

1 of 1

[Export](#) [Download](#) [Print](#) [E-mail](#) [Save to PDF](#) [Add to List](#) [More... >](#)
[Full Text](#) [View at Publisher](#)

Journal of Audiology and Otology
Volume 23, Issue 3, 1 July 2019, Pages 129-134

Translation, adaptation and cross-cultural validation of hearing handicap inventory for adult in Malay language (Article) [\(Open Access\)](#)

Zam, T.Z.H.T.Z., Dzulkarnain, A.A.A. [✉](#), Rahmat, S., Jusoh, M. [👤](#)

Department of Audiology and Speech-Language Pathology, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

Abstract

[View references \(28\)](#)

Background and Objectives: Since a self-reported questionnaire for hearing-impaired listeners is not available in Malay language yet, it is important to develop or translate any available existing questionnaires. The aim of this study was to translate, adapt and validate the Hearing Handicap Inventory for Adult (HHIA) to be used by the audiologist among the hearing-impaired population in Malaysia. **Subjects and Methods:** The HHIA was translated to Malay language using forward-backward translation techniques by four-panellists (two for each level). The translated HHIA was then reconciled and harmonized for cultural aspects and content of the questionnaire by the researchers and two expert panels before being pilot-tested among 10 hearing-impaired patients. Questionnaire validation was conducted among 80 adults with a hearing loss to calculate for Cronbach's α (internal reliability), Spearman's correlation (inter-item correlation) and factor analysis. **Results:** None of the translated items were removed from the scale. The overall Cronbach's α was 0.964; 0.927 and 0.934 for both social and emotional subscales, respectively. The factor analysis (force-concept inventory) demonstrated a two-structure with a strong correlation between all items in either component 1 or 2, that resembled the original scale. The Mann-Whitney test revealed significantly higher scores for those adults with a hearing loss than those adults with normal hearing. **Conclusions:** The Malay HHIA has been successfully translated and validated for the purpose of determining the psychosocial aspects of adults with hearing loss in the local population. © 2019 The Korean Audiological Society and Korean Otological Society.

Author keywords

[Hearing loss](#) [Malaysia](#) [Psychosocial](#) [Questionnaire](#)

Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia	RIGS 16-125-0289, RIGS 15-035-0035	IIUM
Foundation for Fundamental Research on Matter	FRGS15-236-0477	FOM
Ministry of Higher Education, Malaysia		MOHE

Funding text

The authors wish to acknowledge the Ministry of Higher Education of Malaysia through the Fundamental Research Grant scheme (FRGS) (FRGS15-236-0477) and the International Islamic University Malaysia through the Research Initiative Grant Scheme (RIGS) (RIGS 15-035-0035 and RIGS 16-125-0289) for funding this research. We also wish to acknowledge Global Hearing Precision and Earstic Hearing and Balance centre for their contributions in recruiting study participants. Special thanks to Swiss Medicare Sdn Bhd for their contributions in providing hearing aids in this study.

Metrics [🔗](#)



PlumX Metrics [▼](#)

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)
[Set citation feed >](#)

Related documents

Psychometric properties of the hearing handicap questionnaire: a Kannada (South-Indian) translation

Thammaiah, S. , Manchaiah, V. , Easwar, V. (2017) *International Journal of Audiology*

Cross-cultural adaptation of an Arabic version of the 10-item hearing handicap inventory

Weinstein, B.E. , Rasheedy, D. , Taha, H.M. (2015) *International Journal of Audiology*

Hearing handicap in adults with unilateral deafness and bilateral hearing loss

Iwasaki, S. , Sano, H. , Nishio, S. (2013) *Otology and Neurotology*




[View all related documents based on references](#)

[Find more related documents in Scopus based on:](#)

[Authors >](#) [Keywords >](#)

References (28)

[View in search results format >](#)

All [Export](#)  [Print](#)  [E-mail](#)  [Save to PDF](#) [Create bibliography](#)

-
- 1 Lynn, M.R.
Determination and quantification of content validity
(1986) *Nursing Research*, 35 (6), pp. 382-386. Cited 2010 times.
[View at Publisher](#)
-
- 2 Aiello, C.P., de Lima, I.I., Ferrari, D.V.
Validity and reliability of the hearing handicap inventory for adults [\(Open Access\)](#)
(2011) *Brazilian Journal of Otorhinolaryngology*, 77 (4), pp. 432-438. Cited 19 times.
<http://www.scielo.br/pdf/bjor/v77n4/v77n4a05.pdf>
doi: 10.1590/S1808-86942011000400005
[View at Publisher](#)
-
- 3 Ciorba, A., Bianchini, C., Pelucchi, S., Pastore, A.
The impact of hearing loss on the quality of life of elderly adults [\(Open Access\)](#)
(2012) *Clinical Interventions in Aging*, 7, pp. 159-163. Cited 153 times.
<http://www.dovepress.com/getfile.php?fileID=12983>
doi: 10.2147/CIA.S26059
[View at Publisher](#)
-
- 4 Dalton, D.S., Cruickshanks, K.J., Klein, B.E.K., Klein, R., Wiley, T.L., Nondahl, D.M.
The Impact of Hearing Loss on Quality of Life in Older Adults [\(Open Access\)](#)
(2003) *Gerontologist*, 43 (5), pp. 661-668. Cited 540 times.
<http://gerontologist.oxfordjournals.org/>
doi: 10.1093/geront/43.5.661
[View at Publisher](#)
-
- 5 Cox, R.M., Alexander, G.C.
The International Outcome Inventory for Hearing Aids (IOI-HA): Psychometric properties of the english version
(2002) *International Journal of Audiology*, 41 (1), pp. 30-35. Cited 179 times.
doi: 10.3109/14992020209101309
[View at Publisher](#)
-
- 6 Cox, R.M., Alexander, G.C., Beyer, C.M.
Norms for the International Outcome Inventory for Hearing Aids
(2003) *Journal of the American Academy of Audiology*, 14 (8), pp. 403-413. Cited 76 times.
<http://www.ingentaconnect.com/content/aaa/jaaa/2003/00000014/00000008/art00002>
-
- 7 Newman, C.W., Weinstein, B.E., Jacobson, G.P., Hug, G.A.
The hearing handicap inventory for adults: Psychometric adequacy and audiometric correlates
(1990) *Ear and Hearing*, 11 (6), pp. 430-433. Cited 247 times.
doi: 10.1097/00003446-199012000-00004
[View at Publisher](#)
-

- 8 Ventry, I.M., Weinstein, B.E.
The hearing handicap inventory for the elderly: A new tool
(1982) *Ear and Hearing*, 3 (3), pp. 128-134. Cited 555 times.
doi: 10.1097/00003446-198205000-00006
[View at Publisher](#)
-
- 9 Berkanovic, E.
The effect of inadequate language translation on Hispanics' responses to health surveys
(1980) *American Journal of Public Health*, 70 (12), pp. 1273-1276. Cited 135 times.
doi: 10.2105/AJPH.70.12.1273
[View at Publisher](#)
-
- 10 Guillemin, F., Bombardier, C., Beaton, D.
Cross-cultural adaptation of health-related quality of life measures: Literature review and proposed guidelines
(1993) *Journal of Clinical Epidemiology*, 46 (12), pp. 1417-1432. Cited 3021 times.
doi: 10.1016/0895-4356(93)90142-N
[View at Publisher](#)
-
- 11 Monzani, D., Genovese, E., Palma, S., Rovatti, V., Borgonzoni, M., Martini, A.
Measuring the psychosocial consequences of hearing loss in a working adult population: focus on validity and reliability of the Italian translation of the hearing handicap inventory.
(2007) *Acta otorhinolaryngologica Italica : organo ufficiale della Società italiana di otorinolaringologia e chirurgia cervico-facciale*, 27 (4), pp. 186-191. Cited 18 times.
-
- 12 De Araújo, P.G.V., Mondelli, M.F.C.G., Lauris, J.R.P., Richiéri-Costa, A., Feniman, M.R.
Assessment of the Auditory Handicap in adults with unilateral hearing loss
(Open Access)
(2010) *Brazilian Journal of Otorhinolaryngology*, 76 (3), pp. 378-383. Cited 12 times.
<http://www.journals.elsevier.com/brazilian-journal-of-otorhinolaryngology/>
doi: 10.1590/S1808-86942010000300018
[View at Publisher](#)
-
- 13 Sato, M., Ogawa, K., Inoue, Y., Masuda, M.
Adaptation of Japanese version of the Hearing Handicap Inventory for Adults (HHIA)
(Open Access)
(2004) *Journal of Otolaryngology of Japan*, 107 (5), pp. 489-493. Cited 5 times.
<https://www.jstage.jst.go.jp/browse/jibiinkoka>
doi: 10.3950/jibiinkoka.107.489
[View at Publisher](#)
-
- 14 Brislin, R.W.
Research instruments
(1986) *Field Methods in Cross-Cultural Research*, pp. 137-164. Cited 1902 times.
In: Lonner WJ, Berry JW, editors. 1st ed. Thousand Oaks, CA: SAGE Publications, Inc
-

- 15 Jones, P.S., Lee, J.W., Phillips, L.R., Zhang, X.E., Jaceldo, K.B.
An adaptation of Brislin's translation model for cross-cultural research

(2001) *Nursing Research*, 50 (5), pp. 300-304. Cited 302 times.
<http://journals.lww.com/nursingresearchonline>
doi: 10.1097/00006199-200109000-00008

View at Publisher
-
- 16 Zam, T.Z., Dzulkarnain, A.A., Rahmat, S., Jusoh, M.
Translation and adaptation of hearing handicap inventory for adult (HHIA) into Malay language: a pilot study
(2017) *Int J Health Sci*, 1, pp. 92-100.
-
- 17 Kline, R.B., Santor, D.A.
Principles & practice of structural equation modelling
(1999) *Can Psychol*, 40, p. 381. Cited 36 times.
-
- 18 Watson, R., Thompson, D.R.
Use of factor analysis in Journal of Advanced Nursing: Literature review

(2006) *Journal of Advanced Nursing*, 55 (3), pp. 330-341. Cited 103 times.
doi: 10.1111/j.1365-2648.2006.03915.x

View at Publisher
-
- 19 Horn, J.L.
A rationale and test for the number of factors in factor analysis

(1965) *Psychometrika*, 30 (2), pp. 179-185. Cited 3332 times.
doi: 10.1007/BF02289447

View at Publisher
-
- 20 Bardid, F., Huyben, F., Deconinck, F.J.A., De Martelaer, K., Seghers, J., Lenoir, M.
Convergent and divergent validity between the KTK and MOT 4-6 motor tests in early childhood

(2016) *Adapted Physical Activity Quarterly*, 33 (1), pp. 33-47. Cited 8 times.
<http://journals.humankinetics.com/AfcStyle/DocumentDownload.cfm?DType=DocumentItem&Document=03%5FBardid%20APAQ%5F2014%2D0228%5F33%2D47%2Epdf>
doi: 10.1123/APAQ.2015-0050

View at Publisher
-
- 21 Henseler, J., Ringle, C.M., Sarstedt, M.
A new criterion for assessing discriminant validity in variance-based structural equation modeling (Open Access)

(2014) *Journal of the Academy of Marketing Science*, 43 (1), pp. 115-135. Cited 1571 times.
<http://www.springer.com/business/journal/11747>
doi: 10.1007/s11747-014-0403-8

View at Publisher
-
- 22 Sindhusake, D., Mitchell, P., Smith, W., Golding, M., Newall, P., Hartley, D., Rubin, G.
Validation of self-reported hearing loss. The blue mountainshearing study (Open Access)

(2001) *International Journal of Epidemiology*, 30 (6), pp. 1371-1378. Cited 236 times.
<http://ije.oxfordjournals.org/>
doi: 10.1093/ije/30.6.1371

View at Publisher
-

- 23 Olusanya, B.
Self-reported outcomes of aural rehabilitation in a developing country

(2004) *International Journal of Audiology*, 43 (10), pp. 563-571. Cited 25 times.
doi: 10.1080/14992020400050072

[View at Publisher](#)

- 24 Taylor, B.
(2007) *Self-report assessment of hearing aid outcome-an overview*. Cited 5 times.
Hearing Aids-Adults [cited 2017 Jun 20]
http://www.audiologyonline.com/articles/article_detail.asp?article_id=1888

- 25 Thammaiah, S., Manchaiah, V., Easwar, V., Krishna, R.
Translation and adaptation of five English language self-report health measures to South Indian Kannada language
(2016) *Audiol Res*, 6, p. 153. Cited 8 times.

- 26 Halai, A.D., Woollams, A.M., Lambon Ralph, M.A.
Using principal component analysis to capture individual differences within a unified neuropsychological model of chronic post-stroke aphasia: Revealing the unique neural correlates of speech fluency, phonology and semantics ([Open Access](#))

(2017) *Cortex*, 86, pp. 275-289. Cited 31 times.

<http://www.cortex-online.org/>
doi: 10.1016/j.cortex.2016.04.016

[View at Publisher](#)

- 27 Greenwald, A.G., Banaji, M.R.
Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes

(1995) *Psychological Review*, 102 (1), pp. 4-27. Cited 2951 times.

doi: 10.1037/0033-295X.102.1.4


[View at Publisher](#)

- 28 Roux, P., Christophe, A., Passerieux, C.
The emotional paradox: Dissociation between explicit and implicit processing of emotional prosody in schizophrenia

(2010) *Neuropsychologia*, 48 (12), pp. 3642-3649. Cited 35 times.

www.elsevier.com/locate/neuropsychologia
doi: 10.1016/j.neuropsychologia.2010.08.021

[View at Publisher](#)

 Dzulkarnain, A.A.A.; Department of Audiology and Speech-Language Pathology, Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, Kuantan, Pahang, Malaysia; email:ahmadaidil@iiu.edu.my

© Copyright 2019 Elsevier B.V., All rights reserved.

