

## Description of Translation of SWYC Forms from English to Spanish

### SUMMARY

The SWYC is a comprehensive developmental-behavioral screening instrument that is comprised of several sections:

- The *Developmental Milestones* assess motor, language, social and cognitive development.
- The *Parent's Observations of Social Interactions* (POSI) is an autism-specific screener administered to parents of children between 16 and 30 months old.
- Two age-specific questionnaires, modeled after the well-validated Pediatric Symptom Checklist, assess social-emotional functioning and behavior. The *Baby Pediatric Symptom Checklist* (BPSC) is administered to parents of children up to 18 months. The *Preschool Pediatric Symptom Checklist* (PPSC) is administered to parents of children 18-60 months
- The *Parent's Concerns* questions ask parents whether they have any concerns about their child's behavior, learning, or development.
- The *Family Questions* address aspects of the child's family context. These items were chosen from previously validated sources commonly used to measure symptoms of parental depression, discord, substance abuse and hunger.

Translation of the SWYC from English to Spanish took place over several years, and was accomplished through collaboration among investigators from Tufts Medical Center (TMC) and The Children's Hospital of Philadelphia (CHOP). A Spanish version of the SWYC is available at [www.theSWYC.org](http://www.theSWYC.org).

A construct validation study of the SWYC with families who speak Spanish is currently in process. Because the SWYC's psychometric properties were established based on an English speaking sample, we urge extreme caution in applying scoring algorithms to the Spanish translations.

### TRANSLATION PROCESS

#### Initial translation at Tufts Medical Center

The TMC translation team included native speakers from Mexico, Venezuela, and Colombia. A member of the TMC team performed the initial translation of the BPSC, PPSC, POSI, and Parent's Concerns. When existing Spanish translations of the Family Questions were available in the published literature, these were used. We translated those Family Questions that were not already available. These initial translations were back-translated into English. Then, the back-translation was compared to the original English version. The TMC team discussed and resolved discrepancies, resulting in a consensus draft.

Spanish-speaking research assistants then conducted cognitive interviews with 15 parents of young children, 10 of whom were monolingual Spanish speakers and 5 of whom were bilingual. The focus of

these cognitive interviews was to explore participants' understanding of SWYC questions and response choices, to explore alternate phrasing when appropriate, and to ensure that grammar and word choice was appropriate for Spanish speakers from a range of nationalities.

TMC staff also completed an initial translation of the Milestones items, but back-translation and cognitive interviewing of these items were deferred due to budget and staff constraints.

### **Independent Review at The Children's Hospital of Philadelphia**

TMC's initial translations were sent to the CHOP team for independent review. The CHOP team included native speakers from Argentina, Colombia, and Puerto Rico. CHOP conducted an extensive independent translation of the SWYC and then compared it to results from TMC. The steps in this process included forward translation, a review of this translation by a panel of staff, and a back translation by a bilingual pediatrician. The team adhered to all of the WHO's principles for translation, focusing on the accuracy of the meaning of the items and the need for broad acceptability across cultures and easy reading level. Whenever phrasing differed, (i.e. due to differences in region of origin or educational background) the team chose the word or phrase that was considered by consensus to be the most understandable to all Spanish speakers.

Pre-testing and cognitive interviews with 4 families who had children from birth to five years were then conducted by the CHOP team using the translated version of the SWYC. Based on the feedback from the cognitive interview sessions, further clarification of some items occurred. The CHOP team recommended extensive edits to the initial TMC translation, particularly in the Milestones section, which had not previously been back-translated or subject to cognitive interviewing.

### **Finalizing the translation**

Revisions were reviewed by the TMC team and discrepancies were resolved during a series of conference calls with the CHOP team. Once consensus was reached, a TMC translator again back-translated all sections of the SWYC. Results were compared to the original English version. Meanings were found to be consistent between the original English version and the back-translated version in nearly all cases.

We note one exception as an example: a SWYC Milestones item that refers to "ladder" was translated using a word that was back translated as "stairs." Despite having distinct meanings in English, the translated versions were found to be almost identical. Because no word in Spanish differentiates between "ladder" and "stairs", special care should be taken in analyzing and interpreting results to this question.

## **RESEARCH NEEDS**

As stated above, initial psychometric research was conducted based on responses from English speaking parents. Therefore, scoring algorithms may not apply to Spanish translations. At a minimum, further research on the Spanish version of the SWYC is needed to:

1. Establish reliability and concurrent validity with other screening instruments
2. Determine accuracy with respect to “gold standard” assessments of behavior and development
3. Establish normative data for calculation of percentile scores and to calibrate scoring parameters for the SWYC Milestones.

As of the writing of this document, goal #2 is being addressed by both the TMC and CHOP teams. Both teams are conducting a study to compare the accuracy of the SWYC, the Ages and Stages Questionnaire Third Edition (ASQ-3), and the Ages and Stages Questionnaire: Social-Emotional (ASQ:SE) with respect to a battery of “gold standard” assessments of behavior and development. The Tufts Medical Center team is also including the Parents' Evaluation of Developmental Status (PEDS) in this comparison. The sample will include Spanish-speaking participants.

Further research will address goals #1 and #3. Until additional research is conducted using the Spanish translation of the SWYC, scoring algorithms developed for the English versions should be used with caution.

**SWYC leadership staff: R. Chris Sheldrick PhD, Ellen C. Perrin MD, Marsha Gerdes PhD**

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