

# CAN A PARENT QUESTIONNAIRE MAKE A USEFUL CONTRIBUTION TO THE ASSESSMENT OF CHILDREN'S SPEECH?



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# THE VALIDITY, RELIABILITY AND ACCURACY OF THE FRENCH VERSION OF THE INTELLIGIBILITY IN CONTEXT SCALE (ICS-F)

# INTRODUCTION

Speech sound disorders (SSD) are associated with developmental language disorders (DLD), with difficulties in communication, social participation, literacy, and learning [1-3]. SSD and their effects may have long-lasting consequences [4]. Therefore, early identification is essential to prevent these consequences [2].

Subjective measures of functional intelligibility, such as the Intelligibility in Context Scale (ICS), have already proven to be a very useful tool for the early identification of SSD in preschoolers [6,7].

The ICS is a free parent-report scale that allows parents to rate their child's speech intelligibility based on seven conversational partners. The ICS is a widely used tool that has been translated into more than 60 languages and validated in 10 languages [6].

The ICS has been translated into French, but has not yet been validated or standardized. In contrast, the Frenchspeaking context still requires an increase in the number of tools and measures for screening for SSD [5].

#### GOALS



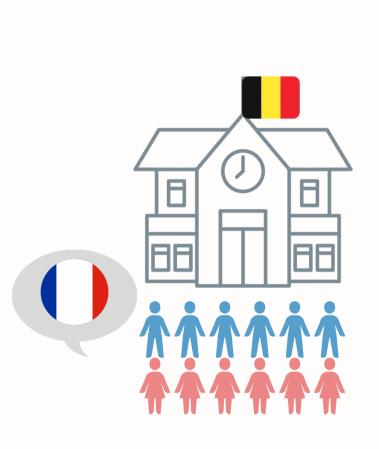
To determine the psychometric properties of the French version of the ICS (ICS-F) in terms of validity & reliability, sensitivity & specificity, using objective measures of speech.



To develop *normative data* for the ICS-F

To contribute to current advances in screening for SSD in French-speaking children

# **METHODS**



 $\mu$ = 50; SD = 8.9 SSD n = 42 **Typically** 

- → Exclusion
- IQ ≤ P16, hearing loss ≥25dB,

developing (TD)

n = 147

+ parents

35 to 67 months

- Medical & linguistic history, Lexical & Morphosyntactic level DLD profile
- multilingualism, preterm birth (<37 weeks),



Speech



ICS-F

You (Parents) Close family Extended fami Child s friends Strangers

French standardized picture-naming task

→ Speech performance (standard score)

Transcription and speech analyses → Phon [9]

→ Percent consonant correct (PCC)

→ Percent phones correct (PPC)

→ Percent vowels correct (PVC)

= Exalang 3-6 [8]

#### Reliability

- Internal consistency
- Test-retest (on 30% of the sample)
- Validity
- 5 age groups, with 6-month intervals

Norms development

children

- Calculation of percentiles and mean + SD

Based on average ICS-F scores of TD

# - Concurrent validity

Discriminant accuracy analyses

### 1) Classification SSD – TD according to the ICS-F norms

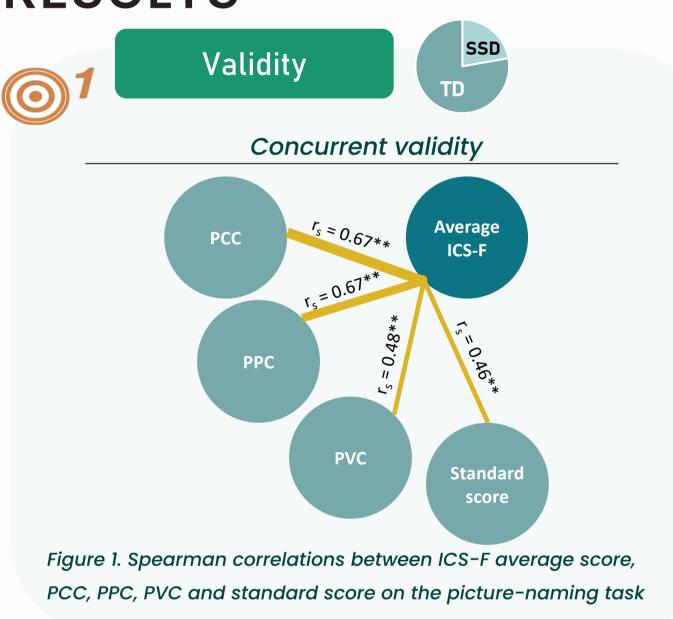
TD	SSD
Scores >P16 on ICS-F standard	Scores ≤P16 on ICS-F standard
scores	scores

- 2) Comparison with the group classification
  - Sensitivity \* + Specificity \*

# **RESULTS**

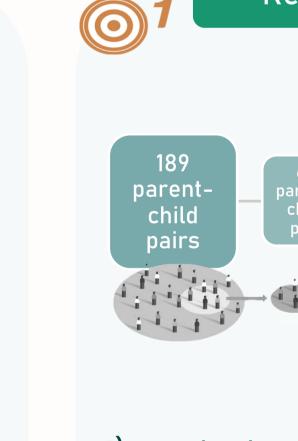
→ Controlled for

IQ & Audition,

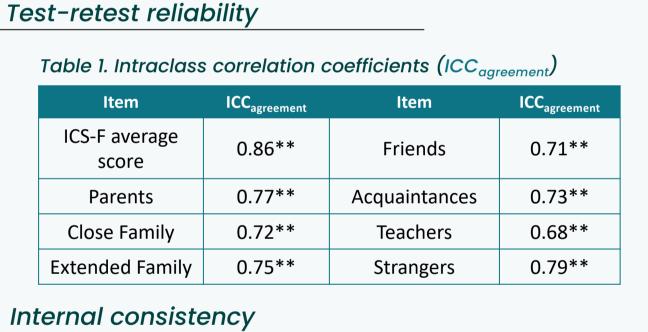


Sensitivity & Specificity

Figure 2. Sensitivity and specificity analyses, with P16 as threshold



Reliability



1) Cronbach's alpha = 0.96 (Excellent)

2) Inter-item correlations (spearman's rho) ranged - from moderate (rs = 0.58\*\*)

Normative data

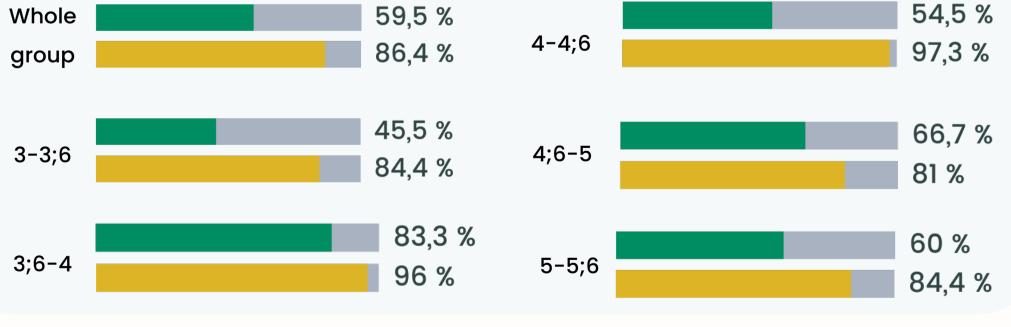
3.67

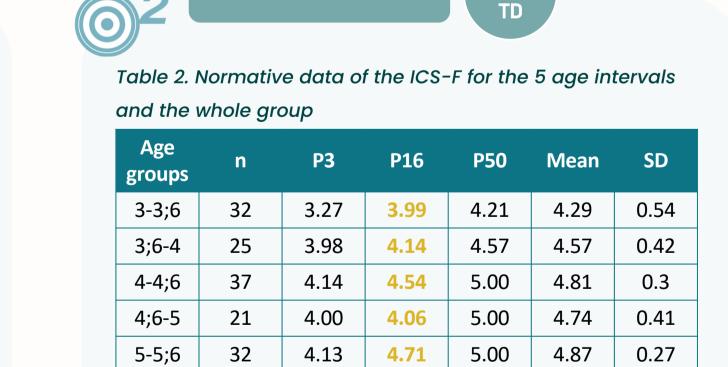
147

group

- to very strong (rs = 0.93\*\*)







## DISCUSSION POINTS

This study replicates the methods of previous research on ICS in other languages [6,7,10].

Similar to these studies, we found that the ICS-F:

- = has good validity and reliability scores
- = has slightly higher central distribution values, but still close to those of other languages

Previous works on the ICS reported varying levels of accuracy [6,7,10].

Our study showed low sensitivity (<80%) and fair specificity (>80%)

- = In line with the varying levels of accuracy observed in previous works
- → Variations can be explained by ≠ on age ranges, threshold selection, the type of gold-standard [11]

# Limitations/Perspectives:

Our sensitivity/specificity rates indicate that the ICS-F is currently more of a <u>confirmatory tool</u> than a <u>screening tool</u>. However, as the ICS is designed to be a screening tool [6], perspectives could be considered:

- → Perform an ROC curve analysis to determine satisfactory sensitivity levels.
- → Norms for each age group were developed with a small number of participants
  - → We could extend the age groups to 1 year intervals

5 groups  $\rightarrow$  3 groups

The ICS-F appears to be a valid and reliable tool for assessing functional speech intelligibility in the French-speaking context. Normative data are also available.

4.66

0.45

5.00

4.14

The good psychometric properties of the ICS-F encourage its use by SLPs with French-speaking children.

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## \*FOOTNOTE

Sensitivity = the ability of a test to detect a true positive, being based on the true positive rate, reflecting a test's ability to correctly identify all people who have a condition [11]

**Specificity** = the ability of a test to detect a true negative, being based on the true negative rate, correctly identifying people who do not have a condition [11]

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