

# Translation, Cross-Cultural Adaptation, and Validation of the Miller-Smith Lifestyle Assessment Inventory (LSI) in the Malay Language

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## INTRODUCTION AND OBJECTIVES

There is a strong relationship between lifestyle and physical, including mental health. The Miller-Smith Lifestyle Assessment Inventory (LSI) is a self-report questionnaire that assesses an individual's lifestyle patterns and behaviours. It is a 20-item instrument that measures six dimensions of lifestyle: health practices, stress management, physical activity, recreational pursuits, social support, and environmental management.

### OBJECTIVE

The aim of this study is to translate and validate with a cross-cultural adaptation of the LSI English version into the Malay language, the national language of Malaysia.

## MATERIALS AND METHODS

**Study design:** Cross-sectional study, online survey

**Study population:**

All nurses in Hospital Banting & Hospital Tengku Ampuan Rahimah, Klang (HTAR).

**Inclusion criteria:**

- Fully trained nurses who had served for at least 6 months
- Able to read and write in English or Malay

**Exclusion criteria:**

- Nurse with pre-existing psychiatric illnesses

**Adaptation process**

The steps of cross-cultural adaptation followed strictly the procedure suggested by Herdman, Fox-Rushby and Badia (1998) and Beaton, Bombardier, Guillemin and Ferraz (2000) involving the assessment of the following types of equivalence: conceptual, item, semantic, idiomatic, operational and measurement.

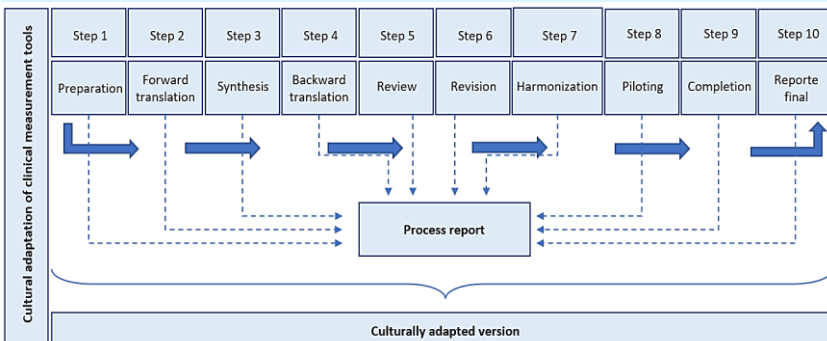


Figure 1: Steps in the translation and cultural adaptation of a clinical measurement tool. Adapted from Beaton et al.

### Validation process

The translated questionnaire was subsequently validated in terms of its content validity and face validity. Statistical validity and dimensionality analysis were completed using exploratory factor analysis (EFA) with the application of parallel analysis and polychoric approach based on the pilot study involving 155 nurses, followed by the reliability analysis using Cronbach's alpha was employed.

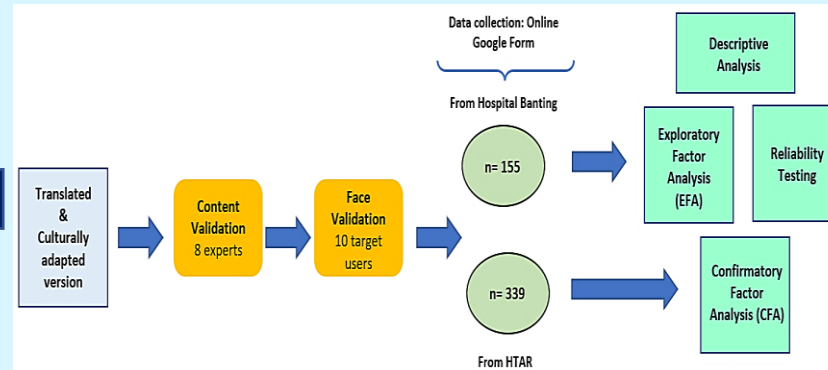


Figure 2: Flowchart of the validation process

## RESULTS AND DISCUSSION

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy for the 20 items was 0.837. The Bartlett's test of sphericity of this study had a significant level of  $p < 0.001$ . Therefore, the data were appropriate to proceed to factor analysis. The content validity index was 0.931, and reliability showed a Cronbach's alpha value of 0.882. All the intraclass correlation coefficients of the items are  $>0.9$ , indicating that the Malay version of LSI is a reliable tool. From statistical validity and dimensionality analysis, the results indicate that the original version of the scale was not suitable for this population. The revised version consists of 13 items in a single dimension: healthy factors.

## REFERENCES

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## RESULTS AND DISCUSSION

Table 1 : Summary of Validity of LSI Malay version (LSI-M)

Number of items & domains (Original)	Content validation	Construct validation	
		EFA	CFA
20 items (6 domains)	All items were validated; some were corrected, achieved adequate CVI and adjusted kappa in terms of clarity, relevancy & consistency.	<ul style="list-style-type: none"> <li>• 4 items removed</li> <li>• Two dimension</li> </ul>	<ul style="list-style-type: none"> <li>• 1 item removed</li> <li>• No collinearity between two constructs, thus the formative construct was correct.</li> <li>• Left one dimension – as unhealthy behaviour construct was removed (<math>p=.553</math>).</li> </ul>

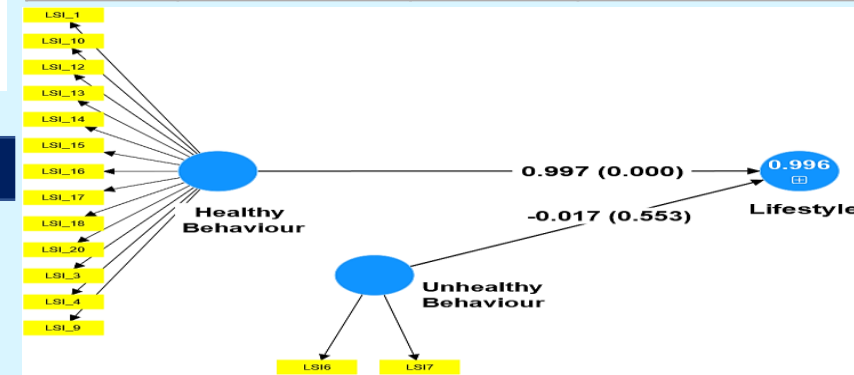


Figure 3 : Path diagram of the two-factor structure of LSI-M

## CONCLUSION

The 13-item Malay version of the LSI is a valid and reliable tool to assess the lifestyle of the nursing population in Malaysia.

## ACKNOWLEDGEMENT

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