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Health Literacy

Functional health literacy in Switzerland—Validation of a German, Italian, and French health literacy test

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ABSTRACT

Objective: This study aimed to translate and validate German, Italian, and French versions of the Short-Test of Functional Health Literacy (S-TOFHLA), to be used in Switzerland and its neighboring countries.
Methods: The original English version of the S-TOFHLA was translated by applying standardized translation methods and cultural adaptations. 659 interviews were conducted with Swiss residents in their preferred language (249 German, 273 Italian, and 137 French). To assess the validity of the measures, known predictors for health literacy (age, education, and presence of a chronic condition) were tested.
Results: For all three language versions, results show that younger participants, participants with a higher education and participants with chronic medical conditions had significantly higher levels of health literacy. Furthermore, the three health literacy scales categorized participants into three health literacy levels with most people possessing either inadequate or adequate levels. The highest levels of health literacy were found in the Swiss-German sample (93%), followed by the Swiss-French (83%) and Swiss-Italian (67%) samples.
Conclusion: The German, Italian, and French versions of the S-TOFHLA provide valid measures of functional health literacy.
Practice implications: The translated versions can be used in the three different language regions of Switzerland as well as in neighboring countries following 'country specific' adjustments and validations.

1. Introduction

Numerous studies have shown that health literacy is related to people's health outcomes, health status, and their health-related behaviors [1–3]. Several instruments are available to measure people's health literacy: the Test of Functional Health Literacy (TOFHLA) [4], the Rapid Estimate of Adult Literacy in Medicine (REALM) [5], and the Short Test of Functional Health Literacy (S-TOFHLA) [6]. The TOFHLA and the REALM represent two fundamentally different approaches to measure health literacy. The TOFHLA is intended to measure patients' ability to read and understand the things commonly encountered in healthcare settings [4] and uses the cloze procedure, which requires participants to replace missing words in a given text. The REALM measures one's ability to read and correctly pronounce a list of medical words [5]. The TOFHLA has been found to be an effective tool for identifying people with inadequate functional health literacy, however it takes up to 22 min to conduct [6]. For a quicker evaluation of people's health literacy the S-TOFHLA was developed, consisting of two prose passages with a total of 36 cloze items and four numeracy items. The total time to conduct the S-TOFHLA is 12 min or less [6].

Numerous studies have employed the S-TOFHLA to identify predictors of health literacy. Inadequate health literacy is most prevalent among those reporting poor overall health [7]. Furthermore, older people [8–14], men [15], people with a lower level of education [8,11,12,16–19] showed lower levels of functional health literacy. Lower levels of health literacy resulted in lower knowledge about chronic disease [20]. Variables, which have been shown to predict higher health literacy levels are: the presence of a chronic condition [21], income [12,21–23] and perception of one's own health status [21].

1.1. Review of validation studies

Currently, validated S-TOFHLAs only exist in a limited number of languages. It has been translated and validated into Spanish [6], Brazilian Portuguese [24], Hebrew [25], Serbian [21], Chinese (Cantonese) [27], and Mandarin [28].

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Carthery-Goulart et al. [24] translated the S-TOFHLA into Portuguese and adapted it to the Brazilian context to convey information about the Brazilian health system. This required contextual and structural adaptations. However, whenever a sentence needed to be modified due to differences between English and Portuguese, the authors tried to keep the original structure by using alternative stimuli which were either phonetically similar to the original or they used a target belonging to the same grammatical class as the original.

Baron-Epel et al. [25] translated the S-TOFHLA into Hebrew, but due to differences in the basic structure of English and Hebrew, this could not be done verbatim. Several items required alteration for valid testing in Hebrew and/or needed to be adapted regarding the Israeli health system.

Jovic-Vranes et al. [21] constructed a Serbian version of the S-TOFHLA, which is conceptually very close to the original English version. The authors translated the English version directly into Serbian using cross-cultural translation techniques, including back translation and semantic adaptations [26]. Nevertheless, the authors also had to further adapt the questions regarding the Serbian health care system. These three studies show that simple word-for-word translations are not possible and that adaptations have to be employed.

Attempts have also been made to translate and validate the S-TOFHLA into Chinese (Cantonese) [27], Mandarin [28], and Korean [29]. However, no word-for-word translation was possible and the reading comprehension sections had to be rewritten. Valid health literacy measures were developed for Cantonese [27] and Mandarin [28] but not for Korean [29].

The validation studies provided evidence on the antecedents of health literacy. A lower educational level [21,23,25], higher age [21,23,25], being unmarried [21], unemployment [21], low income [21,23] and the absence of chronic conditions [21] all correlated negatively with health literacy. Inconsistent results have been found for gender with both men [25], and women [15,23] possessing higher health literacy levels.

1.2. Rationale of the study

To the best of our knowledge no validated S-TOFHLA exists in German, Italian, or French. The aim of the present study was to validate versions of the S-TOFHLA in the three major languages spoken in Switzerland; German, French and Italian since the healthcare system operates in all three languages. Therefore, the present study seeks to evaluate health literacy among Swiss residents in all three language regions and its association with socio-demographic variables and the presence of chronic conditions. As a result, the translated S-TOFHLA versions could not only be employed in Switzerland but also in the neighboring countries Germany, Austria, Italy and France with minimal modifications regarding the national health care systems.

2. Methods

2.1. Participants

Data collection for the present study took place between June and August 2011 in the German, French, and Italian speaking regions of Switzerland. Therefore, self-administered paper–pencil questionnaires were distributed within face-to-face interviews at random places such as supermarkets, petrol stations, shopping malls, and public spaces. Participants were chosen according to predefined quota for gender, education, age, and residence. All participants had to be 18 years or older, speak one of the national languages and be Swiss residents.

In total, 659 people participated in the study; all demographic characteristics can be found in Table 1.

Compared with the census data of Switzerland analyzed separately for each language region, participants older than 64 years were underrepresented and participants younger than 64 years were overrepresented in the German- and French-speaking samples but not in the Italian-speaking sample [30]. Furthermore, the achieved educational level was slightly higher for achieving a university degree than the respective regional average [30]. In contrast, participants who had achieved high-school (University entrance degree) or had finished an apprenticeship were underrepresented in all three language regions [30].

2.2. Modification and translation of the S-TOFHLA

The original English S-TOFHLA [6] was translated by native speakers of German, Italian, and French into the respective languages following the standard methodologies for questionnaire translation [26]. Following translation, the questionnaire was back translated by a native English speaker who was fluent in the respective language to see whether differences between the original English and the translated versions would occur. Back translations were systematically reviewed in accordance with predefined grammatical criteria, which had been formulated when translating the original questionnaire into the three target languages, respectively. Furthermore, special attention was paid to the cultural adaptation of the context. The aim was to provide a translation as close as possible to the original S-TOFHLA to make comparisons between countries possible. However, some minor changes were implemented due to differences in the Swiss Health Care System. Similarly to the original English version, all three translated versions of the S-TOFHLA consisted of three parts; two prose passages with a total of 36 cloze items and 1 numeracy section consisting of 4 numeracy items [6].

2.3. Interview procedure

Face-to-face interviews were conducted in all three language regions. At the beginning of each interview the interviewer

Table 1
Socio-demographic characteristics of the sample.

	German	Italian	French
Number of interviews	249	273	137
Mean age (years)	36 (SD = 16.3)	47 (SD = 20.1)	37 (SD = 16.3)
Gender			
Male (%)	47% (*N* = 117)	48% (*N* = 132)	55% (*N* = 61)
Female (%)	53% (*N* = 132)	52% (*N* = 141)	45% (*N* = 75)
Education			
University degree (%)	22% (*N* = 55)	23% (*N* = 64)	28% (*N* = 38)
Vocational school/high school (%)	29% (*N* = 73)	32% (*N* = 87)	24% (*N* = 33)
Secondary school/apprenticeship (%)	43% (*N* = 107)	37% (*N* = 102)	42% (*N* = 58)
No education/primary school (%)	4% (*N* = 11)	6% (*N* = 15)	2% (*N* = 3)