

## 20. Worldwide validation and use of the Diabetes Management Self-Efficacy Scale: challenges of comparability and interpretability

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**Background:** As part of an international collaborative program of research related to diabetes management using self-efficacy theory, there was a need for assessment scales to be developed and validated cross-culturally. One of these scales for use with people with type 2 diabetes was the Diabetes Management Self-Efficacy Scale (DMSES). This Scale was developed and validated concurrently in the United States of America and The Netherlands. Once high psychometric estimates were achieved, the DMSES was ready for further use in these countries as well as for validation in other countries.

**Aim:** The aim of the program of research was to collaborate with researchers internationally to conduct cross-cultural validation of the DMSES. This would permit its worldwide use and to identify any issues of comparability and interpretability.

**Method/Design:** Researchers in other countries were given permission to validate the DMSES and to use in their studies. They would then follow a rigorous process for translation to the language and then validity and reliability testing. These researchers would share their results with the lead investigators of the Scale.

**Results:** The DMSES has been translated into 24 languages, including American, Australian and British English and Spanish in the USA and French in Canada. Achieving semantic and content equivalence posed a major challenge in cross-cultural research. The stage of transfer from one language to another is an additional step in questionnaire design that requires careful attention to maximize the internal validity of the study. In validation studies worldwide, the DMSES has received high psychometric estimates. The tests for reliability have obtained similar psychometric estimates. The factor analyses have yielded some different factors. This requires careful interpretation.

**Conclusions:** The DMSES has been validated worldwide and is being used in research in assessing the effectiveness of diabetes management programs. Ongoing collaboration among the researchers is important.