

Translation and Content Validation of the Dementia Communication Difficulties Scale (DCDS) in Bahasa Melayu

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ABSTRACT

INTRODUCTION: The impact of communication challenges on dementia patients' quality of life is profound and multifaceted. Originally designed in the English language, the Dementia Communication Difficulties Scale (DCDS) required translation and content validation to suit the diverse linguistic and cultural landscape of Malaysia, where culturally appropriate assessment tools are essential. **MATERIALS AND METHODS:** The translation of DCDS into Bahasa Melayu was done using a careful, methodical approach consisting of five stages: (1) forward translation, (2) synthesis, (3) backward translation, (4) expert review, and (5) cognitive debriefing. Cultural adaptation was done by a multidisciplinary team of professionals. The Content Validity Index (CVI) and Content Validity Ratio (CVR) were used by medical professionals to confirm and measure the content validity. **RESULTS:** The translated DCDS is evidenced to have excellent content validity by achieving an I-CVI score of 0.95 and 0.96 on relevance and clarity, respectively. The translation and its linguistic and cultural updates ensured the DCDS is suitable in a clinical setting and appropriately relevant for the multicultural Malaysian population. **CONCLUSION:** The DCDS in Bahasa Melayu has content validity in assessing communication problems among dementia patients in Malaysia. The DCDS has the potential to improve the quality of care and outcomes for patients, yet its clinical applicability is limited, and more psychometric assessments (reliability and construct validity) are needed to establish its true value.

Keywords

Dementia, communication difficulties, translation, content validation, cultural adaptation.

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INTRODUCTION

Expressing needs and understanding complex conversations are significant challenges for aging individuals, particularly those living with dementia. Research has shown that these communication difficulties have a negative impact on patients' social, psychological, and physical well-being.^{1,2} Communication difficulties involving speaking, understanding, reading, and writing have been shown to result in severe depression, loneliness, and social isolation.^{1,2} Several factors contribute to communication difficulties in older adults, including normal aging, loss

of cognitive function, oral frailty, and reduced oral muscular strength.^{3,4} Studies have demonstrated that communication difficulties, particularly in Alzheimer's disease, can begin to occur long before problems with episodic memory appear, highlighting the importance of early intervention.^{5,6}

Numerous intervention strategies have been investigated, including speech therapy, cognitive intervention, and the use of hearing aids, with varying degrees of accessibility and effectiveness.^{1,3} The

Dementia Communication Difficulties Scale (DCDS) was developed to help caregivers assess and manage communication challenges in dementia patients more effectively. However, many non-native English-speaking countries, such as Malaysia, have not yet adopted the DCDS and require a culturally appropriate version.⁹

This study aims to translate and validate the DCDS into Bahasa Melayu using a rigorous five-step cross-cultural adaptation process, followed by content validity evaluation. The study also examines potential cultural, sociolinguistic, and cross-linguistic challenges specific to the Malaysian context. The adaptation process consists of five steps: (1) forward translation, (2) synthesis, (3) backward translation, (4) expert review, and (5) cognitive debriefing. These steps are designed to produce a translated instrument that is free from linguistic errors and cultural biases.^{5,6}

MATERIAL AND METHODS

This study obtained ethical approval from the Universiti Putra Malaysia Ethics Committee for Research Involving Human Subjects (JKEUPM-2024-311). The linguistic and content validity of the translated tools was evaluated using established guidelines for the cross-cultural adaptation of quality-of-life instruments.⁵ A five-step process was implemented to translate and adapt the DCDS into Bahasa Melayu, followed by a content validation process.

TRANSLATION AND CULTURAL ADAPTATION

Step 1 -2: forward translation and synthesis

The original English DCDS was translated into Bahasa Melayu by two independent, bilingual native speakers: a speech therapist with a clinical background and a non-medical professional. While their initial versions presented minor linguistic variations, particularly regarding the phrasing of communication difficulties, the researchers harmonized the texts to balance conceptual fidelity with linguistic appropriateness.

This synthesis process resolved the discrepancies, yielding a unified draft.

Step 3: Backward Translation

During the back-translation phase, two independent, bilingual native Bahasa Melayu speakers translated the synthesized draft back into English. A multidisciplinary team then compared these versions against the original DCDS to identify any conceptual drifts. This review revealed three minor discrepancies, specifically regarding the colloquial wording for 'off-topic/ramble' and 'thingy.' The team iteratively revised these items to optimize semantic equivalence, ultimately achieving full alignment with the original instrument.

Step 4: Expert Review

A multidisciplinary team of seven clinicians (three speech therapists, two occupational therapists, one physiotherapist, and one audiologist, representing Malay, Chinese, and Indian ethnicities) reviewed the revised Bahasa Melayu version via teleconference. They discussed and recorded feedback on meaning, clarity, and cultural appropriateness, leading to a third revised version. The team identified five items needing cultural tweaks (e.g. Bendah alah) and clarified two ambiguous terms, resulting in a revised version.

Step 5: Cognitive Debriefing

Nine caregivers of dementia patients (three from each major Malaysian ethnicity: Malay, Chinese, and Indian; aged 35–46) participated in face-to-face interviews. Each spent 10–15 minutes completing the questionnaire and providing feedback on clarity, relevance, and cultural fit. Insights from these interviews were used to finalize the Bahasa Melayu DCDS. Caregivers reported high clarity (8/9 rated all items understandable) but suggested minor adjustments for two items (e.g., simplifying phrasing for non-Malay speakers). No items were deemed irrelevant; all feedback was incorporated into the final version.

Feedback Analysis: From Step 4 and Step 5

Feedback from the clinicians' review and cognitive debriefing was analyzed using consensus methods. A multidisciplinary team (including occupational therapists, speech and language therapists, audiologists, and caregivers) consolidated suggestions, which informed iterative revisions such as enhancing cultural applicability, modifying phrases, and clarifying ambiguous terms (a total of 9 revisions) as listed below in Table I.

Table I. Results of Cognitive Debriefing

Original Term/Phrase	Identified Issue	Suggested Improvement/Outcome
Berkembang	Associated with "progressive dementia," Latest guidelines recommend	Retain
Tidak masuk akal	positive, respectful words for caregivers; seen as negative.	Use alternatives like "bertukar-tukar," "lari daripada topic," or "keluar daripada topic" to describe off-topic or illogical speech empathetically.
Percakapan terlalu sedikit untuk dinilai	Describes insufficient conversation for evaluation.	Minor change on wording Suggestion : BERCAKAP TERLALU SEDIKIT UNTUK SAYA NILAI
Mengulangi percakapan apa orang lain katakan	Refers to echoing what others say. Supposed to be Refers to repeating recently said conversations.	No major change; focus on respectful context. Suggestion : mengulangi sesuatu apa yang orang lain telah perkatakan
Bendah alah	Not usual usage; consider Borneo regional dialects.	Adapt for cultural relevance, especially for Borneo audiences, to improve relatability Suggestion : Apa benda ?
Abstrak	Lacks examples, making it hard to understand.	Provide concrete examples to explain abstract concepts.
Kehilangan jejak	All participants understood it; possible reference to "jungle trek" for context.	Retain as it's comprehensible; consider contextual examples like "jungle trek" for illustration.
Bunyi	Refers to sound; may need clarification.	Replace or clarify with "sebutan" (pronunciation) for precision. Replaced
Item 13- Example	Provide the root words	Mengangguk-angguk, Senyumam-senyum Gelisah- bergelisah

CONTENT VALIDITY PROCESS

Content validation was conducted to assess the relevance, clarity, and necessity of items in the Bahasa Melayu DCDS after five step translation process.

STEPS FOR CONTENT VALIDATION

- Translation and Cultural Adaptation:** The five-step process described above was completed.
- Expert Panel Review for Content Validity Index (CVI):** A panel of 12 medical practitioners rated each item's relevance and clarity on a 4-point scale.
- Item-Level Content Validity Index (I-CVI):** The I-CVI is calculated as the proportion of experts who rate an item as relevant or clear. Specifically, it is the proportion of experts who rate an item as either "quite relevant/clear" (3) or "highly relevant/clear" (4) on a 4-point scale. This means that the I-CVI reflects the consensus among experts regarding the relevance and clarity of each item, rather than being based on the opinion of a single expert.
- Scale-Level Content Validity Index (S-CVI):** The S-CVI is the average of all I-CVIs across the items in the scale. It provides an overall measure of the content validity of the entire scale, indicating how well the items collectively meet the criteria for relevance and clarity as judged by the expert panel.
- Necessity Assessment for Content Validity Ratio (CVR):** A separate panel of 10 experts rated each item's necessity. CVR was calculated using the formula: $CVR = (n_e - N/2) / (N/2)$, where n_e is the number of experts rating the item as "necessary," and N is the total number of experts.
- Item Evaluation:** Items with low agreement in relevance, clarity, or necessity were reviewed, modified, or removed based on expert feedback.
- Cultural Re-alignment:** Specific items were adapted for Malaysian contexts (e.g., replacing idioms).
- Finalization:** The final Bahasa Melayu DCDS incorporated all feedback from experts and caregivers.

RESULTS

Linguistic Validation

Several major changes in the adaptation of the Dementia Communication Difficulties Scale (DCDS) in the translation and cultural adaptation to the Malay Language of Malaysia were made for cultural and contextual relevance and clarity purposes. The adjustments made involved the cultural idioms, terminology, and articulation.

Regional candidates for the expression, “Rome wasn’t built in a day”, include the phrase, “Katak Di Bawah Tempurung”. Also, the phrase “Their use of pronouns (e.g., 'he', 'she', and 'they') is poor”, from which the term “poor” was substituted with “weak”, was intended to eliminate any negative connotations. The phrase “bahasa mudah” was replaced with “ayat mudah”. “Menyimpang” was corrected to “bertukar-tukar”, “lari daripada topik”, “keluar daripada topik”, and “tukar” from which a plural or locative form is used to indicate some of the synonyms for the term “menyimpang” on a lesser scale. Minimal changes involved two words and two phrases, in addition to one word with several alternatives. The changes made to the DCDS scale were necessary to eliminate all cultural and linguistic prejudices to enhance the understanding and flexibility of the scale for the users.

Table II. Outcome of Linguistic Validation

Change Category	Original Phrase/Word	Modified Phrase/Word	Change Count
Cultural Idioms	"Rome wasn't built in a day"	"Katak Di Bawah Tempurung"	1 phrase
Terminology Adjustments	"poor" in "Their use of pronouns..."	"weak"	1 word
Language and Clarity	"bahasa mudah"	"ayat mudah"	1 phrase
Language and Clarity	"menyimpang"	Suggested alternatives: "bertukar-tukar," "lari daripada topik," "keluar daripada topik"	1 word with multiple suggestions

Outcome of Content Validity Process

A total of twelve and ten medical practitioners assessed the CVI of the translated Bahasa Melayu DCDS for relevance and clarity, and CVR for the necessity of questions, respectively. The practitioners included

medical doctors from a medical clinic, occupational and physiotherapists, optometrists, speech therapists, a pharmacist, and a dentist. The majority of DCDS questions demonstrated a high degree of content validity regarding relevance and clarity. I-CVI scores ranged from 0.83 to 1.00 (average S-CVI=0.92), indicating excellent relevance and clarity. CVR scores ranged from 0.60 to 1.00, with all items meeting the threshold for necessity (no items discarded).

Table III: Summary of content validity analysis for questionnaires

Item	Relevance (Number of Experts=12)		Clarity (Number of Experts=12)		CVR*** (Number of Experts=10)
	I-CVI**a	κ**a	I-CVI**a	κ**a	
1. They have difficulty coming up with words.	1.00	1.00	1.00	1.00	1.00
2. They are likely to repeat things that they have just said	0.92	0.91	0.92	0.90	1.00
3. They are likely to repeat things that other people have said	0.92	0.91	0.92	0.90	1.00
4. They tend to digress / to go off on a tangent	1.00	1.00	1.00	1.00	1.00
5. They use filler words (e.g. “thing”, “whatsit”) instead of content words (e.g. “pen”, “cooker”)	1.00	1.00	0.83	0.80	1.00
6. They have difficulty understanding simple language	1.00	1.00	1.00	1.00	1.00
7. They have difficulty understanding abstract language (e.g. “Rome wasn’t built in a day”)	1.00	1.00	0.92	0.90	0.80
8. They have problems understanding even single words	1.00	1.00	1.00	1.00	0.80
9. They lose track of what they are saying	1.00	1.00	1.00	1.00	1.00
10. They are difficult to understand	0.83	0.81	0.92	0.90	0.60
11. Their use of pronouns (e.g. “he”, “she”, “they”) is poor	0.83	0.81	1.00	1.00	1.00
12. Their speech makes little sense because they use the wrong words or sounds	0.92	0.92	1.00	1.00	1.00
13. They communicate nonverbally (e.g. nodding, smiling, agitation, striking-out)	0.92	0.91	0.92	0.90	1.00

DISCUSSION

The integrity of the original DCDS was fully maintained during its translation into Bahasa Melayu through a systematic, five-step adaptation process.^{5,6}

Incorporating forward-backward translation, expert reviews, pretesting, and cognitive debriefing ensured the final instrument is both culturally meaningful and methodologically sound for Malaysian dementia caregivers.^{5,6} The content validation phase confirmed that the items were both relevant and essential. This was reflected in the high Item-Content Validity Index (I-CVI) scores, which averaged 0.92, alongside strong Content Validity Ratio (CVR) values. Furthermore, the feedback indicated that the vast majority of items were highly comprehensible^{7,8}. Idiomatic phrasing was adjusted to maximize local relatability, following best-practice protocols for maintaining cross-cultural equivalence.^{5,6} The multidisciplinary expert panel, which included members from diverse ethnic backgrounds, addressed the varied communication challenges present in Malaysia's multiethnic population. This approach was consistent with the adaptation of the Montreal Cognitive Assessment into Malay (MoCA-BM).¹⁰ During cognitive debriefing, caregivers validated the practical usability of the tool while flagging a few minor linguistic ambiguities. We addressed these issues through iterative modifications, reflecting the standard feedback-driven refinement loops common in cross-cultural instrument validation.¹¹ Limitations of the study include the small sample size used in cognitive debriefing (n=9) and the absence of reliability testing, both of which should be addressed in future psychometric evaluation.^{1,3}

CONCLUSION

This adapted Bahasa Melayu DCDS represents a vital tool for assessing dementia-related communication difficulties in Malaysia's multicultural context, potentially improving clinical interventions and caregiver support. Future research should prioritize larger-scale psychometric testing, including reliability and validity assessments, to enhance its applicability across diverse populations and facilitate broader adoption in Southeast Asian healthcare settings.

INSTITUTIONAL REVIEW BOARD (ETHICS COMMITTEE)

Approval for ethics was obtained from the Universiti Putra Malaysia Ethics Committee for Research involving Human Subjects (JKEUPM-2024-311). Linguistic and Content Validation of the Stroke Impact Scale (SIS) 3.0 (Khaw et al., 2021) in Three Languages (HA Ainuddin, 2023) was used as references.

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