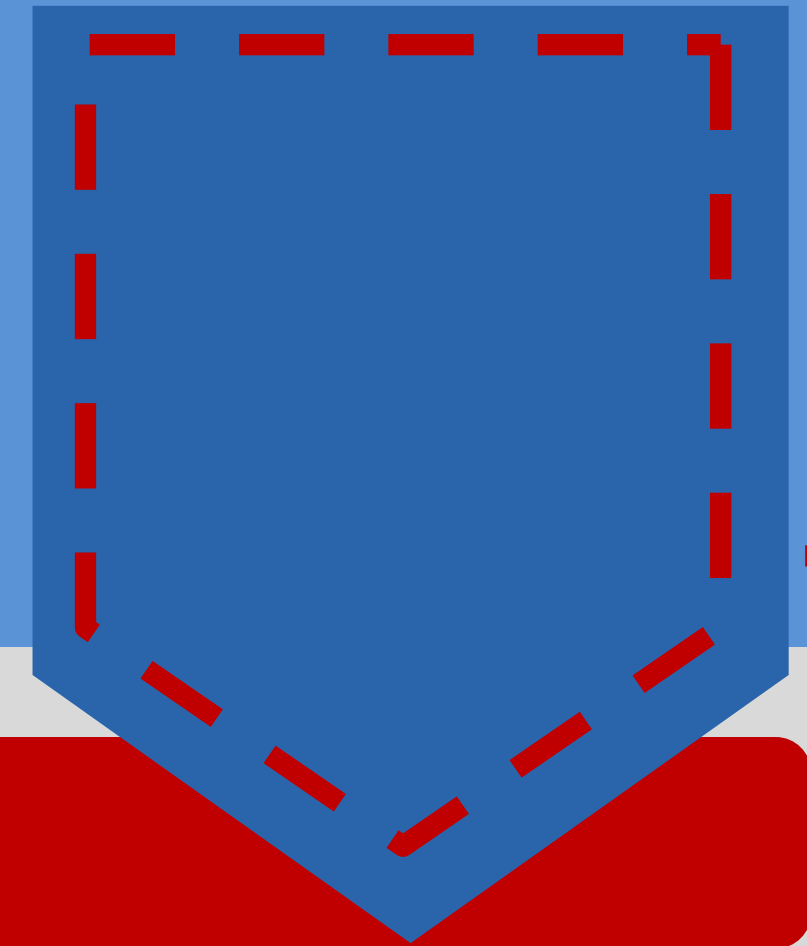# ADAPTATION OF THE CYLEX QUESTIONNAIRE IN GREEK TYPICALLY DEVELOPING CHILDREN AGED 6 MONTHS TO 3 YEARS AND 6 MONTHS

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Introduction

Typically developing children follow certain language milestones in order to acquire adult-like language skills, despite variability in developmental trajectories (Berko-Gleason & Ratner, 2016). Meaningful words emerge at around the age of 12 months with a remarkable acceleration of early productive words at the age of 20 months (Bates et al. 1994; Stoel-Gammon, 1989). Literature suggests that late talkers might be at risk of developing a language disorder as compared to typically developing children (Parizi et al. 2013; Rescorla & Schwartz 1990; Rescorla et al. 2000).

A parental vocabulary list can provide very important information about children's receptive and expressive vocabulary status at certain ages that are critical to language development.

The Cyprus Lexical List (CYLEX) was originally developed by Petinou et al. (1999) in Cyprus. CYLEX is a parental report vocabulary checklist based on the structural principles of the MacArthur Communicative Development Inventory (Fenson et al. 1993) and it assesses the Receptive and Expressive Vocabulary skills of children aged 12 months to 3:6 years. The a-CYLEX parental report checklist has been used in several studies in Greece (Chachoudi 2012, Parizi 2012, Parizi et al. 2013; Petinou et al. 2011; Oktapoti et al. 2016; Salagoudi, 2019). A wealth of significant conclusions from the above studies, in both typically-developing and clinical populations, has given rise to the need to standardize CYLEX for children in Greece.

Aim

The aim of this study was to evaluate the psychometric properties of the adapted Cyprus Greek Lexical List (a-CYLEX) in a sample of 197 Greek toddlers from the island of Crete with Standard Modern Greek (SMG) as their primary language. More specifically the objectives of this study were to determine the test-retest reliability, internal consistency, and concurrent validity of the a-CYLEX inventory which was conducted in the island of Crete.

Methodology

Participants

The sample of the present study consisted of **197 toddlers** [mean age = 29.45 months, SD (8.93); 53.8% girls]. The majority of participants came from urban areas in Crete (Heraklion, Rethimno, Agios Nikolaos), whereas the remaining 7.1% (n = 14) lived in a rural area of Heraklion district (Venerato, Agios Mironas, Fodele, Viannos, Agia Varvara, Augeniki).

Demographics of participants in a-Cylex (GR) per age groups and gender

Kindergarten attendance per age group (%)

Measures

The adapted version of the CYLEX in the Greek language (a-CYLEX), (Parizi et al. 2013) was used in the present study. The a-CYLEX is separated into the following 18 semantic categories: baby words, animal sounds, animal names, food/drink, body parts, actions, places (outside things), household objects, rooms, personal items, people, vehicles, clothes, concepts, adjectives, tools, toys and other words. The parent is asked to check whether the child understands and/or produces certain words from different semantic categories. Taking into consideration cultural and regional language diversity, the authors of the current study also made a few changes to the a-CYLEX, thereby they added alternatives to existing items, omitted or shifted others from their respective semantic categories.

The Greek version of the **Receptive One-Word Picture Vocabulary Test-II** (ROWPVT-II; Brownell, 2000) was employed in the present study. The ROWPVT-II was adapted as a protocol with norms in the Greek Language by Okalidou, Syrika, Beckman and Edwards (2011). It is an instrument designed to assess the receptive vocabulary of children aged from 2:0 to 5:11 years. It consists of 170 colored items. The examiner shows to the child a set of four pictures and the child is requested to point to the picture that the examiner asks for. It takes about 10 to 15 minutes to complete.

Procedures

Data collection took place from 06/06/2017 until 23/06/2018. Seventy-seven (77) parents completed the a-CYLEX (GR) in the first author's private practice facility and during the time of completion of the questionnaires the first author administered the ROWPVT-II to the children aged 2:0 to 3:6 years. For the rest of the sample (120 subjects) the author visited six (6) public kindergartens after permission was provided by the appropriate authority of the Heraklion prefecture (Municipal Organization of Preschool Education) and distributed a-CYLEX (GR) checklist to the parents. After the a-CYLEX (GR) checklists were collected, the first author visited the kindergartens and administered the ROWPVT-II to the children aged 2:0 to 3:6 years. The a–CYLEX (GR) was completed twice by sixty-two (62) parents with a two-week period between each administration for reliability purposes.

Results

Reliability of the a-CYLEX (GR): Test-retest reliability of the a-CYLEX (GR) was assessed by re-administering the instrument to 62 parents (31.5% of the total sample) two weeks after the initial assessment. Pearson r correlation coefficients were significantly high for both language skills, receptive vocabulary, $r(60) = .98$, $p<.001$ and expressive vocabulary, $r(6) = .99$, $p<.001$.

Internal item consistency of the a-CYLEX (GR): Internal item consistency of the a-CYLEX (GR) was assessed with Cronbach's α for the total score and for each semantic subscale separately a-CYLEX (GR), α=.98; Receptive Vocabulary, α=.96; Expressive Vocabulary, α=.98. Intercorrelations among a-CYLEX's (GR) word categories using Pearson r were found to be statistically significant ($p<.01$) and ranged for the Receptive Vocabulary from .51 to .94, and for the Expressive Vocabulary from .41 to .98. Correlation coefficients between Receptive and Expressive word categories in a-CYLEX (GR) and the total score on a-CYLEX (GR) were also significant ($p<.01$) and ranged from .50 to .97. Thus, the internal consistency of the a-CYLEX (GR) checklist was supported.

Intercorrelations between the word categories in a-CYLEX (GR) and the total score in a–CYLEX (GR)

Concurrent validity of the a-CYLEX (GR): Correlation coefficients between the standardized values of the a-CYLEX's (GR) Receptive and Expressive Vocabulary subscales, the total score of the a-CYLEX (GR) and the Greek Version of ROWPVT-II of the age group 2:0-3:6 (n=125) were also assessed, in order to test the concurrent validity of the a-CYLEX (GR) checklist. The a-CYLEX (GR) Total score as well as Receptive and Expressive vocabulary were statistically but moderately correlated with total score on ROWPVT-II, [a-CYLEX (GR) Total score / ROWPVT-II, $r=.51$, $p<.01$]; [a-CYLEX (GR) Receptive Vocabulary / ROWPVT-II, $r=.48$, $p<.01$], and [a-CYLEX (GR) Expressive Vocabulary / ROWPVT-II, $r=.48$, $p<.01$]. These findings provide modest support for the concurrent validity of the a-CYLEX (GR) checklist.

Concurrent Validity of the a-CYLEX (GR)

	1	2	3	4
1. CYLEX GR_total score	-			
2. CYLEX GR_receptive	.95***	-		
3. CYLEX GR_expressive	.97***	.84***	-	
4. ROWPVT-II_total score	.51***	.48***	.48***	-

*** $p < .001$

Conclusions

- A high test-retest reliability is obtained for both Receptive and Expressive Vocabulary.
- High internal consistency is supported for the total score of the a-CYLEX (GR) and for each semantic subscale.
- The children's performance on the Greek version of the ROWPVT-II was moderately equivalent to the parents' observations and reports.
  Possible reasons:
  a) The different structure of the Greek version of the ROWPVT-II and the a-CYLEX (GR)
  b) The different methodological approaches conducted in the Greek version of the ROWPVT-II and the a-CYLEX (GR) for gathering data.
  c) The Greek version of the ROWPVT-II examines only Receptive vocabulary, whereas the a-CYLEX (GR) examines both, Receptive and Expressive Vocabulary.

- The findings of the present study contribute to the existing literature regarding the reliability and validity of the a-CYLEX (GR).
- The a-CYLEX (GR) is a parental report checklist that can be used by clinicians who are interested in assessing Receptive and Expressive Vocabulary of children during toddlerhood.
- The a-CYLEX (GR) could give useful insights to parents and specialists regarding the child's vocabulary.
- The a-CYLEX (GR) could be considered as an efficient screening tool and according to its outcome, children can be referred to for further evaluation to specialists and if needed for early intervention.
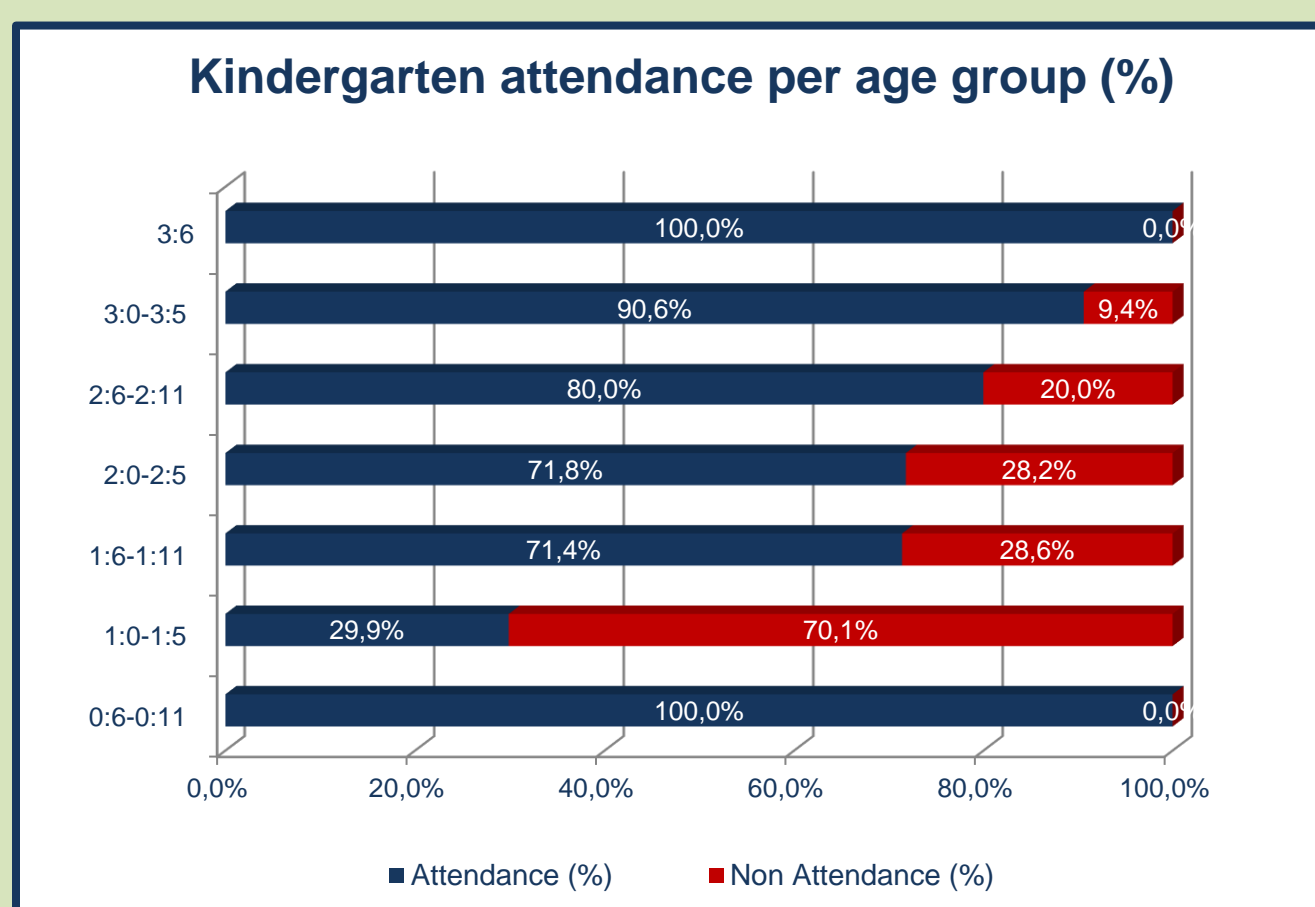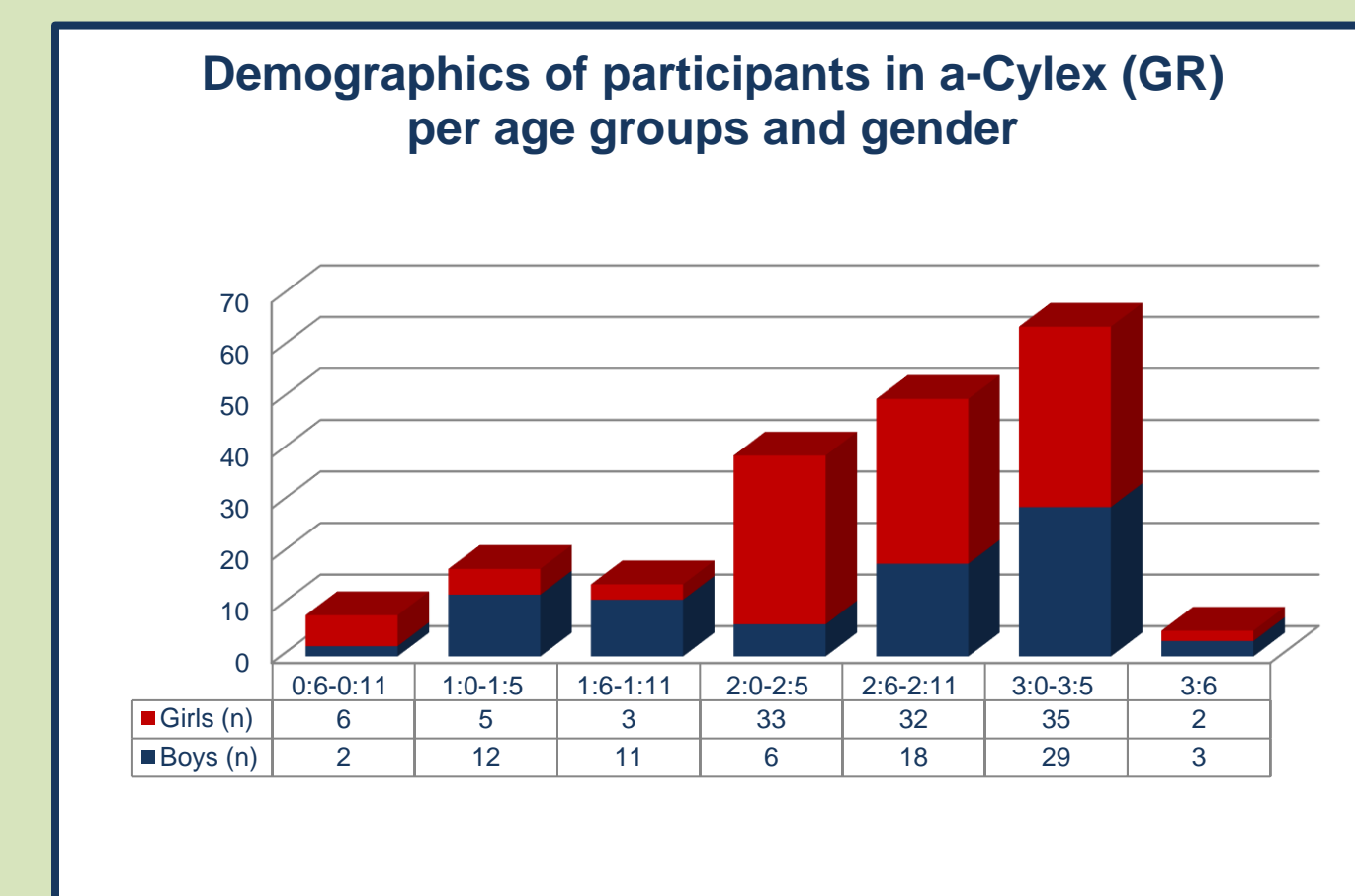
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