Translation, cross-cultural adaptation, and validation of the Big Five Inventory-10 (BFI-10) in the Malay language

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Introduction

The Big Five personality traits can also have an impact on individuals working as healthcare providers. Their personalities can influence how they interact with patients, collaborate with colleagues, manage stress, and perform their job responsibilities. The use of short scales to measure personality traits has become increasingly popular. The Big Five Inventory-10 (BFI-10) is a brief self-report questionnaire with ten items designed to measure the five dimensions of personality: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

Objective

The study aims to translate and validate with a cross-cultural adaptation of the English version into the Malay language among healthcare providers.

Materials And Methods

- **Study design:**
  Cross-sectional study

- **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

- **Sampling technique:**
  Convenient sampling

- **Instrument** :
  Big Five Inventory-10 (BFI-10)

- **Data collection:**
  Online survey to all nurses in the hospital through their "Whatsapp" groups

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.

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 test-retest reliability was employed.
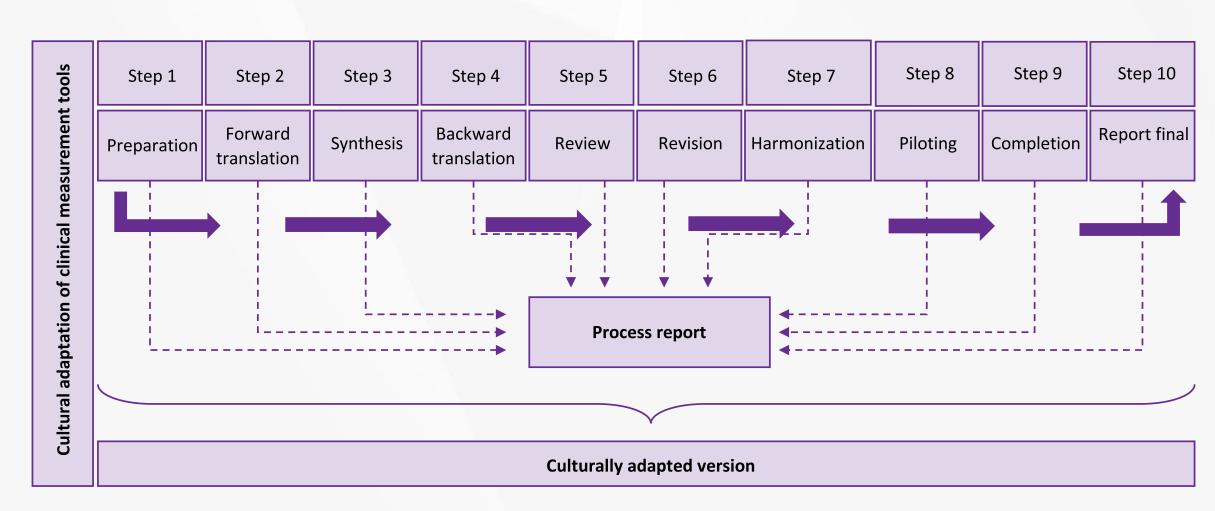

Figure 1: Steps in the translation and cultural adaptation of a clinical measurement tool.
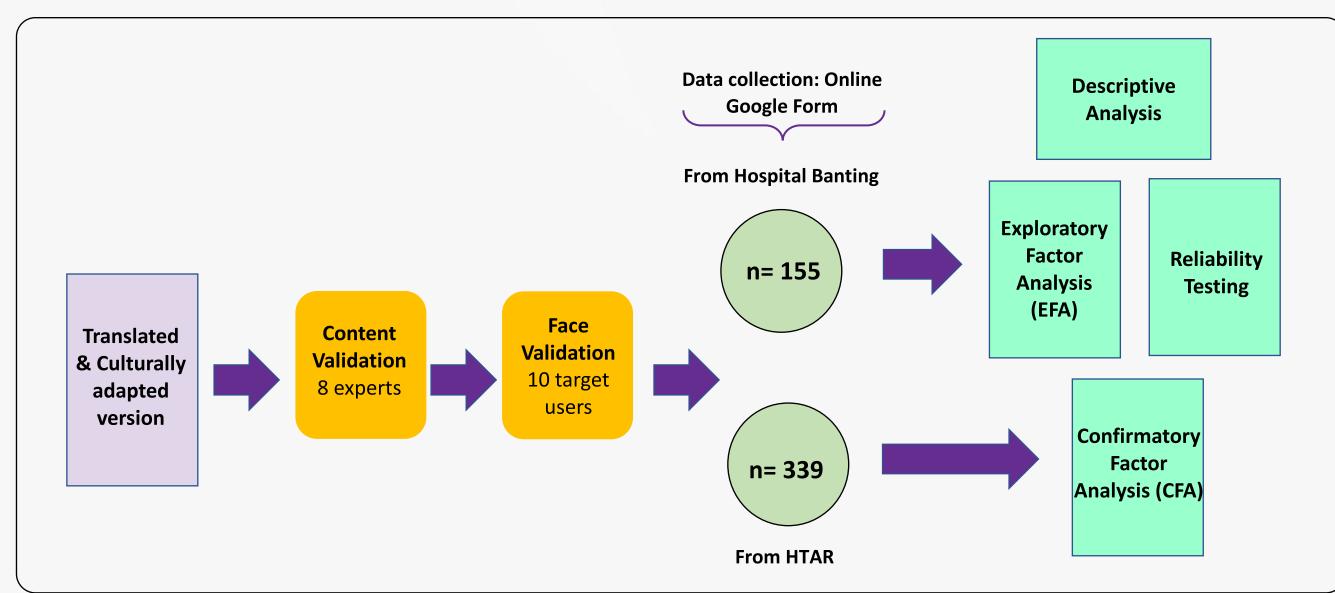Adapted from Beaton et al.

Figure 2: Flowchart of the validation process

Keywords: Big Five Inventory-10, Healthcare providers, Malay, Personality

Acknowledgement

Results And Discussion

The scale content validity index (S-CVI) was 0.975 for clarity, relevancy, and consistency. All the items had an adjusted kappa value ranging from 0.87 to 1.00, indicating excellent agreement. All the intraclass correlation coefficients of the items are >0.9, indicating excellent reliability. From dimensionality analysis, the personality data collected failed to obtain five distinct personality traits, probably due to acquiescence and social desirability response bias.

Table 1: Demographic characteristics of the participants

Variables	EFA ReliabilityTesting (n= 155) n (%)	CFA (n=339) n (%)
Age group (years)		
20-29	28 (18.1)	113 (33.3)
30-39	85 (54.8)	159 (46.9)
40-49	35 (22.6)	54 (15.9)
50-59	7 (4.5)	13 (3.8)
Ethnicity		
Malay	143 (92.3)	286 (84.4)
Chinese	2 (1.3)	5 (1.5)
Indian	5 (3.2)	26 (7.7)
Others	5 (3.2)	22 (6.5)
Marital status		
Single	9 (5.8)	90 (26.5)
Married	143 (92.3)	243 (71.7)
Divorced	1 (0.6)	2 (0.6)
Widowed	2 (1.3)	4 (1.2)
Highest level of nursing education		
Diploma in Nursing	110 (71.0)	239 (70.5)
Post Basic Diploma (Nursing Specialty)	36 (23.2)	90 (26.5)
Bachelor's Degree in nursing	7 (4.5)	9 (2.7)
Postgraduate Certificate (Nursing Specialty)	2 (1.3)	1 (0.3)
Years of experience		
< 1 year	11 (7.1)	6 (1.8)
1 – 5 years	15 (9.7)	95 (28.0)
6 – 10 years	47 (30.3)	116 (34.2)
> 10 years	82 (52.9)	122 (36.0)

EFA, exploratory factor analysis, CFA, confirmatory factor analysis

Table 2: Content validation of BFI 10-M

Items	Clarity		Relevance		Consistency		Results
	I-CVI	Adjusted kappa statistic, k*	I-CVI	Adjusted kappa statistic, k*	I-CVI	Adjusted kappa statistic, k*	
1	1.00	1.00	1.00	1.00	1.00	1.00	Validated
2	1.00	1.00	1.00	1.00	1.00	1.00	Validated
3	1.00	1.00	1.00	1.00	1.00	1.00	Validated
4	1.00	1.00	1.00	1.00	1.00	1.00	Validated
5	0.88	0.87	0.88	0.87	0.88	0.87	Validated
6	1.00	1.00	1.00	1.00	1.00	1.00	Validated
7	1.00	1.00	1.00	1.00	1.00	1.00	Validated
8	1.00	1.00	1.00	1.00	1.00	1.00	Validated
9	1.00	1.00	1.00	1.00	1.00	1.00	Validated
10	0.88	0.87	0.88	0.87	0.88	0.87	Validated
	S-CVI = 0.975		S-CVI = 0.975		S-CVI = 0.975		

I-CVI = item content validity index; S-CVI = scale content validity index

Table 3: Test-Retest Reliability Assessment for BFI 10-M

Items	ICC value	95% confidence interval	
		Lower	Upper
BFI 1	0.962	0.920	0.982
BFI 2	0.972	0.941	0.987
BFI 3	0.991	0.982	0.996
BFI 4	0.955	0.906	0.979
BFI 5	0.948	0.891	0.975
BFI 6	0.951	0.896	0.976
BFI 7	0.931	0.856	0.967
BFI 8	0.919	0.831	0.961
BFI 9	0.909	0.809	0.957
BFI 10	0.981	0.961	0.991

ICC: intraclass correlation coefficients

Conclusions

The Malay short version of the BFI-10 is a valid and reliable tool to assess the personality of healthcare providers in Malaysia. However, it is advisable to use the longer version of BFI in the case of personality-focused research.

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