



# CROSS CULTURE ADAPTATION AND VALIDATION OF DYSPHAGIA HANDICAP INDEX IN BANGLADESH

By

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**Title: “Cross culture adaptation and validation of Dysphagia Handicap Index in Bangladesh”**

**Aim of the study:** Linguistic validation and cross- culture adaptation and of Dysphagia Handicap Index-DHI into Bangla version in the context of Bangladesh.

**Methodology:** The cross-sectional adaptation study design was chosen and which was done by Beaton’s guideline as a most recommended adaptation protocol for validation and adaptation of DHI. In this study, 107 (50 participants with dysphagia, 50 healthy volunteer and 7 experts) samples were assigned purposively from CRP. Questionnaire survey technique was applied to collect the data from the study respondents. Data was analyzed by descriptive statistical analysis (Statistical Package for the Social Sciences= SPSS) method.

**Result:** DHI-Ba version is adapted as valid patient perceived tool to assess the Bangla speaking dysphagia patient.

**Conclusion:** The results showed a clear explanation of linguistic validation and cross culture adaptation process of DHI. And statistical testing showed a significant reliability of DHI-Ba as a self-assessment tool for describing the impact on individuals’ life having dysphagia. It also has been shown to be an easy and less time consuming tool for clinician to identify the patients suffering from swallowing problem. Most importantly it must be a useful tool for SLTs to assess the dysphagia level and set up an intervention goal to ensure quality service for the individual’s having dysphagia.

## **Limitations**

There were some limitations in this study. These are:

Investigator could not manage enough samples due to time limitation. Though the investigator tried to comprehend the participants about the terms and conditions they need to follow. But it was really hard to get available information’s from the participants, especially who were illiterate.

One potential limitation of the study may be considered the fact that patient sample was recruited from only two branches of CRP (Savar and Mirpur CRP). This could have significantly influenced the results of the evaluation of understanding the fact and difficulty in cognitive debriefing, because there are some cultural variations among the regions of the country.

### **Recommendations**

When the research was finished the investigator would like to propose some recommendation.

This tool has been established in Bangladeshi context (Bangla version), so in further study no need to do any Bangla translation. It is an easy and less time consuming tool for clinicians to understand the manner in which patients perceive their dysphagia problem. So clinicians can use the tool as a diagnostic tool for dysphagia patient. In future studies the DHI-Ba version can be used as a screening tool for the individuals having the chance of developing dysphagia in old age.

DHI-Ba can be further used in broad range of patient participants in other culture and region in Bangladesh.

### **References**

- Ahmed, S., Berzon, R., Revicki, D., Lenderking, W., Moinpour, C., Basch, E., ... Wu, A. (2012). The Use of Patient-reported Outcomes (PRO) Within Comparative Effectiveness Research: Implications for Clinical Practice and Health Care Policy. *Medical Care*, 50(12), 1060-1070. doi:10.1097/mlr.0b013e318268aaff
- Asadollahpour, F., Baghban, K., & Asadi, M. (2015). Validity and Reliability of the Persian Version of the Dysphagia Handicap Index (DHI). *Iranian journal of otorhinolaryngology*, 27(80), 185–191. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4461841/>
- Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. (2017). General, Target, and Accessible Population: Demystifying the Concepts for Effective Sampling. *The Qualitative Report*, 22(6), 1607-1621. Retrieved from <https://nsuworks.nova.edu/tqr/vol22/iss6/9>
- Bakhtuyari, J., Salmani, M., Noruzi, R., Sarraf, P., Barzegar, E., & Mirmohammadkhani, M. (2018). Translation, Cross-Cultural Adaptation, Validation and Reliability of the Northwestern Dysphagia Patient Check Sheet (NDPCS) in Iran. *Iranian Journal of Otorhinolaryngology*, 30(2), 97-101. DOI 10.22038/ijorl.2018.27086.1888
- Barzegar-Bafrooei, E., Bakhtiary, J., Khatoonabadi, A. R., Fatehi, F., Maroufizadeh, S., & Fathali, M. (2016). Validation of the Persian version of the dysphagia handicap index in patients with neurological disorders. *Iranian journal of neurology*, 15(3), 128–132. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5027147/>

- Beaton, D., Bombardier, C., Guillemin, F., & Ferraz, M. (2000). Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. *Spine*, 25(24), 3186-3191. doi: 10.1097/00007632-200012150-00014
- Bogaardt, H. C. A., Speyer, R., Baijens, L. W. J., & Fokkens, W. J. (2009). Cross-cultural adaptation and validation of the Dutch version of SWAL-QoL. *Dysphagia*, 24(1), 66-70. DOI 10.1007/s00455-008-9174-z
- Brans, E., de Graaf, J., Munzebrock, A., Bessem, B., & Reininga, I. (2016). Cross-Cultural Adaptation and Validation of the Dutch Version of the Hip and Groin Outcome Score (HAGOS-NL). *PLOS ONE*, 11(1), e0148119. doi: 10.1371/journal.pone.0148119
- Cabre, M., Serra-Prat, M., Palomera, E., Almirall, J., Pallares, R., & Clave, P. (2009). Prevalence and prognostic implications of dysphagia in elderly patients with pneumonia. *Age And Ageing*, 39(1), 39-45. doi: 10.1093/ageing/afp100
- Chen, A. Y., Frankowski, R., Bishop-Leone, J., Hebert, T., Leyk, S., Lewin, J., & Goepfert, H. (2001). The development and validation of a dysphagia-specific quality-of-life questionnaire for patients with head and neck cancer: the MD Anderson dysphagia inventory. *Archives of Otolaryngology-Head & Neck Surgery*, 127(7), 870-876. Retrieved from <https://jamanetwork.com/journals/jamaotolaryngology/article-abstract/482382>
- Connections, L. (2019). *Understanding Linguistic Validation | Language Connections*. <https://www.languageconnections.com/blog/linguistic-validation/>
- Crp-bangladesh.org. (2019). *CRP - Centre for the Rehabilitation of the Paralyzed | CRP BANGLADESH*. Retrieved from <https://www.crp-bangladesh.org/>. Retrieved from 6 Jan. 2020.
- Davis, L. (2007). Quality of Life Issues Related to Dysphagia. *Topics In Geriatric Rehabilitation*, 23(4), 352-365. doi: 10.1097/01.tgr.0000299163.46655.48
- Dhippayom, J., Trevittaya, P., & Cheng, A. (2018). Cross-Cultural Adaptation, Validity, and Reliability of the Patient-Rated Michigan Hand Outcomes Questionnaire for Thai Patients. *Occupational Therapy International*, 2018, 1-6. doi: 10.1155/2018/8319875
- Doody, O., & Doody, C. (2015). Conducting a pilot study: case study of a novice researcher. *British Journal of Nursing*, 24(21), 1074-1078. doi: 10.12968/bjon.2015.24.21.1074
- Eslick, G. D., & Talley, N. J. (2008). Dysphagia: epidemiology, risk factors and impact on quality of life - a population-based study. *Alimentary Pharmacology & Therapeutics*, 27(10), 971-979. doi: 10.1111/j.1365-2036.2008.03664.x
- Farahat, M., Malki, K. H., Mesallam, T. A., Bukhari, M., & Alharethy, S. (2014). Development of the Arabic Version of Dysphagia Handicap Index (DHI). *Springer*, 29, 459-467. DOI 10.1007/s00455-014-9528-7
- Galitz, Y. S., Drendel, M., Ulriech, R. Y., Moskovich, L. S., Wolf, M., & Lahav, Y. (2018). Translation and Validation of the Dysphagia Handicap Index in Hebrew-Speaking Patients. *Springer*, 34, 63-72. <https://doi.org/10.1007/s00455-018-9914-7>

- Goforth, C. (2015). *Using and Interpreting Cronbach's Alpha*. Retrieved January 6, 2020, from <https://data.library.virginia.edu/using-and-interpreting-cronbachs-alpha/>
- Gustafsson, B., & Tibbling, L. (1991). *Dysphagia, an unrecognized handicap*. *Dysphagia*, 6(4), 193–199. doi:10.1007/bf02493525
- Kallás, M. S., Crosato, E. M., Biazevic, M. G. H., Mori, M., & Aggarwal, V. R. (2012). Translation and Cross-Cultural Adaptation of the Manchester Orofacial Pain Disability Scale. *Journal of oral & maxillofacial research*, 3(4). doi: 10.5037/jomr.2012.3403
- Kesmodel, U. (2018). Cross-sectional studies - what are they good for? *Acta Obstetrica Et Gynecologica Scandinavica*, 97(4), 388-393. doi: 10.1111/aogs.13331
- Koo, T., & Li, M. (2015). A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *Journal of Chiropractic Medicine*, 15(2), 155-163. doi: 10.1016/j.jcm.2016.02.012
- Krekeler, B., Wendt, E., Macdonald, C., Orne, J., Francis, D., Sippel, R., & Connor, N. (2018). Patient-Reported Dysphagia After Thyroidectomy. *JAMA Otolaryngology–Head & Neck Surgery*, 144(4), 342. doi: 10.1001/jamaoto.2017.3378
- Laosap, J., Nimpitakpong, P., Kongkaew, C., & Jedsadayanmata, A. (2012, November). *Development and validation of an instrument to assess general knowledge of stroke*. Paper presented at 1st International Conference of Mae Fah Luang University, Thailand. Retrieved from [http://mfuic2012.mfu.ac.th/electronic\\_proceeding/Documents/00\\_PDF/O-HS/O-HS-05%20Jeerapa%20Laosap.pdf](http://mfuic2012.mfu.ac.th/electronic_proceeding/Documents/00_PDF/O-HS/O-HS-05%20Jeerapa%20Laosap.pdf)
- Li, M., Wang, Z., Han, W. J., Lu, S. Y., & Fang, Y. Z. (2015). Effect of feeding management on aspiration pneumonia in elderly patients with dysphagia. *Chinese Nursing Research*, 2(2-3), 40-44. <http://dx.doi.org/10.1016/j.cnre.2015.09.004>
- Loh, K. P., Abdallah, M., Kumar, A. J., Neuendorff, N. R., Dahiya, S., & Klepin, H. D. (2019). Health-Related Quality of Life and Treatment of Older Adults with Acute Myeloid Leukemia: a Young International Society of Geriatric Oncology Review Paper. *Current hematologic malignancy reports*, 14(6), 523-535. <https://doi.org/10.1007/s11899-019-00552-6>
- Maheshwari, D. (2017). *Sampling Techniques in Quantitative Research / Dr. V.K. Maheshwari, Ph.D.* Retrieved 6 January 2020, from <http://www.vkmaheshwari.com/WP/?p=2455>
- McHorney, C., Robbins, J., Lomax, K., Rosenbek, J., Chignell, K., Kramer, A., & Bricker, D. (2002). The SWAL-QOL and SWAL-CARE outcomes tool for oropharyngeal dysphagia in adults: III. Documentation of reliability and validity. *Dysphagia*, 17, 97–114. DOI: 10.1007/s00455-001-0109-1

- McHorney, C. A., Martin-Harris, B., Robbins, J., & Rosenbek, J. (2006). Clinical validity of the SWAL-QOL and SWAL-CARE outcome tools with respect to bolus flow measures. *Dysphagia*, 21(3), 141-148. DOI: 10.1007/s00455-005-0026-9
- Medin, J., Windahl, J., von Arbin, M., Tham, K., & Wredling, R. (2012). Eating difficulties among patients 3 months after stroke in relation to the acute phase. *Journal of Advanced Nursing*, 68(3), 580-589. doi: 10.1111/j.1365-2648.2011.05759.x
- Momosaki, R., Yasunaga, H., Matsui, H., Horiguchi, H., Fushimi, K., & Abo, M. (2015). Effect of dysphagia rehabilitation on oral intake in elderly patients with aspiration pneumonia. *Geriatrics & gerontology international*, 15(6), 694-699. doi: 10.1111/ggi.12333
- Nikitas, C., Kikidis, D., Katsinis, S., Kyrodimos, E., & Bibas, A. (2017). Translation and validation of the dizziness handicap inventory in Greek language. *International journal of audiology*, 56(12), 936-941. <https://doi.org/10.1080/14992027.2017.1370559>
- Oda, C., Yamamoto, T., Fukumoto, Y., Nakayama, K., Sato, M., Murata, Kobayasi, Y. (2017). Validation of the Japanese Translation of the Dysphagia Handicap Index. *Dovepress*, 11, 193-198. <http://dx.doi.org/10.2147/PPA.S126052>
- Orgiles, M., Morales, A., Fernández-Martínez, I., Ortigosa-Quiles, J. M., & Espada, J. P. (2018). Spanish adaptation and psychometric properties of the child version of the Cognitive Emotion Regulation Questionnaire. *PloS one*, 13(8), e0201656. <https://doi.org/10.1371/journal.pone.0201656>
- Padilla, A. (2017). *The Impact of Dysphagia on Quality of Life and Stigma in Hispanic New Mexicans* (Master's thesis). Retrieved from Electronic theses & Dissertations. [https://digitalrepository.unm.edu/shs\\_etds/17/](https://digitalrepository.unm.edu/shs_etds/17/)
- Piault, E., Doshi, S., Brandt, B., Angün, Ç., Evans, C., Bergqvist, A., & Trocio, J. (2012). Linguistic validation of translation of the self-assessment goal achievement (saga) questionnaire from English. *Health And Quality Of Life Outcomes*, 10(1), 40. doi: 10.1186/1477-7525-10-40
- Pinho, J. P. (2015). *Translation, cross-cultural adaptation and validation of the Scored Patient-Generated Subjective Global Assessment (PG-SGA) for the Portuguese setting* (Master's thesis). Retrieved from Faculty of Nutrition and Food Science of University of Porto. Retrieved from <http://pt-global.org/wp-content/uploads/2016/01/Master-Thesis-Jo%C3%A3o-Pedro-Pinho-2015.pdf>
- Ross-Gordon, J. M. (2017). Disabilities and Adult and Lifelong Education. *The Palgrave International Handbook on Adult and Lifelong Education and Learning*, 879–898. doi:10.1057/978-1-137-55783-4\_45
- Roth, F. P., & Worthington, C. K. (Eds.). (2011). *Treatment resource manual: for speech and language pathology (4th ed.)*. USA: Delmar.

- Robbins, J., Butler, S. G., Daniels, S. K., Gross, R. D., Langmore, S., Lazarus, C. L., ... & Rosenbek, J. (2008). Swallowing and dysphagia rehabilitation: translating principles of neural plasticity into clinically oriented evidence. *Journal of Speech, Language, and Hearing Research*, *51*, S276-S300. [https://doi.org/10.1044/1092-4388\(2008/021\)](https://doi.org/10.1044/1092-4388(2008/021))
- Sales, D., Alvarenga, R., Vasconcelos, C., Silva, R., & Thuler, L. (2013). Translation, cross-cultural adaptation and validation of the Portuguese version of the DYMUS questionnaire for the assessment of dysphagia in multiple sclerosis. *SpringerPlus*, *2*(1), 332. doi: 10.1186/2193-1801-2-332
- Scientific, L. (2020). *Translation and Linguistic Validation of eCOA - Language Scientific*. Retrieved 16 January 2020, from <http://www.languagescientific.com/translation-and-linguistic-validation-of-patient-questionnaires/>
- Silbergleit, A., Schultz, L., Jacobson, B., Beardsley, T., & Johnson, A. (2012). The Dysphagia Handicap Index: Development and Validation. *Dysphagia*, *27*(1), 46-52. doi: 10.1007/s00455-011-9336-2
- Speyer, R., Heijnen, B. J., Baijens, L. W., Vrijenhoef, F. H., Otters, E. F., Roodenburg, N., & Bogaardt, H. C. (2011). Quality of Life in Oncological Patients with Oropharyngeal Dysphagia: Validity and Reliability of the Dutch Version of the MD Anderson Dysphagia Inventory and the Deglutition Handicap Index. *Dysphagia*, *26*, 407-414. DOI 10.1007/s00455-011-9327-3
- Takwin, M., Pansri, O., Parnichparinchai, T., & Vibulrangson, S. (2018). Developing a Self-Assessment Instrument for Analysis of the Social and Personal Competencies of Teachers in Senior High Schools in Indonesia. *Journal of Physics: Conference Series*, *1028*, 012088. doi: 10.1088/1742-6596/1028/1/012088
- Tarameshlu, M., Azimi, A. R., Jalaie, S., Ghelichi, L., & Ansari, N. N. (2017). Cross-cultural adaptation and validation of the Persian version of the SWAL-QOL. *Medicine*, *96*(26). DOI: 10.1097/MD.00000000000007254
- Timmerman, A., Speyer, R., Heijnen, B., & Klijn-Zwijnenberg, I. (2014). Psychometric Characteristics of Health-Related Quality-of-Life Questionnaires in Oropharyngeal Dysphagia. *Dysphagia*, *29*(2), 183-198. doi: 10.1007/s00455-013-9511-8
- Turner, R., & Carlson, L. (2003). Indexes of Item-Objective Congruence for Multidimensional Items. *International Journal of Testing*, *3*(2), 163-171. doi: 10.1207/s15327574ijt0302\_5
- Van-Teijlingen, E. and Hundley, V. (2001). The importance of pilot studies. *Nursing Standard*, *16*(35), 33-36. Retrieved 16 July, 2019, from <http://hdl.handle.net/2164/157>
- Vose, A. K., Kesneck, S., Sunday, K., Plowman, E., & Humbert, I. (2018). A survey of clinician decision making when identifying swallowing impairments and determining treatment. *Journal of Speech, Language, and Hearing Research*, *61*(11), 2735-2756. [https://doi.org/10.1044/2018\\_JSLHR-S-17-0212](https://doi.org/10.1044/2018_JSLHR-S-17-0212)

Weldring, T., & Smith, S. M. (2013). Article Commentary: Patient-Reported Outcomes (PROs) and Patient-Reported Outcome Measures (PROMs). *Health services insights*, 6, 61–68. doi: 10.4137/HSI.S11093

Woisard, V., Andrieux, M. P., & Puech, M. (2006). Validation of a self-assessment questionnaire for swallowing disorders (Deglutition Handicap Index). *Revue de laryngologie-otologie-rhinologie*, 127(5), 315-325. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/17425006>

World Health Organization (2020). *Process of translation and adaptation of instruments*. Retrieved January 16, 2020, from [http://www.who.int/substance\\_abuse/research\\_tools/translation/en](http://www.who.int/substance_abuse/research_tools/translation/en)

Wilkins, T., Gillies, R. A., Thomas, A. M., & Wagner, P. J. (2007). The prevalence of dysphagia in primary care patients: a Hames Net Research Network study. *J American Board of Family Medicine*, 20(2), 144-150. Retrieved from <https://www.jabfm.org/content/20/2/144.short>

***[N.B: For better understanding of the study, please see the hard copy and for any other information please contact: mehrin.himi23@gmail.com]***