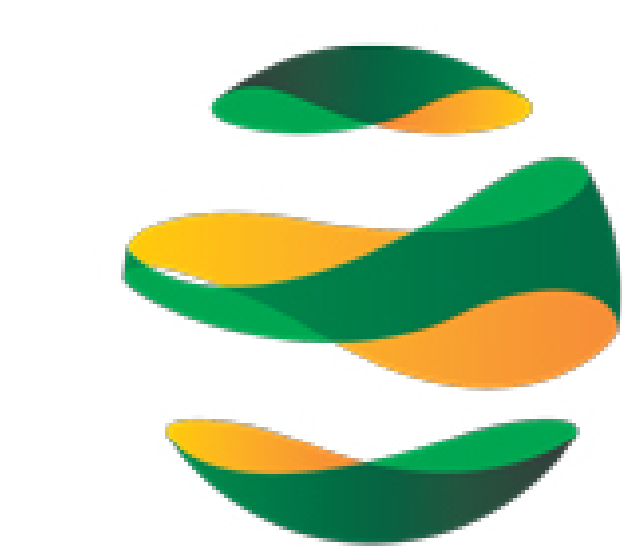


Macedonian Translation and Cross-Cultural Adaptation of the Inhaler Technique Questionnaire (InTeQ)

Dijana Miceva¹, Alexandra L. Dima², Catalina Lizano-Barrantes³, Montse Ferrer⁴, Olatz Garin⁵, Katarina Smilkov¹, Darinka Gjorgieva Ackova¹, Biljana Lazarova⁶, Bistra Angelovska¹, Zorica Naumovska⁷, Elena Drakalska Sersemova¹

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;;
²PRISMA, Institut de Recerca Sant Joan de Déu, Barcelona; Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública CIBERESP, Madrid; Avedis Donabedian Research Institute (FAD), Barcelona, Spain; ³Health Services Research Group, Hospital del Mar Research Institute, Barcelona, Spain; Department of Medicine and Life Sciences, Universitat Pompeu Fabra, Barcelona, Spain; Department of Pharmaceutical Care and Clinical Pharmacy, Faculty of Pharmacy, Universidad de Costa Rica, San Jose, Costa Rica; ⁴Health Services Research Group, Hospital del Mar Research Institute, Barcelona, Spain; Department of Medicine and Life Sciences, Universitat Pompeu Fabra, Barcelona, Spain; Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública CIBERESP, Madrid, Spain; ⁵Health Services Research Group, Hospital del Mar Research Institute, Barcelona, Spain; Department of Medicine and Life Sciences, Universitat Pompeu Fabra, Barcelona, Spain; Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública CIBERESP, Madrid, Spain; ⁶Clinical hospital Stip, Ljuben Ivanov BB, 2000, Stip Republic of N. Macedonia; ⁷Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, Mother Tereza 47, 1000 Skopje, R.N. Macedonia



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AIM:

This study aimed to translate and culturally adapt the **Inhaler Technique Questionnaire (InTeQ)** into the **Macedonian language**. Considering that poor inhaler technique is a major contributing factor to suboptimal drug delivery in asthma patients and may compromise the effectiveness of treatment, this action represents a significant advancement in medication adherence in North Macedonia.

METHODOLOGY:

The InTeQ is comprised of five items asking about the frequency of performing keysteps when using the inhaler, utilizing a five-level Likert scale (from "Always" to "Never").

The steps taken into consideration were:

PREPARATION

- 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 (review against the original questionnaire to evaluate the conceptual equivalence);
- Cognitive debriefing (cognitive interviewing conducted with 15 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 one item was subjected to cultural and linguistic adjustments to improve its relevance and ensure it sounded more natural in the Macedonian language. In the two translated versions, there was a difference between the term **"fully"** regarding the first question.

In the second step, reconciliation of the two translated versions, the term **"fully"** was discussed, and was decided to use a term that refer more to term **"completely"** because it best fitted Macedonian language context.

The result of back translation was very similar to the original English version; therefore, no further changes were required. The patients expressed their satisfaction with the Macedonian version of the InTeQ, finding it very useful, clear, and comprehensive.

CONCLUSION:

We generated a **Macedonian version** of the InTeQ conceptually equivalent to the original tool. Additional research is required to confirm that the Macedonian version of the InTeQ exhibits the necessary measurement properties for its intended use. The subsequent phase involves testing the new version with a study in patients from the target setting.

Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: Report of the ISPOR Task Force for Translation and Cultural Adaptation

InTeQ / Прашалник за инхалациона техника

Име и презиме _____
Дата: ___ ден / ___ месец / ___ година

Овие прашања се однесуваат на тоа како до неодамна сте го користеле инхалаторот. Со цел да го разбереме Вашето искуство со терапијата, Ве молам да ги одговорите сите прашања. Нема точен и неточен одговор; ние сме заинтересирани за Вашето лично гледиште и искуство. Вашите одговори се доверливи, што значи дека тие што ќе ги прегледуваат нема да знаат дека одговорите се Ваши. Луѓето може да ги користат инхалаторите на различни начини, зависно од нивните навики или како се чувствуваат во моментот. Во текот на последните 4 месеци, колку често ги имате направено следниве акции кога го користите Вашиот инхалатор?

	Секогаш	Често	Понекогаш	Ретко	Никогаш	Не се сеќавам
1 Издишувам потполно пред користење	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Ги затворам усните цврсто околу отворот на инхалаторот	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Вдишувам длабоко низ отворот на инхалаторот	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Го држам здивот најмалку 10 секунди после вдишување	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Издишувам многу бавно после употреба	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Во текот на последните 4 месеци, дали го користевте Вашиот инхалатор(и) со разделник /спејсер?

Секогаш	Често	Понекогаш	Ретко	Никогаш
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ви благодарам за одговорите!