイル変更の進捗度を把握できるように手助けする					
21. 患者が自分自身の感情をどのようにコントロールすべきか指示する					
22. 患者が自身の症状をどのように管理すべきかについて指示する					
23. どのようにライフスタイルを変更させるかという情報は患者の変化の段階に合わせて変える					
24. 患者のライフスタイル変更の進捗度を把握・見守る					
25. 治療方針を遵守することに対する患者の態度・姿勢を探る					
26. なぜライフスタイルの変更が重要なのかという患者自身の理由を患者と一緒に確認する					
27. 患者の症状管理を把握し、見守る					
28. ライフスタイルの変更に伴って直面するであろう障害について患者に伝える					
29. 自身の状態管理に関する情報を探し求めるように患者を促す					
30. 自身の状態を管理することへの自信を患者と一緒に確認する					
31. 患者にどのようにライフスタイルを変更するか指示する					
32. 患者がどのように行動・ふるまいを変えるべきかを指示する					
33. 過去に患者自身の慢性疾患の管理に役立った方法を患者と一緒に探る					
34. ライフスタイルを変更するために何が効果的であるかを患者自身がわかるように手助けをする					
35. 患者が自分の病気の症状をモニタリングする手助けをする					
36. 過去に別の患者の慢性疾患の管理に役に立ったことがある方法を患者と共有する					
37. 病気が仕事や私生活に与える影響に対してどのように対処するかについて患者に指示する					
38. 行動・ふるまいを変えるための方法を患者と一緒に探る					
39. 患者が必ず治療方針を遵守するようにさせる					
40. 患者にとってどのような治療選択が最適かを患者に知らせる					