

Cross-culture adaptation and validation of Indonesian version of the postpartum depression literacy scale

Siti Sholihat¹, Santhna Lechmi Panduragan², Nisha Nambiar², Benny Novico Zani¹

¹Department of Nursing, Sekolah Tinggi Ilmu Kesehatan Raflesia, Depok, Indonesia

²Faculty of Nursing, Lincoln University Collage, Bharu, Malaysia

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ABSTRACT

Mental health illiteracy has been found to be a risk factor in a large number of disorders. The purpose of this study was adapting cross-culturally the Postpartum depression literacy scale (PoDLiS) questionnaire in Indonesian pregnant and postnatal women. There were three stages involved in this study: translation, cultural adaptation, and validation of an instrument. A cross-sectional study was carried out on a convenient sample of pregnant and postpartum women who visited the prenatal and pediatric clinics of an Indonesian general hospital. Construct validity and reliability testing was conducted using factors analysis, confirmatory factors analysis, and convergent and discriminant validity. The scale's reliability was determined using internal consistency. Within their own factor, the bulk of the elements had a high factorial weight ($>.50$). The model with seven factors shows excellent fit indices after confirmatory factor analysis (CFI=0.94; TLI=0.98; RMSEA=0.056 [95% CI 0.011-0.095]). Because seven components have average variance extracted (AVE $>.50$), there is convergent validity. Because the AVE coefficients for the seven components are greater than the correlation coefficients for each dimension, each dimension possesses discriminant validity. The PoDLiS structure is suitable for pregnant and postpartum women from various cultures, particularly Indonesia.

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Corresponding Author:

Siti Sholihat

Department of Nursing, Sekolah Tinggi Ilmu Kesehatan Raflesia Indonesia

Mahkota Raya Street No.32 B, Tugu, Cimanggis, Depok, West Java 16451, Indonesia

Email: sholihat.raflesia@gmail.com

1. INTRODUCTION

Women are particularly vulnerable to mental health problems during the difficult time of adjustment to motherhood, when they are forced to learn new parenting skills, establish new family ties, and undergo significant physical and psychological transformations [1], [2]. Postpartum depression (PPD) refers to any major or sub-clinical depression that a woman experiences within the first year postpartum [3], [4]. A lack of sleep, irritability, a lack of interest in previously enjoyed activities, a lack of energy, and a low sense of self-worth are all signs of PPD in women [5]–[7]. Prevalence of PPD in high- and middle- and low-income countries was found to be approximately 9.5% [8], [9]. Many women who suffer from postpartum depression (PPD) recover within a few months, but approximately 30% of women may continue to suffer for at least a year after childbirth. In both postpartum and non-postpartum women, the risk of recurrence was approximately 40%. Along with increasing prevalence, research has shown that PPD is harmful to the health and mental well-being of women [7], infants' behavioral and emotional development [10], and relationships with partners and family members [11]. Prevalence and consequences of PPD make it one of the most serious global public health issues of the last decade [7], [12].

Mental health illiteracy (MHL) has been found to be a risk factor in a large number of disorders. Health literacy (HL) is an important concept in the context of depression, and it is beneficial for depression prevention, early diagnosis, and treatment [13]. Mental health literacy refers to a person's ability to recognize, treat, or prevent mental illness through the acquisition of knowledge and beliefs about mental illness. There are many parts to mental health literacy (MHL), such as i) knowing how to prevent mental disorders, ii) recognizing the disease when it starts to develop, iii) knowing how to get help and what treatments are available, iv) knowing how to help yourself with minor problems, and v) having first aid skills to help others who are developing a mental disorder or are in a mental health crisis [14].

There is a strong correlation between higher MHL levels and the early detection of mental disorders as well as the slowing or even reversal of these disorders in people with depression and anxiety. Measurement of mental health literacy can be done in many ways, but the most common one is the use of diagnostically accurate case vignettes [15]. Mental health disorders are difficult to identify in the general population, according to studies. Postpartum depression literacy is not currently assessed using a standardized instrument within the context of mental health literacy. Postpartum depression literacy has been assessed in only two studies, neither of which used a specific measurement: They used three vignettes that met the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) criteria for a major depressive episode in their study [10]. There were 22 True/False/Don't Know questions in Fonceca *et al.* Portuguese's version of the Depression Literacy Questionnaire [11]. Postpartum depression literacy scale (PoDLiS) was developed by Mirsalimi [16]. A mental health literacy framework was used to create and validate this instrument in Iran. To be considered mentally literate, one must be able to recognize symptoms of a mental illness, be knowledgeable about risk factors and causes, be knowledgeable about self-help strategies, be knowledgeable about professional help and treatment options, and have attitudes that encourage people to seek help.

Finally, one must know where to look for mental health information. In contrast, the Indonesian version's cross-cultural adaptation of the PoDLiS received less attention. It is critical to take into account cultural, conversational, linguistic, and contextual considerations when creating a questionnaire [17]. This necessitates a unique translation method that ensures equivalence between the source and target versions of the questioner, as well as translation, adjustment, and evaluation of the target questionnaire's validity and reliability [17]. We needed to validate the PoDLiS in Bahasa because it is Indonesia's national language and is spoken by the vast majority of the country's citizens. The purpose of this study was adapting cross-culturally the PoDLiS questionnaire in Indonesian pregnant and postnatal women.

2. RESEARCH METHOD

2.1. Design and sample

There were three stages involved in this study: translation, cultural adaptation, and validation of an instrument [18]. A cross-sectional study was done on pregnant women and women who had just given birth who went to the prenatal and pediatric departments of an Indonesian general hospital. To take part in the study, people had to be at least 18 years old, pregnant or have just given birth, and able to read and write (they had to have finished primary school). Confirmatory factor analysis (CFA) sample size calculations get harder as the number of factors and indicators goes up [19]. Some studies suggest a sample size of five to ten people per question [20]. This survey was completed by 310 women who were either pregnant or postpartum, a response rate of 88.6% (based on an average of ten respondents per item).

2.2. Instrument

With 31 variables, the PoDLiS suggests breaking it down to seven factors. On a Likert scale from 1 (strongly disagree) to 5 (strongly agree; extremely likely), how you feel about each statement is indicated. For each questionnaire's subscale, a score between 1 and 5 is calculated by adding up all of the items and dividing by the total number of items. The internal consistency of the questionnaire was demonstrated by a Cronbach's alpha of 0.78, with individual factor alphas ranging from 0.70 to 0.83 [16].

2.3. Instrument translation

This instrument is being tested on a small scale in Bahasa Indonesia for research purposes. Pre-testing, forward translation, and cognitive interviews are the stages of the hearings. A final language version of the English instrument in each destination country or culture is desired [21]. We begin with an independent translation of the Indonesian text by a pair of bilingual translators (T1 and T2). The revised "T-12" report from the translators is included after the translations in the second part. A translator, who had not seen the original English version, started with the T-12 version to finish the translation. The reverse translation was completed by a team of two native speakers. Assembling a group of professionals, such as

psychometricians, medics, linguists, and simultaneous interpreters, was the fourth phase. They settled on having semantic, grammatical, experiential, and conceptual parity between the English and Indonesian versions. To rate the legibility and comprehension of the language (5 being the highest; 1 being the lowest). A 5-point Likert scale ranging from "totally culturally relevant" to "not at all culturally relevant" was used to make these assessments. This grading system was needed of all responses in order to determine the overall item clarity and cultural relevance.

2.4. Culture-adaptation

In order to evaluate the translated items, answer types, and survey instructions, 20 pregnant and postnatal women were interviewed cognitively [22]. Some difficulties were requested to be elucidated, simplified, and simplified for the participants. The questionnaire was examined by a group of ten nurses with backgrounds in both research and clinical practice. On a scale from 1 (not at all significant) to 4 (very relevant), they ranked each item's cultural significance and acceptability. Each item's weight on the scale was determined. The scale-CVI (S-CVI) (Content validity index) score was determined by adding up all of the experts' ratings for the item and dividing by two to find out what fraction of ratings fell between 3 and 4. An S-CVI of 0.90 or greater is considered excellent, while an I-CVI of 0.80 is considered satisfactory [23].

2.5. Construct validity and reliability testing

Root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and Comparative Fit Index (CFI) were looked at to see how well the measurements fit. [24]. A good fit is indicated by an RMSEA less than 0.06 and an SRMR less than 0.08. Good fit is indicated by a CFI value of 0.9 or higher; a 0.8 or lower value indicates an adequate fit. Convergent validity was determined by calculating the average variance extracted (AVE) [25]. The discriminatory validity of the dimensions was tested by comparing their AVE coefficients.

2.6. Reliability

Each subscale's internal consistency was assessed using Cronbach's alphas, with 0.7 being considered reliable [26]. Ethical consideration This study was approved by the affiliated university's Institutional Review Board. Participants were provided with information about the study's objectives and methodology, as well as about the voluntary nature of their participation and the confidentiality of their responses. The instrument's authors have granted permission for its use and translation. We conducted our statistical analyses with the SPSS version 23 software and LISREL 8.80 (student), with a significance level of 0.05 considered to be significant.

3. RESULTS

3.1. Cross-culture adaptation

Linguistic clarity and cultural relevance were found to be 95% and 90% respectively in cognitive tests. Panelists considered readability, comprehension, and cultural relevance when evaluating the document. Minor revisions have been made in response to feedback from the interviews. A number of statements, including number 22 (I would rather live with postpartum depression than go through the ordeal of seeking psychiatric treatment), were revised and reworded to be more optimistic.

3.2. Content validity

The Content Validity Index, often known as CVI, was utilised in order to assess the prioritisation, relevance, and language of the questionnaire's content validity. The fact that only five of the seven specialists who were invited to participate in the item content review actually did so demonstrates that the process was effective. CVI 0.87-1.00 The S-CVI for understanding was also 0.93, and the S-CVI for clarity was the same value as shown in Table 1.

3.3. Construct validity

Psychometric testing was administered to 310 pregnant and postnatal women at a general public hospital in Indonesia's prenatal and pediatric clinics. The mean age of the pilot sample was 32.20 (SD=6.21), while the confirmatory sample was 31.56 (SD=5.37). The majority of participants were educated beyond the secondary level, unemployed, earning less than the regional minimum wage, and Muslim shown in Table 2. Using a pilot sample's worth of data, an exploratory factor analysis was performed, and the results showed that seven factors accounted for 66.3% of the variance in the construct under study. Most of the components were highly factorial (factorial weight >.50) as shown in Table 3. Due to the factorial weight of item 1 being less than 0.30, it was excluded from the factor to which it was theoretically assigned. The remaining 31 items have greater than 0.3 factor loadings (see Figure 1). In addition, they account for between 50.2% and 69% of

the variance within each sub-construct. Following confirmatory factor analysis, the seven-factor model has satisfactory fit indices (CFI=0.94, TLI=0.98, and RMSEA=0.056 [95% CI: 0.011-0.095]) as shown in Table 4.

Table 1. Content validity index based on Aiken Value formula

Item	Examiner 1		Examiner 2		Examiner 3		Examiner 4		Examiner 5		Σ_s	V	
	R	S=R-Lo	R	S=R-Lo	R	S=R-Lo	R	S=R-Lo	R	S=R-Lo			
1	3	2	4	3	4	3	4	3	4	3	14	0.93	Valid
2	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
3	4	3	4	3	3	2	4	3	3	2	13	0.87	Valid
4	3	2	4	3	4	3	4	3	4	3	14	0.93	Valid
5	4	3	4	3	3	2	4	3	4	3	14	0.93	Valid
6	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
7	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
8	4	3	4	3	4	3	4	3	3	2	14	0.93	Valid
9	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
10	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
11	4	3	3	2	4	3	4	3	4	3	14	0.93	Valid
12	4	3	4	3	3	2	3	2	3	2	12	0.80	Valid
13	4	3	3	2	4	3	4	3	4	3	14	0.93	Valid
14	4	3	4	3	4	3	3	2	4	3	14	0.93	Valid
15	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
16	4	3	3	2	4	3	4	3	3	2	13	0.87	Valid
17	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
18	3	2	4	3	4	3	4	3	4	3	14	0.93	Valid
19	4	3	4	3	3	2	4	3	4	3	14	0.93	Valid
20	4	3	3	2	4	3	4	3	4	3	14	0.93	Valid
21	4	3	4	3	4	3	4	3	4	3	15	1.00	Valid
22	4	3	4	3	3	2	4	3	4	3	14	0.93	Valid
23	4	3	4	3	4	3	4	3	3	2	14	0.93	Valid
24	4	3	4	3	3	2	4	4	3	2	14	0.93	Valid
25	3	2	3	2	4	3	4	3	4	3	13	0.87	Valid
26	4	3	4	3	3	2	4	3	4	3	14	0.93	Valid
27	3	2	4	3	4	3	4	3	3	2	13	0.87	Valid
28	3	2	4	3	3	2	4	3	4	3	13	0.87	Valid
29	4	3	4	3	4	3	3	2	4	3	14	0.93	Valid
30	4	3	4	3	4	3	3	2	3	2	13	0.87	Valid
31	3	2	4	3	4	3	4	3	4	3	14	0.93	Valid

Table 2. Demographic characteristics

Demographics	Pilot sample (n = 70)	Confirmatory sample (n = 310)
	n (%)	n (%)
Age (years old), Mean \pm SD	32.20 \pm 6.21	31.56 \pm 5.37
Educational level		
Secondary and below	20 (28.6)	134 (43.2)
Above secondary level	50 (71.4)	176 (56.8)
Working status		
Employed	34 (48.6)	125 (40.3)
Unemployed	36 (51.4)	185 (59.7)
Monthly income		
Below minimum regional salary	40 (57.1)	170 (54.8)
Above minimum regional salary	30 (42.8)	140 (45.2)
Religion		
Muslim	56 (80)	230 (74.2)
Non-Muslim	14 (20)	80 (25.8)

3.4. Convergent and discriminant validity

Seven of the scale's factors have significant average variance extracted (AVE >0.50), establishing convergent validity. Postpartum depression recognition (AVE=0.66), postpartum depression risk factor and cause knowledge (AVE=0.75), postpartum depression self-care knowledge and belief (AVE=0.80), postpartum depression professional help knowledge (AVE=0.67), postpartum depression professional help belief (AVE=0.74), postpartum depression recognition and appropriate help-seeking attitude (AVE=0.70), and postpartum depression information-seeking knowledge (AVE=0.72) (Table 5). Each dimension has discriminant validity since the AVE coefficients for the seven components are larger than the correlation coefficients for each dimension.

Table 3. Exploratory factor analysis using confirmatory sample

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
1	0.70						
2	0.83						
3	0.81						
4	0.68						
5	0.60						
6	0.66						
7		0.65					
8		0.71					
9		0.82					
10		0.65					
11		0.73					
12			0.80				
13			0.81				
14			0.75				
15			0.63				
16			0.60				
17				0.72			
18				0.74			
19					0.81		
20					0.75		
21						0.73	
22						0.68	
23						0.77	
24						0.76	
25						0.71	
26						0.70	
27							0.72
28							0.70
29							0.75
30							0.80
31							0.76
% Of variance explained	0.667	0.498	0.625	0.504	0.615	0.544	0.523
Cumulative % of variance	0.624	0.502	0.734	0.652	0.630	0.570	0.690
Overall MSA	0.957						
Bartlett's test of sphericity	$\chi^2 = 325.092, df=83, p<0.01$						

Abbreviations: IC: interpersonal characteristics; TA: treat appraisal; CA: coping appraisal; PE: past experience; MIS: MMR information sources

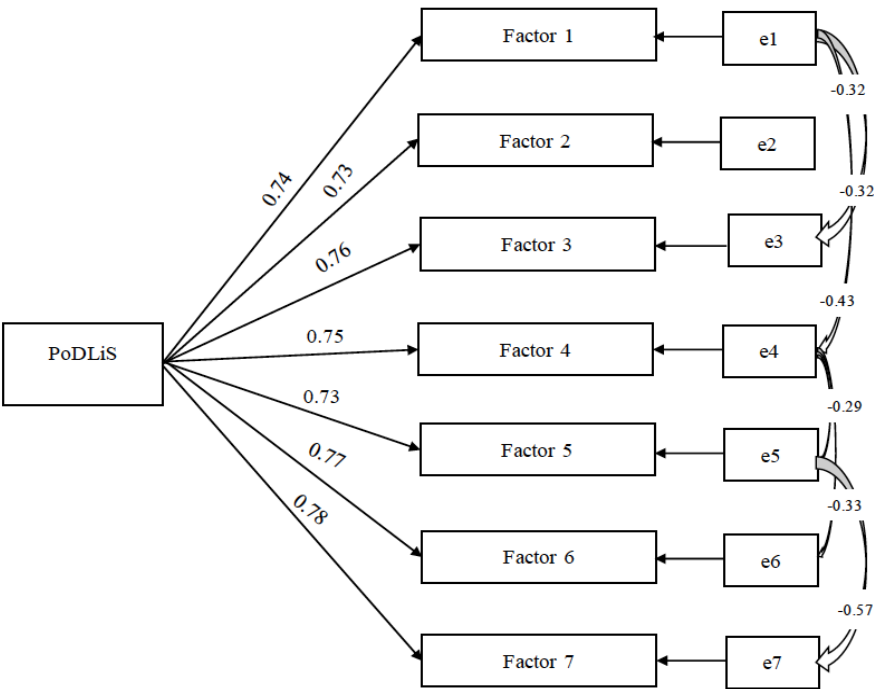


Figure 1. Confirmatory factors analysis

Table 4. Model fit indices

Models	χ^2	df	P	TLI	CFI	RMSEA (95% CI)	SRMR
Model 1	1813.92	172	.000	0.98	0.94	0.056 (0.011-0.095)	0.042

5 RF, df, degrees of freedom; SRMR, standardized root mean square residual; TLI, Tucker-Lewis Index; RMSEA, root mean square error of approximation; CFI, Comparative Fit index.

Table 5. Convergent and discriminant validity

	1	2	3	4	5	6	7
Ability to recognize postpartum depression	0.66 ^a						
Knowledge of risk factors and causes	0.33 ^b	0.75 ^a					
Knowledge and beliefs of self-care activities	0.24 ^b	0.15 ^b	0.80 ^a				
Knowledge about professional help available	0.17 ^b	0.19 ^b	0.23 ^b	0.67 ^a			
Beliefs about professional help available	0.21 ^b	0.33 ^b	0.24 ^b	0.27 ^b	0.74 ^a		
Attitudes which facilitate recognition of postpartum depression and appropriate help-seeking	0.34 ^b	0.30 ^b	0.28 ^b	0.31 ^b	0.31 ^b	0.70 ^a	
Knowledge of how to seek information related to postpartum depression	0.20 ^b	0.24 ^b	0.29 ^b	0.32 ^b	0.25 ^b	0.33 ^b	0.72 ^a

^aAverage variance extracted.^bSquare root of the correlation coefficients of the dimensions.

3.5. Reliability testing

The value of Cronbach's Alpha for the overall score was 0.923. The range for each sub-scale was between 0.806 and 0.931, which indicates that the reliability is excellent. This instrument indicated reliable as shown in Table 6.

Table 6. Internal consistency

Parameters	Total item	Cronbach' alpha
Total score	31	0.923
Domain		
Ability to recognize postpartum depression	6	0.862
Knowledge of risk factors and causes	5	0.845
Knowledge and beliefs of self-care activities	5	0.931
Knowledge about professional help available	5	0.875
Beliefs about professional help available	2	0.806
Attitudes which facilitate recognition of postpartum depression and appropriate help-seeking	6	0.887
Knowledge of how to seek information related to postpartum depression	5	0.902

4. DISCUSSION

In Indonesian women, this was the first effort at a psychometric evaluation of a postpartum depression literacy tool. Initial psychometric testing of a questionnaire designed to assess Indonesian women's knowledge about postpartum depression. Postpartum depression symptoms and attitudes can now be assessed with the 31-item PoDLiS, which taps into seven different factors. Internal consistency and factor analysis-determined construct validity were all found in the PoDLiS to be satisfactory, which is similar to previous origin study [16]. The PoDLiS structure is suitable for pregnant and postpartum women from various cultures, particularly Indonesia. The PoDLiS, with its strong psychometric properties, is an extremely useful tool for conducting research and developing programs in Indonesian healthcare settings. For example, the PoDLiS could be used to evaluate the effectiveness of system-wide initiatives to boost clinical outcomes and hope [27], as well as the development of smartphone apps [28] and improvements to resource management [27], [29].

We must be clear about the fact that mental health literacy is not an all-encompassing solution to health disparities, and that incorporating it without the necessary resources is unlikely to improve health outcomes. The PoDLiS is a useful tool for demonstrating to people that a better life is possible [30], [31], and previous research indicates that such efforts can be amplified by showing people that it is possible. This study surveyed nearly 310 postpartum women to conduct exploratory and confirmatory factor analyses. In addition, specific methods should be developed to dispel the negative connotations associated with postpartum depression.

There are some caveats to this study. For starters, this was a study conducted at a medical facility. This raises the possibility that the sample is not indicative of the whole. Including women from the general public in future studies might prove useful. Second, it's possible that an insufficient evaluation of the measure's qualities resulted from the effort to keep it brief and easy to implement. The research team

(experts) and a thorough testing process, on the other hand, came to an agreement on item design and testing. Test-retest reliability and convergent and discriminant validity assessments were not conducted. Additionally, psychometric analysis needs to investigate test-retest reliability and convergent and discriminant validity. The PoDLiS helps us swiftly identify the women who could benefit most from our preventative programs.

In addition to monitoring changes in an individual or a group, this scale can be used to assess the success of campaigns to increase understanding of postpartum depression and to inform efforts to develop solutions for its prevention and treatment. Further research should be conducted in a variety of geographical and cultural locations. Evidence for the PoDLiS's credibility and usefulness could be gleaned from the study of such studies. Researchers will assess the scale's responsiveness (sensitivity to change) after this study is over.

5. CONCLUSION

The PoDLiS structure is suitable for pregnant and postpartum women from various cultures, particularly Indonesia. Researchers were able to understand the knowledge and beliefs of perinatal mothers regarding postpartum depression and measure all areas of mental health literacy using the PoDLiS. Women's mental health can be improved if this understanding is gained. The PoDLiS can be used to evaluate a woman's postpartum depression literacy during her pregnancy or after giving birth.




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BIOGRAPHIES OF AUTHORS






Siti Sholihat    is a doctoral student at Lincoln University Collage Malaysia, graduated from the Faculty of Public Health, University of Indonesia Rafflesia College of Health Sciences, Indonesia and currently serves as Deputy Head of Academic and Student Affairs at STIKes Raflesia Indonesia. She can be contacted at email: sholihat.raflesia@gmail.com.






Santhna Letchmi Panduragan    is the Dean of the Faculty of Nursing Lincoln University College. Has been working in Lincoln University College for the past six years and was formerly from University Kebangsaan Malaysia. She had her PhD from University Putra Malaysia, majoring in Community Education and Development. She has published more than 25 articles and one book. She is at present the principal supervisor for a number of PhD and Masters students. She can be contacted at email: santhnaa@lincoln.edu.my.



Nisha Nambiar    is a lecturer at the Department of Nursing Faculty of nursing Lincoln University Collage Malaysia, currently serving as Dean of the Faculty of Health Science. She can be contacted at email: nishaa@lincoln.edu.my.



Benny Novico Zani    is a doctoral student at Lincoln University Collage Malaysia, he graduated from the Faculty of Public Health, University of Indonesia, Rafflesia College of Health Sciences, Indonesia and currently serves as chairman of the Raflesia Depok Foundation. He can be contacted at email: bennynovicophd@gmail.com.