

Translation and adaptation of the MIS-A (Medication Intake Survey-Asthma) questionnaire in Macedonian language

Dijana Miceva¹ Alexandra L. Dima^{2,3,4}, Katarina Smilkov¹ Darinka Gjorgieva Ackova¹ Biljana Lazarova⁵ Bistra Angelovska¹ Zorica Serafimovska⁶ Elena Drakalska Serseмова¹

¹Division of Pharmacy, Faculty of Medical Sciences, Goce Delcev University, Stip, Krste Misirkov Str., No. 10-A, P.O. Box 201, 2000 Stip, North Macedonia; Shtip

²Health Technology Assessment in Primary Care and Mental Health (PRISMA), Institut de Recerca Sant Joan de Déu, Esplugues de Llobregat, Spain ³Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública CIBERESP, Madrid, Spain ⁴Avedis Donabedian Research Institute (FAD), Universitat Autònoma de Barcelona, 008037 Barcelona, Spain

⁵Clinical hospital Stip, Ljuban Ivanov BB, 2000, Stip Republic of N. Macedonia

⁶ Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, Mother Tereza 47, 1000 Skopje, R.N. Macedonia

Background: Several validated questionnaires for measuring medication adherence in asthma patients exist, each having their unique strengths, limitations, and applications. Ascertaining the extent of adherence to medical treatment is a crucial step in achieving better disease control. Accurate translation of validated medication adherence measurement questionnaire into different languages is essential to ensure accurate and meaningful data across diverse patient populations.

Purpose: The objective of this study was to perform a translation and cultural adaptation of the Medication Intake Survey – Asthma – (MIS-A) into Macedonian language.

Methodology: The original version of the MIS-A and permission for its use were obtained from the original development team. The translation and adaptation were carried out following the Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO). The tool, initially developed for computer-assisted telephone interviews, was tested for telephone/in-person interviewing, in paper format, to adapt to local settings. The steps taken into consideration were: preparation (obtaining permission), forward translation (from English to Macedonian - two versions), reconciliation (one version of the translated questionnaire), backward translation (back-translated into English by a native English speaker), review of the backward translation (reviewing the back translation(s) against the source language - the original questionnaire), cognitive debriefing (cognitive interviewing conducted with 13 asthma patients), review of cognitive debriefing results (analyzing the results from cognitive interviews and incorporating them into the recent Macedonian version of the questionnaire), finalization, proofreading (checking for minor errors), and final report (a comprehensive report detailing all translation and cultural adaptation decisions made during the process, all containing and submitting it to the researchers).

Results: Only two items underwent cultural and linguistic adaptations to enhance their meaningfulness and ensure they sounded more idiomatic in the Macedonian language. It was regarding the term inhalations/puffs. The result of back translation was very similar to the original English version. The patients expressed their satisfaction with the Macedonian version of the MIS-A, finding it to be both comprehensive and suitable in terms of its overall content, questions, and response options.

Conclusion: We produced a Macedonian translation of the MIS-A from the original English version. The study findings suggest that the MIS-A is suitable and effective for evaluating medication adherence in the Macedonian healthcare context. In the next stage, this version will undergo validation and testing for its psychometric properties, ensuring its suitability for adherence research in North Macedonia.