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Psychometric evaluation of the Indonesian version of the Person-centered Care Assessment Tool

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Abstract

Background: The number of Indonesian care staff working in hospitals and long-term care facilities caring for persons with dementia in Japan is increasing; however, there is no instrument available in the Indonesian language to assess their dementia care practice.

Objectives: This study aimed to translate the Person-centered Care Assessment Tool (P-CAT) and evaluate its psychometric properties in a sample of Indonesian care staff working in dementia care and long-term care facilities in Japan.

Methods: This is a descriptive, methodological, and cross-sectional study. The P-CAT was translated into the Indonesian language. The draft was administered to Indonesian care staff ($n=218$) working at long-term care facilities in Japan. Data were analysed using exploratory factor analysis (EFA), confirmatory factor analysis (CFA), known-group validity, internal consistency, and test–retest reliability.

Results: EFA showed three-factor and CFA of the three-factor indicated that the model had an acceptable fit (chi-squared statistics/degree of freedom$=$1.78, comparative fit index$=$0.94, root mean square error of approximation$=$0.06) with a slightly different structure compared to the original P-CAT. Regarding known-group validity, the P-CAT total score was significantly higher for those who had training in dementia, who knew about person-centred care, and who showed satisfaction in the job. Internal consistency (Cronbach's α) of the total scale was 0.68 which is considered acceptable, and the test–retest reliability intraclass correlation coefficient was 0.61 which is considered moderate.

Conclusion: The Indonesian P-CAT indicated sound validity and reliability to measure person-centred care among Indonesian care staff working in dementia care and long-term care facilities in Japan.

Implication for Practice: The development of Indonesian P-CAT allows the evaluation of dementia care, promotes and further improves person-centred care for persons with dementia provided by Indonesian care staff working in long-term care facilities in Japan.

KEYWORDS
dementia, Indonesia, person-centred care, reliability and validity, translation

1 | INTRODUCTION

Japan is the fastest-aging country (Kudo et al., 2015) and there is a growing need for skilled healthcare professionals to care for older people in Japan. According to the Ministry of Health, Labour and Welfare of Japan (2023), over the last 15 years Japan recruited 3638 Indonesian nurses and care workers (henceforth referred to as Indonesian care staff) through the Indonesia–Japan Economic Partnership Agreement. Approximately 80% of Indonesian care staff working in Japan care for older people in Long-term care (LTC) facilities (Japan Ministry of Health, 2023). It is estimated that by 2025 around seven million people will live with dementia in Japan (Japan Ministry of Health, 2019). This means that Indonesian nurses and care workers working in Japan are likely to encounter dementia care in their practice.

Recently, Indonesia established the National Strategy for the Management of Alzheimer's and Other Dementia Diseases (Ministry of Health Republic of Indonesia, 2015) and clinical practice guidelines for diagnosis and management of dementia (Indonesian Association of Neurologists, 2015). These strategies and guidelines introduced dementia care into the education of healthcare professionals in Indonesia. This means that dementia care is a relatively new topic in Indonesia, thus Indonesian nurses may have limited knowledge, skills or experience in caring for persons with dementia. When working in Japan caring for persons with dementia, Indonesian care staff face challenges in relation to care and culture. Despite acknowledgement of these issues, there is scant research assessing the dementia care practices of Indonesian care staff working in Japan to better understand factors before support and improvement.

What does this research add to existing knowledge in gerontology?

- This study provides the results of the translation, validity and reliability testing of the Person-centered Care Assessment Tool (P-CAT) among Indonesian care workers to measure the degree of person-centred care in dementia.
- The Indonesian P-CAT will contribute to the introduction of person-centred care to Indonesian nurses and care workers working in dementia care settings in Japan.

What are the implications of this new knowledge for nursing care with older people?

- Development of the Indonesian P-CAT enables assessment of person-centred care provided by Indonesian care staff working in dementia care, which provides information on aspects of dementia care that need improvement.
- The development of the Indonesian P-CAT is essential to promote person-centred care practices in dementia care among Indonesian care staff working in Japan.

How could the findings be used to influence policy or practice or research or education?

- Understanding the implementation of person-centred dementia care enables researchers and policymakers to improve dementia care practice and policy in order to support Indonesian care staff working in Japan.
- The Indonesian P-CAT will facilitate cross-cultural comparison of person-centred dementia care internationally since P-CAT has been translated into several languages and implemented in a variety of care settings.

1.1 | Background

Person-centred care (PCC) is one of the core concepts underpinning dementia care practices and recommendations (Fazio et al., 2018). PCC was first introduced by Tom Kitwood, who shifted the perspective from viewing persons living with dementia from disease-focussed to person-focussed, which emphasized maintaining their social relationships and personhood (Kitwood, 2019; Kitwood & Bredin, 1992). PCC has four essential elements that can be articulated using the VIPS framework: *V*aluing persons with dementia and their caregiver; treating them as *I*ndividuals; considering the world from the *P*erspective of the individual; and creating a supportive *S*ocial environment for their psychological needs (Brooker, 2004).

A person-centred approach to care highlights the fulfilment of psychological needs including comfort, attachment, inclusion, occupation and identity that combine into the primary need for love (Kitwood, 2019). PCC has been found to reduce agitation, depression and neuropsychiatric symptoms, and improve quality of life (Kim & Park, 2017). Moreover, PCC interventions have shown positive outcomes in relation to care staffs' job satisfaction, burnout, job strain, stress of conscience, intention to leave, psychosocial work environment (van Diepen et al., 2020). PCC has also been found to improve competence to meet individual needs (Brownie & Nancarrow, 2013), through, for example, improved communication skills, an increase in behaviours that improve resident well-being and a decrease in behaviours that diminish personhood, and the ability to provide stimulation for individuals with dementia (Blake et al., 2020).

Assessment of the degree of person-centredness in dementia care provided by Indonesian care staff is necessary to maintain and improve the well-being of persons with dementia. Yet currently there is no instrument that can be used to evaluate PCC practices in the Indonesian language. Rather than developing new person-centred measurement tools, Louw et al. (2020) recommends adapting and refining existing measurements. The Person-centered Care Assessment Tool (P-CAT) (Edvardsson et al., 2010) is an established measurement scale for PCC that has been used in a variety of clinical and cultural contexts. The P-CAT consists of 13 items, including three subscales, and was designed for research purposes to assess the degree of PCC practice by care staff caring for persons living with dementia in aged-care settings (Edvardsson et al., 2010). The P-CAT is brief and user-friendly, and it has been translated into several languages in addition to English (Barbosa et al., 2023; Brugnolli et al., 2020; Le et al., 2020; Martínez et al., 2016; Rokstad et al., 2012; Sjögren et al., 2012; Tak et al., 2015; Yumoto et al., 2022). This indicates that the P-CAT could be an ideal candidate for translation into the Indonesian language and use among Indonesian care workers in dementia care and LTC settings.

2 | THE STUDY

2.1 | Aim

This study aimed to conduct a translation of the P-CAT to Indonesian and to evaluate its psychometric properties in a sample of Indonesian care staff working in LTC facilities in Japan.

2.2 | Methodology

2.2.1 | Design

This study used a descriptive, methodological and cross-sectional design.

2.2.2 | Translation

The translation of the P-CAT into Indonesian was based on the guidelines described by Beaton et al. (2000) through forward translation, back translation, expert committee review and pretesting. The forward translation was conducted by two Indonesian graduate students studying dementia care and psychiatric nursing. The back translation was conducted by two Indonesian translators with no medical or clinical background.

A total of six people participated in the expert committee, including master's and Ph.D. students, a professor in gerontology and home healthcare nursing, an expert in palliative care nursing and two translators who discussed issues and discrepancies in the translation process using online meetings. From the expert committee review, we developed a draft for pretesting.

A pretest was conducted with 13 people, namely: Indonesian Ph.D. students, Indonesian nurses working in Indonesia and Indonesian nurses working in LTC facilities in Japan. They provided opinions and suggestions regarding the Indonesian P-CAT draft.

Some terminology was modified to match the Indonesian cultural context. First, the Indonesian P-CAT uses the term 'person-centered care' in English as we were concerned that the term would lose its meaning if it was translated into Indonesian. Second, the word care or *perawatan* in the Indonesian language also has the meaning of treatment or *pengobatan*, therefore, to prevent misinterpretation, we included the English word 'care' following the word *perawatan*. Thirdly, we also modified the term resident or *penghuni* with the term 'client' or *klien* to be more applicable in LTC settings, and the term 'environment' or *lingkungan* with the term 'atmosphere' or *suasana* which is closer to English semantically.

2.2.3 | Psychometric evaluation

Participants and procedure

The study participants consisted of individuals who were (1) qualified to work as a nurse in Indonesia (graduated from nursing school with 3 years or more education), (2) worked either as nurses or care workers in LTC facilities in Japan, and (3) were able to communicate in Indonesian and Japanese. The study was conducted between September and November 2021.

The study used purposive and snowball sampling. First, using purposive sampling we contacted 296 facilities that employed foreign nurses and care workers using publicly accessible data from the website of the Ministry of Health, Labour and Welfare of Japan asking whether there were Indonesian nurses and care workers at their facilities. The co-ordinator of foreign staff from 21 out of 296 facilities replied and reported having Indonesian care staff working at their facilities. These co-ordinators were willing to co-operate in the study by distributing the survey documents to Indonesian nurses. One hundred and twenty Indonesian workers were listed from 21 facilities, of whom 52 answered the questionnaire (response rate 43%).

Next, we used snowball sampling as the number of participants collected through purposive sampling was considered small. We recruited participants using groups on social media platforms and applications initiated by the Indonesian nurses' organization or community in Japan whose members were Indonesian care staff working in Japan. Participants could share the survey in their professional and social network to support recruitment of Indonesian care staff working in Japan. In the survey announcement, we included information about the study and how to participate. This resulted in the recruitment of a further 166 participants, all of whom were Indonesian care staff working in LTC facilities in Japan.

The surveys were conducted online through Google Forms. To avoid missing values, we used features in Google Forms that allowed us to only receive responses from participants who completed all question items in the survey. As a result, we received data from a total of 218 Indonesian care staff. The study participants were asked to take part in both test and retest surveys. A total of 75 participants completed the retest, which was conducted 1–2 weeks after the initial survey.

Measurement

The P-CAT consists of 13 items rated on a five-point scale ranging from 1 ('disagree completely') to 5 ('agree completely'). Indonesian P-CAT has the same scoring system as the original version, with sum scores ranging from 13 to 65, where a higher score indicates a higher degree of PCC practice. Five items are negatively worded (Items 7, 8, 9, 10 and 12). We reversed the responses for those items before the analysis. The original version consists of three subscales: Subscale 1, the *extent of personalizing care* consists of Items 1, 2, 3, 4, 5, 6 and 11. Subscale 2, the *amount of organizational support* consists of Items 7, 8, 9 and 10. Subscale 3, the *degree of environmental accessibility* consists of Items 12 and 13 (use Table 2 as reference). The original P-CAT showed satisfactory psychometric properties with good internal consistency and test–retest reliability (Edvardsson et al., 2010).

We collected sociodemographic data, such as age, gender, years of working experience, Japanese national qualification, etc. We also added yes/no questions: 'Do you have training about dementia?' and 'Do you know about person-centred care?'. To determine the participant's level of job satisfaction, we used a single question 'Overall how satisfied are you with working in your current workplace?', using a five-point Likert scale to respond to the question ranging from 'very satisfied' to 'not satisfied at all'.

2.2.4 | Data analysis

As two sampling methods were used, the samples were investigated for equivalence. Except for years of working experience in Japan, there was no statistically significant difference in participant characteristics, such as dementia care experience in Indonesia, dementia care training and the total score of the Indonesian P-CAT as shown in Table 1. Hence, data from both samples were merged and analysed together. The normality of the data was justified using skewness (−2 to +2) and kurtosis (>10) (George & Mallery, 2010; Kline, 1998). Descriptive analysis was conducted for each questionnaire item. The dimensionality of the P-CAT was evaluated using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).

The EFA test was conducted using the maximum likelihood method with oblique rotation to allow the factors to correlate (Costello & Osborne, 2005). An EFA with oblique rotation (Promax) was used to help the interpretation of factor matrixes. The Kaiser–Meyer–Olkin test >0.60 was considered sufficient to analyse the EFA output and Bartlett's test of sphericity ($p<.05$) was used to confirm the appropriateness to conduct factor analysis (Burton & Mazerolle, 2011). The eigenvalues (Kaiser's eigenvalue >1) and scree plot were used to determine the number of factors to retain (Kaiser, 1960; Yong & Pearce, 2013). After the rotation, each item loading was compared and the criteria for the best fit, such as item loadings >0.3 and factors must consist of not fewer than three items (Costello & Osborne, 2005).

First, CFA was conducted based on EFA factor models. The factor structure of different P-CAT translations and versions varies from one-factor (Martínez et al., 2016), two-factor (Brugnolli et al., 2020; Le et al., 2020; Rokstad et al., 2012; Sjögren et al., 2012; Tak et al., 2015) and three-factor models (Barbosa et al., 2023; Yumoto et al., 2022). Therefore, we conducted EFA beginning with a one-factor model and increased the number of factors throughout the analysis (two-factor, three-factor, etc.). Next, we also tested whether the available model from the original and the other translated versions of the P-CAT fit with data from Indonesian nurses. We did not conduct a CFA based on the model of the Italian (Brugnolli et al., 2020) version as two items were deleted, or the Japanese (Yumoto et al., 2022) and Portuguese versions (Barbosa et al., 2023) as they reported the same construct as the original version. Model fits were assessed by the chi-square statistics/degrees of freedom ratio (CMIN/DF) which should be <2 for good fit and <3 for acceptable fit, comparative fit index (CFI) should be >0.97 for good fit and >0.95 for acceptable fit, and root mean square error of approximation (RMSEA) <0.05 for a good fit, and <0.08 for acceptable fit (Bentler, 1990; Hooper et al., 2008; Schermelleh-Engel et al., 2003).

To examine known-group validity, groups were divided based on whether they had received training in dementia care, whether they knew about PCC, and job satisfaction (participants who answered [very satisfied–satisfied] were considered satisfied with the job and [neutral–not satisfied at all] were considered not satisfied with the job). Independent samples *t*-tests ($p<.05$) were performed with the assumption that the mean P-CAT score of those groups would differ, where participants who have received training in dementia care, those who knew about PCC and those who were satisfied with the job would have statistically significant higher scores compared to those who did not.

Internal consistency was evaluated using Cronbach's α using the generally accepted rule .6–0.7 as acceptable, and ≥.8 as very good level of reliability (Ursachi et al., 2015) and corrected item-total correlation >.3 (Nunnally & Bernstein, 1994). Paired *t*-tests were also conducted to compare test–retest means ($p<.05$). Test–retest reliability was examined through a two-way mixed-effect, absolute agreement, single measurement of the intraclass correlation coefficient (ICC) (Koo & Li, 2016). ICCs were interpreted as follows: <0.5 as poor, 0.5–0.75 as moderate, 0.75–0.90 as good and 0.90–1 as excellent (Koo & Li, 2016). Statistical analyses were performed using SPSS Statistics Version 28.0 for all data analysis,

TABLE 1 Demographic characteristics of study participants ($n = 218$).

Variable	Purposive sampling ($n = 52$)		Snowball sampling ($n = 166$)		
	n (%)	Mean (SD)	*n* (%)	Mean (SD)	*p* Value[a]
Age (in years)		28.38 (3.95)		29.01 (2.55)	.181
Gender					
Male	15 (28.8)		61 (36.7)		.299
Female	37 (71.2)		105 (63.3)		
Dementia care experience in Indonesia					
Yes	11 (21.2)		42 (25.3)		.545
No	41 (78.8)		124 (74.7)		
Years of working experience in Indonesia[b]					
<2	37 (71.2)		102 (61.4)		.206
≥2	15 (28.8)		64 (38.6)		
Japanese language proficiency test					
N1 (advance)	0 (0)		1 (0.6)		.608
N2	20 (38.5)		61 (36.7)		
N3	25 (48.1)		75 (45.2)		
N4	2 (3.8)		8 (4.8)		
N5 (basic)	0 (0)		1 (0.6)		
No certificate qualification	5 (9.6)		20 (12.1)		
Years of working experience in Japan[c]					
<4	36 (69.2)		75 (45.2)		.002
≥4	16 (30.8)		91 (54.8)		
Japanese qualification					
Certified nurse	5 (9.6)		22 (13.3)		.052
Certified care worker	10 (19.2)		57 (34.3)		
No qualifications	37 (71.2)		87 (52.4)		
Training in dementia care					
Yes	25 (48.1)		93 (56.0)		.318
No	27 (51.9)		73 (44.0)		
P-CAT total score		44.12 (4.67)		43.70 (5.05)	.599

Abbreviations: P-CAT, Person-centered Care Assessment Tool; SD, standard deviation.

[a]*p* Value was obtained from the independent *t*-test; $p < .05$.

[b]Years of working experience in Indonesia is categorized into <2 and ≥2 because in the Indonesia-Japan Economic Partnership Agreement (IJEPA) programme to apply as a nurse, a candidate must have at least 2 years of working experience in Indonesia.

[c]Years of working experience in Japan is categorized into <4 and ≥4 years because the IJEPA programme working contract is 4 years.

except for the CFA, where SPSS AMOS Version 28.0 was used (IBM Corporation).

2.3 | Ethical consideration

Ethics approval for the study was obtained from the Ethics Committee of the Tohoku University Graduate School of Medicine (Approval number: 2021-1-155). Together with the distribution of the questionnaire, we included descriptions of the study and protection of personal information. Participants were assured that the survey was voluntary and were informed that by answering the questionnaire consent would be implied.

3 | RESULTS

3.1 | Demographic characteristics of the study participants

Table 1 shows the demographic characteristics of the study participants. The sample ($n = 218$) consisted mostly of females ($n = 142$, 65.1%). The mean age of the participants was 28.86 ± 2.94 years (range = 20–40 years). The mean years of work experience in LTC facilities in Japan were 3.58 ± 1.96 years (range = 0–12 years). Most of the participants had less than 4 years of work experience ($n = 111$, 50.9%). Among the participants, 27 (12.4%) were Indonesian nurses with a Japanese-certified nurse qualification, 67 (30.7%) had a

Japanese-certified care worker qualification and 124 (56.9%) had no Japanese qualifications. The total scores of the Indonesian P-CAT ranged from 30 to 56, with a mean score of 43.80 ± 4.97.

3.2 | Dimensionality

No missing values were found, and the skewness and kurtosis values of the items show a normal distribution of the data, as shown in Table 2. The Kaiser–Meyer–Olkin test (0.79) and Bartlett's test of sphericity ($p < .001$) were satisfactory. The EFA suggested a three-factor model as three factors had eigenvalues above 1. Table 2 also shows the factor loadings, communalities and total variance explained by the Indonesian version of the P-CAT. The correlation matrix for all items is presented in Table 3.

Table 4 shows the CFA result in models based on EFA, the model of the original P-CAT and the five translated versions. Eventually, only the three-factor model derived from EFA showed better-fit indices compared to other models, with a CMIN/DF of 1.78, CFI of 0.94 and RMSEA of 0.06 (Figure 1).

Subscale 1 consists of Items 1, 2, 3, 6 and 11 labelled as *the extent of personalizing care*, Subscale 2 consists of Items 7, 8, 9, 10 and 12 labelled as *the amount of environmental support* and Subscale 3 consists of Items 4, 5 and 13 labelled the *degree of flexibility in caring activities*. The results of EFA and CFA suggested that the Indonesian P-CAT has a different structure compared to other versions.

3.3 | Known-group validity

The known-group validity testing is presented in Table 5. The result shows a significant difference in P-CAT scores between participants who had training in dementia care ($n = 118$, mean 44.55 ± 4.78) and those who did not ($n = 100$, mean 42.91 ± 5.06) ($p = .015$); who knew about PCC ($n = 85$, mean 44.87 ± 5.29) and those who did not ($n = 133$, mean 43.11 ± 4.65) ($p = .011$); and those who were satisfied with the job ($n = 83$, mean 44.75 ± 4.72) and those who were not ($n = 135$, mean 43.20 ± 5.04) ($p = .025$).

3.4 | Internal consistency and test–retest reliability

The internal consistency of the items, subscales and total scale are presented in Table 6. Cronbach's α for the total scale was 0.68. Internal consistency was very good for Subscale 1 (0.81), and acceptable for Subscale 2 (0.78). However, Subscale 3 was below the acceptable range (0.57). Cronbach's α if item deleted was between .62 and .68 and the corrected item-total correlation was between .12 and .51.

The results of the test–retest reliability analysis are presented in Table 7. No statistically significant differences were found in the mean score of the test–retest on the total scale and subscales. The ICC for the total scale (ICC = 0.61), Subscale 1 (ICC = 0.57) and Subscale 3 (ICC = 0.58) were considered moderate while Subscale 2 (ICC = 0.44) was considered poor. The ICC for each item was between .20 and .55.

4 | DISCUSSION

The overall results of the study support the translation and psychometric properties of the scale among Indonesian care staff working in LTC facilities in Japan. The content, structure and properties of the Indonesian P-CAT appear to reflect the practical and theoretical components of PCC outlined in the literature and match the current dementia care situation in Japan. The Indonesian P-CAT could therefore offer important opportunities for the measurement of PCC in clinical and research contexts, as well as facilitate cross-cultural comparisons of PCC in LTC facilities internationally.

Indonesian P-CAT has a three-factor structure that is different from the original P-CAT and the other versions. Therefore, some of the subscales were labelled differently. Subscale 1 was labelled the *extent of personalizing care* that measures the attempt of care staff to personalize the care. Although Items 4 'The quality of the interaction between staff and residents is more important than getting the tasks done' and 5 'We are free to alter work routines based on residents' preferences' were removed, the remaining five items still reflect personalization of care, hence, the same label is used as the original version.

In Subscale 2, Item 12 "It is hard for residents in this facility to find their way around" originally from Subscale 3 was joined with Items 7, 8, 9 and 10 to construct this subscale. Since this subscale no longer reflects the amount of organizational support but instead reflects the amount of support in the environment, the subscale is labelled as the *amount of environmental support* which includes items that assess the supportiveness of the environment either for residents with dementia or care staff.

The literature describes supportive care settings as feeling at ease, including aspects of experiencing safety, experiencing welcoming, experiencing self-awareness in the environment, building and maintaining social relationships, and experiencing a willingness to help (Edvardsson et al., 2005). A supportive environment can enhance the cognitive function of persons with dementia, make it easier to complete activities at their own pace, be able to locate themselves in the environment, acknowledge and interact with others (Edvardsson et al., 2005), and minimize behavioural symptoms (The Center for Health Design, 2020).

A supportive environment for residents on this subscale is reflected by providing a home-like, peaceful and calm environment that allows residents to easily find their way around. Moreover, a supportive environment for care staff on the subscale is shown through organizational support for staff to provide PCC. In Subscale 3 of the Indonesian version, Items 4 and 5, originally from Subscale 1, were joined with Item 13 to form this subscale. With this arrangement, Subscale 3 no longer reflects environmental accessibility but reflects the flexibility of the facility to adjust the caring activity to

TABLE 2 Factor Loading, Communalities and total variance explained for the Indonesian version of the P-CAT ($n=218$).

Item[a]	Item content	Mean (SD)	Skewness	Kurtosis	Subscale 1[b]	Subscale 2[b]	Subscale 3[b]	Communalities
					Extent of personalizing care	Amount of environmental support	Degree of flexibility in caring activities	
1	We often discuss how to give person-centered care.	3.29 (0.76)	−0.49	1.39	**0.74**	0.01	−0.03	0.53
2	We have formal team meetings to discuss residents' care.	3.50 (0.87)	−0.54	0.54	**0.91**	0.10	−0.13	0.75
3	The life history of the residents is formally used in the care plans we use.	3.67 (0.78)	−0.77	1.78	**0.67**	−0.18	0.05	0.52
6	Residents are offered the opportunity to be involved in individualized everyday activities.	3.69 (0.82)	−1.02	2.05	**0.53**	0.04	0.29	0.48
11	Assessment of residents' needs is undertaken on a daily basis.	3.38 (0.88)	−0.50	0.65	**0.45**	−0.01	0.08	0.24
7	I simply do not have the time to provide person-centered care.	3.58 (0.82)	0.08	−0.26	0.06	**0.70**	−0.04	0.49
8	The environment feels chaotic.	3.78 (0.91)	0.42	−0.05	−0.10	**0.68**	−0.09	0.45
9	We have to get the work done before we can worry about a home-like environment.	3.41 (0.84)	0.20	−0.03	0.01	**0.49**	−0.11	0.26
10	This organization prevents me from providing person-centered care.	3.68 (0.81)	0.41	0.59	0.10	**0.76**	−0.04	0.57
12	It is hard for residents in this facility to find their way around.	3.35 (0.88)	−0.07	−0.73	−0.10	**0.63**	0.08	0.40
4	The quality of the interaction between staff and residents is more important than getting the tasks done.	3.09 (0.86)	−0.18	0.04	0.01	0.04	**0.81**	0.64
5	We are free to alter work routines based on residents' preferences.	2.74 (0.88)	0.03	−0.19	0.04	−0.04	**0.60**	0.38

(Continues)

TABLE 2 (Continued)

Item[a]	Item content	Mean (SD)	Skewness	Kurtosis	Subscale 1[b] Extent of personalizing care	Subscale 2[b] Amount of environmental support	Subscale 3[b] Degree of flexibility in caring activities	Communalities
13	Residents are able to access outside space as they wish.	2.63 (0.89)	−0.04	−0.57	0.17	−0.02	0.22	0.11
Explained variance (%)	56.31%				26.44%	20.07%	9.80%	

Note: The gray shade means which items that included in each subscales (grouping).
Abbreviations: P-CAT, Person-centered Care Assessment Tool; SD, standard deviation.
[a]Item numbers are based on the original final version of the P-CAT questionnaire.
[b]Factor loading >0.3 is in bold print.

residents' needs. Therefore, the subscale is labelled as the *degree of flexibility in caring activities*.

To flexibly adjust care to residents' needs, care staff must be able to exercise judgement and autonomy. Autonomy appears to be linked to the authority to make decisions, and the freedom to make clinical judgements, choices and actions related to patients and families (Skår, 2009). The ability of care staff to autonomously make judgements or decisions in care is shaped by knowledge and experience (Motamed-Jahromi et al., 2015; Tanner, 2006). Therefore, possible reasons for the emergence of this subscale could be that participants had little knowledge about PCC, had little practical experience with PCC or did not have Japanese national qualifications as nurses or care workers.

In the known-group validity examination, those who had received training in dementia care and knew about PCC had significantly higher total scores on the P-CAT. This is in line with the evidence that shows dementia-related training increases knowledge and improves care practice of care staff (Jack-Waugh et al., 2018; Rokstad et al., 2017; Wang et al., 2017). The P-CAT total scores were also higher among those who were satisfied with their job which was supported by evidence that shows a higher level of PCC is associated with a higher level of job satisfaction (Barbosa et al., 2015; Choi et al., 2021; Rajamohan et al., 2019). The Indonesian P-CAT seems to have the ability to distinguish different scores for groups that are known to differ in the variables being assessed.

The overall Indonesian P-CAT shows acceptable internal consistency. However, Cronbach's *α* is lower than other versions. Although the items are translated accurately, cultural differences might affect how people respond to the questions (Spector et al., 2015). Moreover, only a small number of participants knew about PCC, which might have caused them to consider each item to measure different or unrelated constructs. At the subscale level, Cronbach's *α* of Subscale 3, the *degree of flexibility in caring activities* was slightly low. This is likely because this subscale had fewer items compared with the other subscales, a phenomenon also seen in the study of the original P-CAT (Edvardsson et al., 2010).

The overall Indonesian P-CAT test–retest reliability was considered moderate, but low for Subscale 2, the *amount of environmental support*. This might have been due to the attributes of items in this subscale being a state rather than a trait, which has temporal instability (Polit, 2014). For instance, the response to Item 7 'I simply do not have the time to provide person-centered care' (the item was reversed before analysis was conducted) could easily change depending on the daily workload and the number of staff.

4.1 | Limitations

This study has some limitations. First, compared to the internal consistency of the other P-CAT versions, the Indonesian P-CAT has a lower internal consistency, which is presumably because only a small number of study participants know about the PCC

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TABLE 3 Correlation matrix of the Indonesian version of the P-CAT (n = 218).

	PCAT 1	PCAT 2	PCAT 3	PCAT 4	PCAT 5	PCAT 6	PCAT 7	PCAT 8	PCAT 9	PCAT 10	PCAT 11	PCAT 12	PCAT 13
PCAT 1	1												
PCAT 2	0.64**	1											
PCAT 3	0.50**	0.57**	1										
PCAT 4	0.23**	0.20**	0.28**	1									
PCAT 5	0.19**	0.19**	0.23**	0.50**	1								
PCAT 6	0.43**	0.51**	0.51**	0.41**	0.31**	1							
PCAT 7	−0.03	0.08	−0.13	−0.09	−0.07	−0.02	1						
PCAT 8	−0.05	−0.06	−0.16*	−0.03	−0.06	−0.04	0.42**	1					
PCAT 9	−0.13	0.03	−0.13	−0.11	−0.16*	−0.02	0.41**	0.35**	1				
PCAT 10	0.03	0.15*	−0.18*	−0.05	−0.10	0.02	0.52**	0.52**	0.35**	1			
PCAT 11	0.37**	0.37**	0.37**	0.21**	0.13	0.39**	−0.02	0.02	−0.04	−0.02	1		
PCAT 12	−0.05	−0.05	−0.15*	−0.04	−0.08	−0.09	0.48**	0.45**	0.26**	0.44**	−0.11	1	
PCAT 13	0.25**	0.19**	0.13	0.22**	0.21**	0.19**	−0.02	−0.13	−0.15*	−0.04	0.21**	0.07	1

Note: Subscale 1 Extent of personalizing care: Items 1, 2, 3, 6 and 11. Subscale 2 Amount of environmental support: Items 7, 8, 9, 10 and 12. Subscale 3 Degree of flexibility in caring activities: Items 4, 5 and 13.

Abbreviation: P-CAT, Person-centered Care Assessment Tool.

**Correlation is significant at the .01 level (two-tailed); *Correlation is significant at the .05 level (two-tailed).

TABLE 4 CFA indices based on one-, two-, and three-factor models derived from EFA, the original P-CAT and another translated version's factor model (n = 218).

Model	X^2	df	CMIN/df	CFI	RMSEA
One-factor	421.43	65	6.45	0.52	0.16
Two-factor	156.85	64	2.45	0.88	0.08
Three-factor	110.11	62	1.78	0.94	0.06
Original version (Edvardsson et al., 2010)	159.86	62	2.58	0.87	0.09
Swedish version (Sjögren et al., 2012)	156.85	64	2.45	0.88	0.08
Norwegian version (Rokstad et al., 2012)	156.85	64	2.45	0.88	0.08
Korean version (Tak et al., 2015)	172.74	64	2.70	0.85	0.09
Spanish version (Martínez et al., 2016)	421.43	65	6.45	0.52	0.16
Chinese version (Le et al., 2020)	202.37	64	3.15	0.81	0.10

Abbreviations: CFA, confirmatory factor analysis; CFI, comparative fit index; CMIN, chi-square statistics; df, degrees of freedom; P-CAT, Person-centered Care Assessment Tool; RMSA, root mean square error of approximation.

concept. Therefore, further psychometric evaluation is needed in the population of Indonesian nurses who have received proper education and training about PCC to assess whether there are improvements in internal consistency. Second, the P-CAT is a self-administered questionnaire that is prone to social desirability bias. However, to mitigate this potential issue we assured the anonymity of study participants (Polit & Beck, 2017). Moreover, the study was conducted online and the result was sent directly to the researcher without work facilities being notified of participant responses. Finally, this study adopted two sampling methods due to difficulties in recruiting study participants. However, there was no significant difference in total P-CAT scores between the participants recruited through purposive and snowball sampling.

5 | CONCLUSIONS

The Indonesian P-CAT is conceptualized through the subscales as the *extent of personalizing care*, the *amount of environmental support* and the *degree of flexibility in caring activities*. Its dimensionality shows a

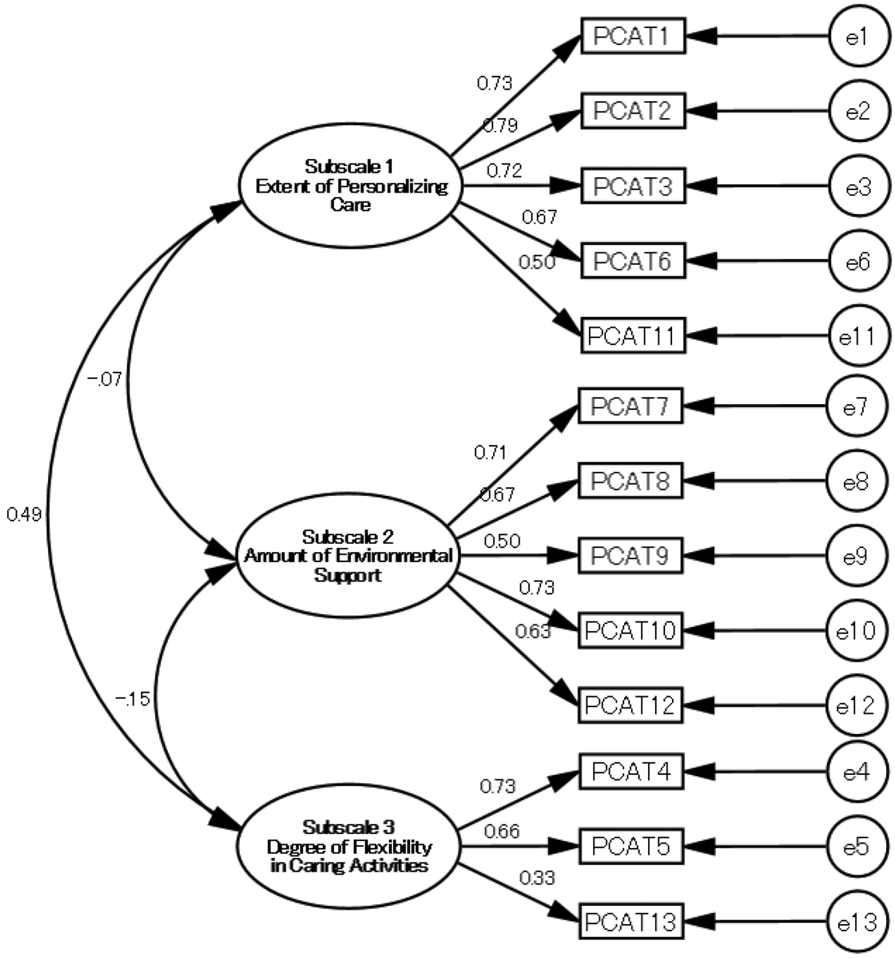

FIGURE 1 Confirmatory factor analysis of the three-factor model of the Indonesian version of the person-centered Care Assessment Tool.

TABLE 5 Known-group validity of the Indonesian version of the P-CAT (n = 218).

Participants group	n (%)	P-CAT score Mean (SD)	p Value[a]
Training in dementia care			
Yes	118 (54.1)	44.55 (4.78)	.015
No	100 (45.9)	42.91 (5.06)	
Do you know about PCC?			
Yes	85 (39.0)	44.87 (5.29)	.011
No	133 (61.0)	43.11 (4.65)	
Overall, how satisfied are you with your current job?			
Satisfied (satisfied ~ very satisfied)	83 (38.1)	44.75 (4.72)	.025
Not satisfied (neutral ~ not satisfied at all)	135 (61.9)	43.20 (5.04)	

Abbreviations: P-CAT, Person-centered Care Assessment Tool; PCC, person-centred care; SD, standard deviation.

[a]p Value was obtained from independent t-test; $p < .05$.

slightly different factor structure from the original version. This study suggests that the Indonesian P-CAT is a valid and reliable instrument for evaluating the degree of PCC provided by Indonesian care staff in the dementia care setting. Since the study was conducted on Indonesian nurses working in LTC facilities in Japan, the Indonesian P-CAT might not reflect the PCC concept in the Indonesian context. Therefore, the application of the Indonesian P-CAT in the Indonesian context is required to further examine its psychometric properties.

6 | IMPLICATION FOR PRACTICE

As a result of the development of the Indonesian P-CAT, it is now possible to evaluate the person-centered care practice provided by Indonesian care staff working in dementia care settings in Japan, which will reveal areas that require improvement. Understanding the implementation of person-centered dementia care assists researchers and policymakers to enhance dementia care practices and policies to support Indonesian care staff working in Japan. Moreover, the application of the Indonesian P-CAT can also be a medium to introduce and promote the PCC concept to Indonesian care staff working in dementia care.

TABLE 6 Item and subscale performance of the Indonesian version of the P-CAT ($n = 218$).

Item	Mean (SD)	Cronbach's α if item deleted	Corrected item-Total correlation	Cronbach's α subscales
Subscale 1: Extent of personalizing care				0.81
1	3.29 (0.76)	0.64	0.44	
2	3.50 (0.87)	0.62	0.51	
3	3.67 (0.78)	0.65	0.33	
6	3.69 (0.82)	0.63	0.48	
11	3.38 (0.88)	0.65	0.33	
Subscale 2: Amount of environmental support				**0.78**
7	3.58 (0.82)	0.66	0.29	
8	3.78 (0.91)	0.67	0.22	
9	3.41 (0.84)	0.68	0.12	
10	3.68 (0.81)	0.66	0.30	
12	3.35 (0.88)	0.67	0.21	
Subscale 3: Degree of flexibility in caring activities				**0.57**
4	3.09 (0.86)	0.66	0.31	
5	2.74 (0.88)	0.67	0.23	
13	2.63 (0.89)	0.67	0.19	
Total scale				0.68

Note: Bold values are Cronbach's α of each subscale.

Abbreviations: P-CAT, Person-centered Care Assessment Tool; SD, standard deviation.

TABLE 7 Test–retest reliability measures for the Indonesian version of the P-CAT ($n = 75$).

	Item	Test Mean (SD)	Retest Mean (SD)	Intra-class correlation (95% CI)
Subscale 1: Extent of personalizing care		17.77 (3.14)	18.28 (2.47)	0.57 (0.40–0.71)
1	We often discuss how to give person-centered care.	3.31 (0.75)	3.65 (0.65)	0.27 (0.06–0.46)
2	We have formal team meetings to discuss residents' care.	3.52 (0.95)	3.69 (0.74)	0.55 (0.38–0.69)
3	The life history of the residents is formally used in the care plans we use.	3.77 (0.69)	3.75 (0.64)	0.30 (0.08–0.49)
6	Residents are offered the opportunity to be involved in individualized everyday activities.	3.75 (0.86)	3.81 (0.63)	0.37 (0.16–0.55)
11	Assessment of residents' needs is undertaken on a daily basis.	3.43 (0.95)	3.37 (0.87)	0.53 (0.34–0.67)
Subscale 2: Amount of environmental support		17.28 (2.70)	17.41 (2.19)	0.44 (0.24–0.61)
7	I simply do not have the time to provide person-centered care.	3.48 (0.72)	3.57 (0.70)	0.20 (−0.03–0.40)
8	The environment feels chaotic.	3.63 (0.88)	3.73 (0.66)	0.41 (0.21–0.58)
9	We have to get the work done before we can worry about a home-like environment.	3.37 (0.91)	3.24 (0.69)	0.42 (0.21–0.59)
10	This organization prevents me from providing person-centered care.	3.56 (0.74)	3.60 (0.74)	0.42 (0.21–0.59)
12	It is hard for residents in this facility to find their way around.	3.24 (0.88)	3.27 (0.83)	0.28 (0.06–0.48)
Subscale 3: Degree of flexibility in caring activities		8.43 (1.88)	8.41 (1.49)	0.58 (0.41–0.71)
4	The quality of the interaction between staff and residents is more important than getting the tasks done.	2.97 (0.85)	2.93 (0.72)	0.52 (0.33–0.67)
5	We are free to alter work routines based on residents' preferences.	2.76 (0.82)	2.79 (0.66)	0.54 (0.36–0.68)
13	Residents are able to access outside space as they wish.	2.69 (0.87)	2.69 (0.81)	0.48 (0.29–0.64)
Total scale		43.48 (4.45)	44.11 (4.01)	0.61 (0.45–0.74)

Abbreviations: CI, confidence interval; P-CAT, Person-centered Care Assessment Tool; SD, standard deviation.

AUTHOR CONTRIBUTIONS

Woro Mustika Weni contributed to the conceptualization and design of this study, data collection, data analysis and manuscript writing. Megumi Shimizu, Chiaki Ando, Ohashi Yuki, David Edvardsson and Akiko Ozaki contributed to the conceptualization and design of this study and critically revised the manuscript. Annica Backman, Rebecca Baxter and Noortje Kloos contributed to critically revising the manuscript. All the authors have read and approved the manuscript.

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CONFLICT OF INTEREST STATEMENT

We have no conflict of interest to declare.

DATA AVAILABILITY STATEMENT

The authors do not wish to share the data as we have not completed the original work with the data set.

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