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A Comprehensive Review of Cross-Cultural Adaptation of Multilingual Patient Related Outcome Measures for Pediatric Dysphonia

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Introduction

- Voice disorders affect the pediatric population with estimates of prevalence ranging from 3.9% to 23%.[1]
- Patient Reported Outcome Measures (PROMs) are standardized tools used to evaluate the impact of a patient's health condition on their quality of life from the patient's perspective.
- Cultural variations in expression can complicate evaluation of dysphonia.
- Availability of quality multilingual PROMs enhances care for diverse populations.
- This review compares available PROMs for pediatric dysphonia in languages other than English.

Methods

- PubMed, ScienceDirect and Web of Science searched for non-English PROMs assessing pediatric dysphonia. References were also queried.
- Study group characteristics were assessed: average age, gender, and sample size.
- Validity and reliability assessments were compared in PROMs available in at least one language other than English.
- Beaton et al.'s cross-cultural adaptation guidelines were used to assess the process of translating PROMs[2]. Translations were assessed for completing, partially completing, or not completing stages 1-5.

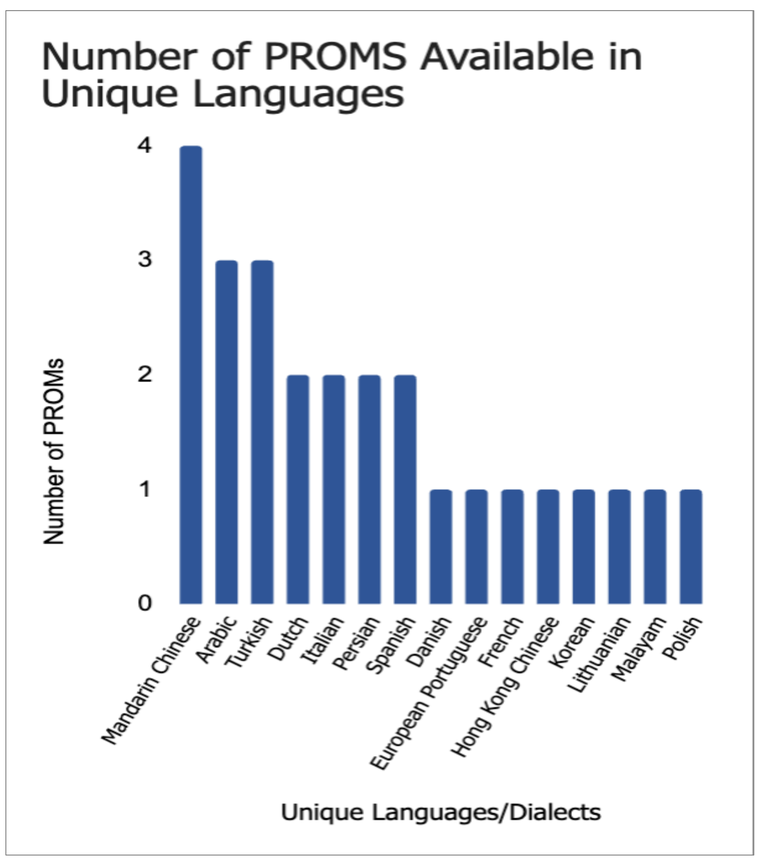

Figure 1: The number of PROMs available in unique languages/dialects.

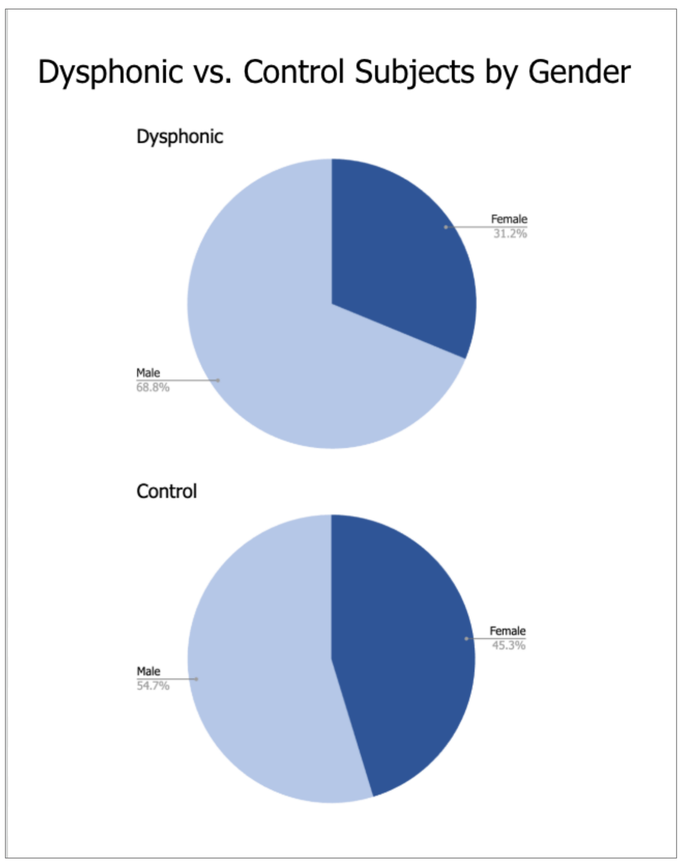

Figure 2: Gender distribution of dysphonic and control subjects enrolled in translation studies.

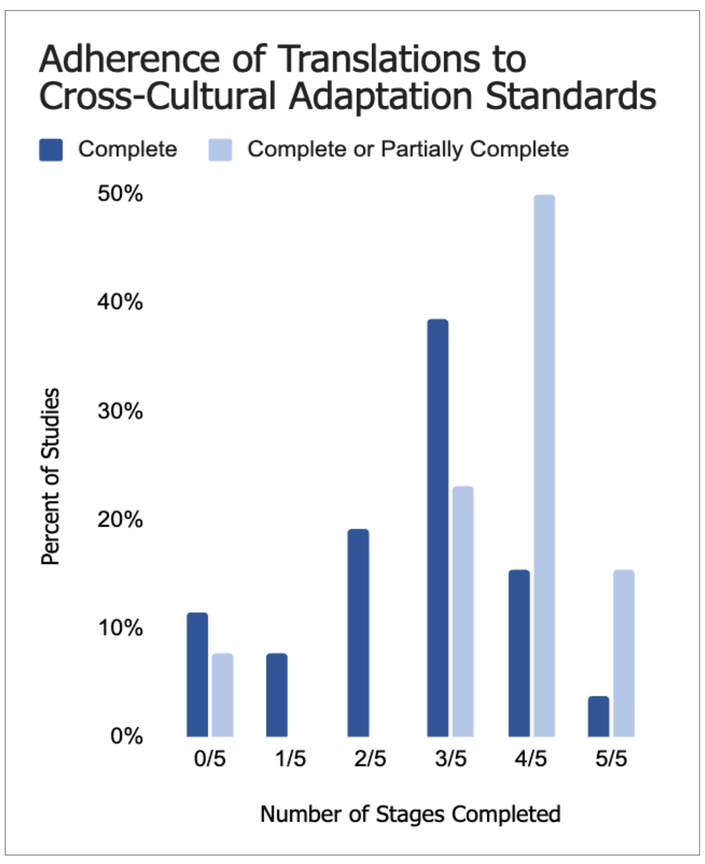

Figure 3: The percent of multilingual PROMs adhering to Beaton et al.'s standards for cross-cultural adaptation in their translation process.

Results

- The pediatric voice handicap index (pVHI) was the most widely translated PROM, with translations completed in 14 languages and 16 unique cultural contexts.
- Mandarin Chinese (n = 4), Arabic (n = 3), and Turkish (n = 3) were the most widely available languages (Figure 1).
- Females comprised 30.6% of subjects in dysphonic groups and 46.1% of subjects in control groups ($p < 0.0001$) (Figure 2).
- For all translations, dysphonic children received significantly higher scores to at least $p=0.001$ by Mann-Whitney U test.
- There was high average internal consistency ($M = 0.918$, $SD = 0.054$) and high average test-retest reliability ($M = 0.879$, $SD = 0.106$).
- 3.8% of translations completely satisfied Beaton et al.'s standards for cross cultural adaptation, though 57.7% of studies satisfied 3/5 stages. Majority of studies partially or completely satisfied 4/5 stages (Figure 3).

Discussion

- There are no existing translations of PROMs for pediatric dysphonia for 3/10 of the most commonly spoken languages in the United States (Vietnamese, Tagalog, Russian)[3].
- Available translations demonstrate excellent validity and reliability.
- Few studies strictly adhered to cross-cultural adaptation standards.
  - Evaluation limited by availability of description of translation process
  - Many studies broadly followed steps of cross-cultural adaptation (forward/back translation and expert evaluation) however the rigor of these practices has not been standardized.
- Males tended to be more represented than females in validation studies. The proportion of dysphonic female subjects was significantly lower than control female subjects.
  - The higher proportion of males in validation studies may be concordant with higher rates of dysphonia in pediatric males[4,5].

Future Directions

- There remain many commonly spoken languages for which translations of PROMs for dysphonia are unavailable.
- Future research evaluating the readability of PROMs would further improve accessibility for diverse patient populations.
- Additional translations should adhere strictly to cross-cultural adaptation standards.

Conclusions

- The pVHI has been widely translated, though some commonly spoken languages remain unavailable.
- Additional PROMs have limited availability in languages other than English.
- Translations overall demonstrate excellent validity and reliability.
- There is variation in the translation process, and few studies strictly adhere to cross-cultural adaptation standards.

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