



Application of a Universal Translation Method to PROMIS® Pediatric Item Banks



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Background

The Patient Reported Outcome Measurement Information System (PROMIS®) is a federally funded initiative in the US to build efficient, precise, valid, and cross-culturally acceptable item banks for measuring health in adults and children. The publicly available item banks are administered via fixed short forms or Computer Adaptive Test (CAT) assessments.

Aims

This study aimed to apply a universal method for translation of item banks into German and Spanish for 9 PROMIS Pediatric measures...

- see ovals in figure 1 –

Methods

We used a Forward-Backward-Forward translation technique in adherence to the latest recommendations of the ISPOR PRO Translation and Linguistic Validation Task Force.

- see figure 2 –

First, 10 independent professional translators generated National Forward Translations (NFTs) of each item bank (6 German NFTs: 2 for German, Swiss, and Austrian each; 4 Spanish NFTs: 2 for US-Spanish and 2 for European Spanish).

The NFTs were compared with one another and to the original English version by translators and subject matter experts.

Next, expert consensus on conceptual equivalence and comprehensibility for children in each sub-population was reached, and the revised versions were back-translated.

Figure 1: Conceptualization of pediatric health of the PROMIS® initiative. Pediatric item banks are created for all 9 subdomains. ▼

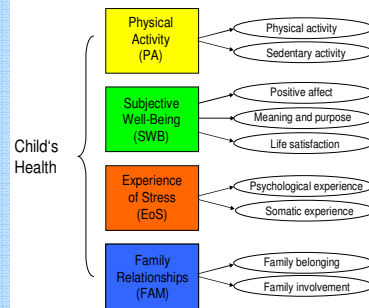
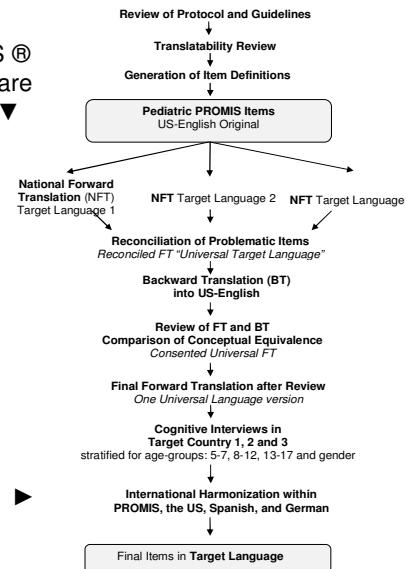


Figure 2: Translation strategy Target Universal Language: German (TL1: German, TL2: Austrian, TL3: Swiss) and Spanish (TL1: US-Spanish, TL2: Spanish).

Table 1: Sociodemographics of children, who were cognitively interviewed. ▼

Language	German	Spanish	
	60 German (incl. Austrian and Swiss)	38 US-Spanish	28 Spanish-Spanish
Gender			
% female	50%	29%	54%
% male	50%	71%	46%
Age			
Mean	11.5	12.5	11.3
SD	2.7	3.0	3.0
8-10 yrs.	29	11	13
11-12	4	7	5
13-14	12	10	5
15-16	15	5	3
17-18	0	5	2
n	60	66	

Table 2: Exemplary items with problems during the translation or CI process. ▶



German results				
Domain	Item	Translational problems	Cognitive Interview results	Modified or deleted?
PA: Physical Activity	In the past 7 days, how many days did you run 3 miles or more?	The US metric was transformed to the German metric (mile > km).		m
	In the past 7 days, how many days did you hike, hunt, or horseback ride?		German children don't hunt, so this sports was dropped in the target text.	m
PA: Physical Sedatory	In the past 7 days, on a usual day, how much time did you spend texting.	The IT term "texting" was translated to writing "SMS" (save: IT communication words may change in the future).		m
SWB: Positive Affect	In the past 7 days, I felt very positive.	Translation was difficult, final version captures the content of "feeling confident" ("Zuversichtlich").		m
SWB: Meaning and Purpose	Thinking about my life, I expect things to work out for the best.		German children thought such a belief to be naive (cultural difference).	m
FAM: Family Belongingness	In the past 4 weeks, I was unsure if my family cared about me.	"Care about" was hard to translate ("sich sorgen" = worry about s.o.), the item was translated using "being important to the family" in German.		m

Spanish results				
Domain	Item	Translation problems	Cognitive Interview results	Modified or deleted?
PA: Physical Activity	In the past 7 days, how many days did you play baseball, softball, cricket, or baseball?	Sports such as cricket or lacrosse are not played in Spain.		m
SWB: Life Satisfaction	In the past 4 weeks, I was happy with my life in my community.		Cultural difference: "Community" is not a common concept in Spain, but "Barrio" (=neighbourhood).	m
SWB: Meaning and Purpose	Thinking about my life, I am full of hope.		Young children did not understand "hope" ("esperanza").	m
EoS: Experience of Stress	I could not stay still for long.		Difficulty in answering due to double negatives (item-response option).	m

PA=Physical Activity, SWB=Subjective Well-Being, FAM=Family Belongingness, EoS: Experience of Stress, m=modified, d=deleted

Methods (Continuation)

The Backwards Translations (BTs) were reviewed again, and reconciled versions (one per language) were generated. The BTs were cognitively-tested for comprehensibility and conceptual equivalence in 126 children. For sociodemographics...

- see table 1 –

Results

During the universal translation process of the 9 PROMIS Pediatric item banks, a number of items were identified as problematic.

- see table 2 –

Problematic items were either modified in content (PA: 30, SWB: 22, EoS: 13, FAM: 18 items) or deleted (3 items). A final, conceptually equivalent item pool easy to understand by German- and Spanish-speaking children aged 8 to 17 years was achieved.

Conclusions

We have applied a universal translation process for pediatric item pools and successfully applied it to 9 PROMIS Pediatric item banks.

The translation procedures assure conceptual equivalence. Next steps in this study will be to link the item banks to the English versions to place them on the same scale, thereby creating a single, cross-culturally harmonized set of PRO metrics.

If you are interested in obtaining the Spanish or German pediatric PROMIS translations, please contact:

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