

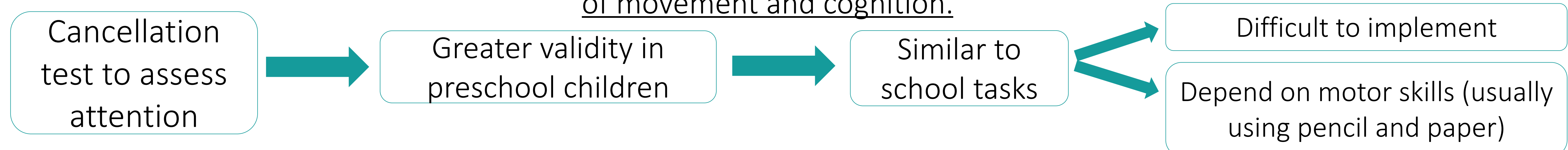
# Digital Teddy: a tool to assess children's selective attention

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## Introduction

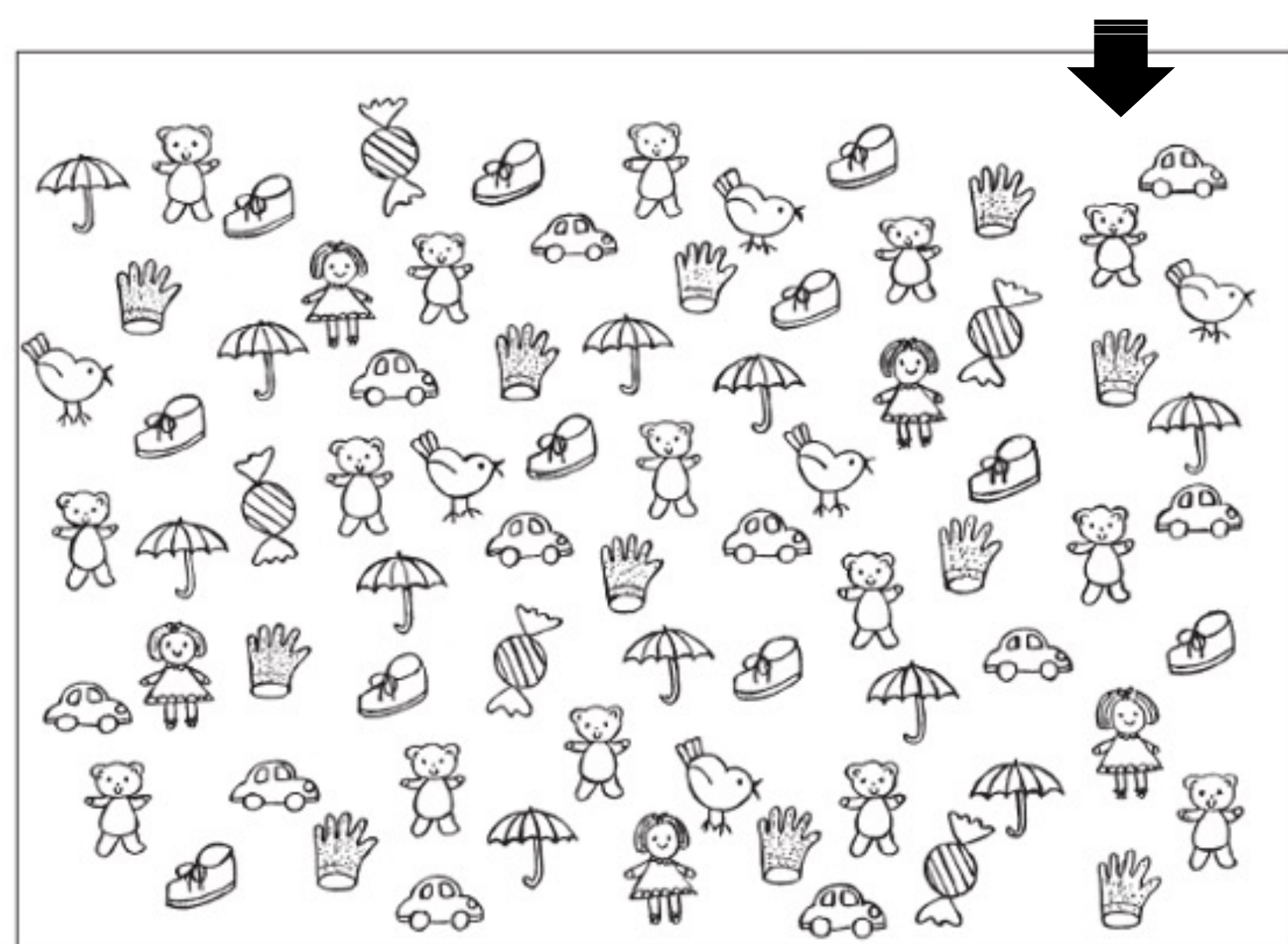
Efficient selective attention is essential in daily life and plays an important role in childhood as it facilitates the development of movement and cognition.



This study aims to determine the validity and usability of Digital Teddy App

## Teddy Bear Cancellation Test (TBCT)

Laurent-Vannier et al. 2001

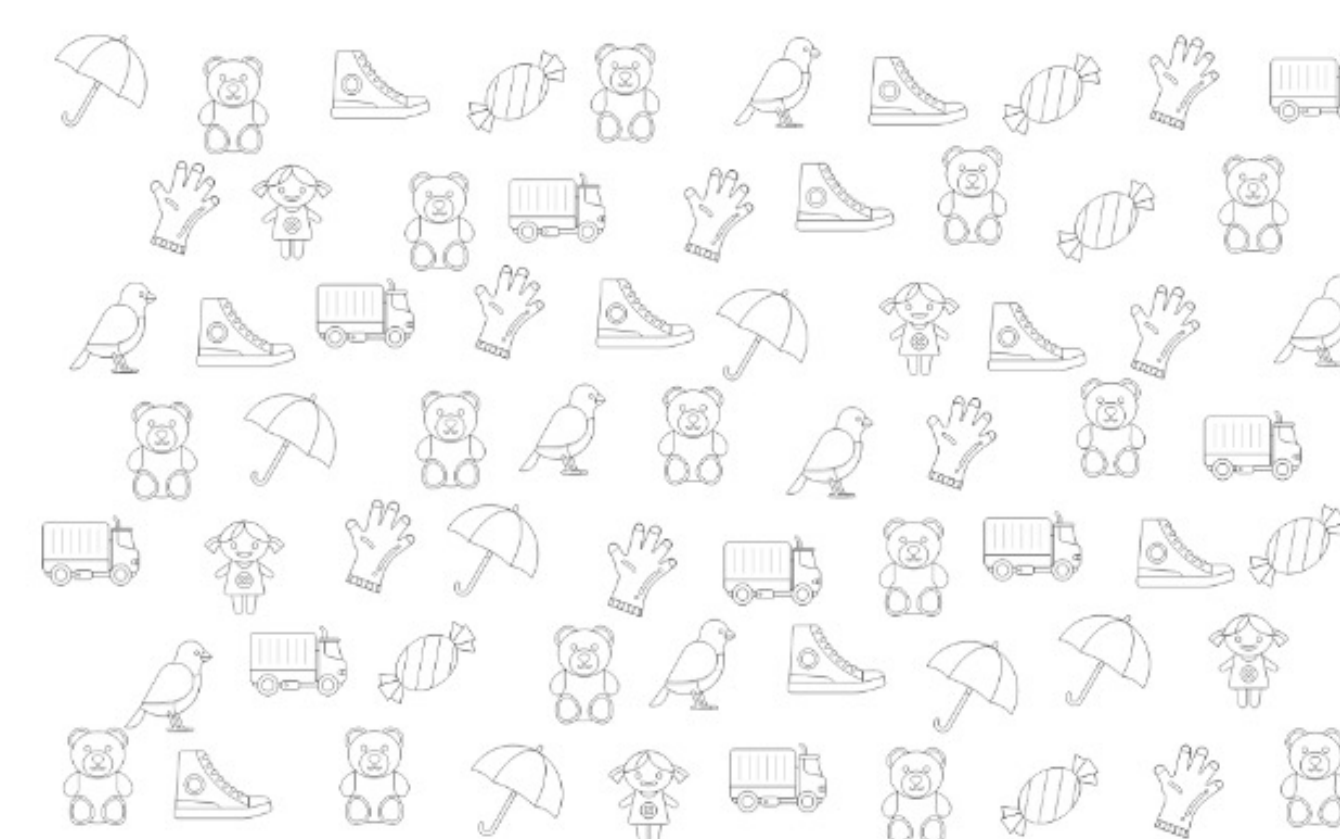


For children aged between 3 and 8 years old  
**Paper-and-pencil test**  
 "cancellation" of targets (15 teddy bears) in a sheet with 60 distractors.

Evaluation is based on **three parameters**: number of omissions; location of omissions and location of the first three teddy bears identified.

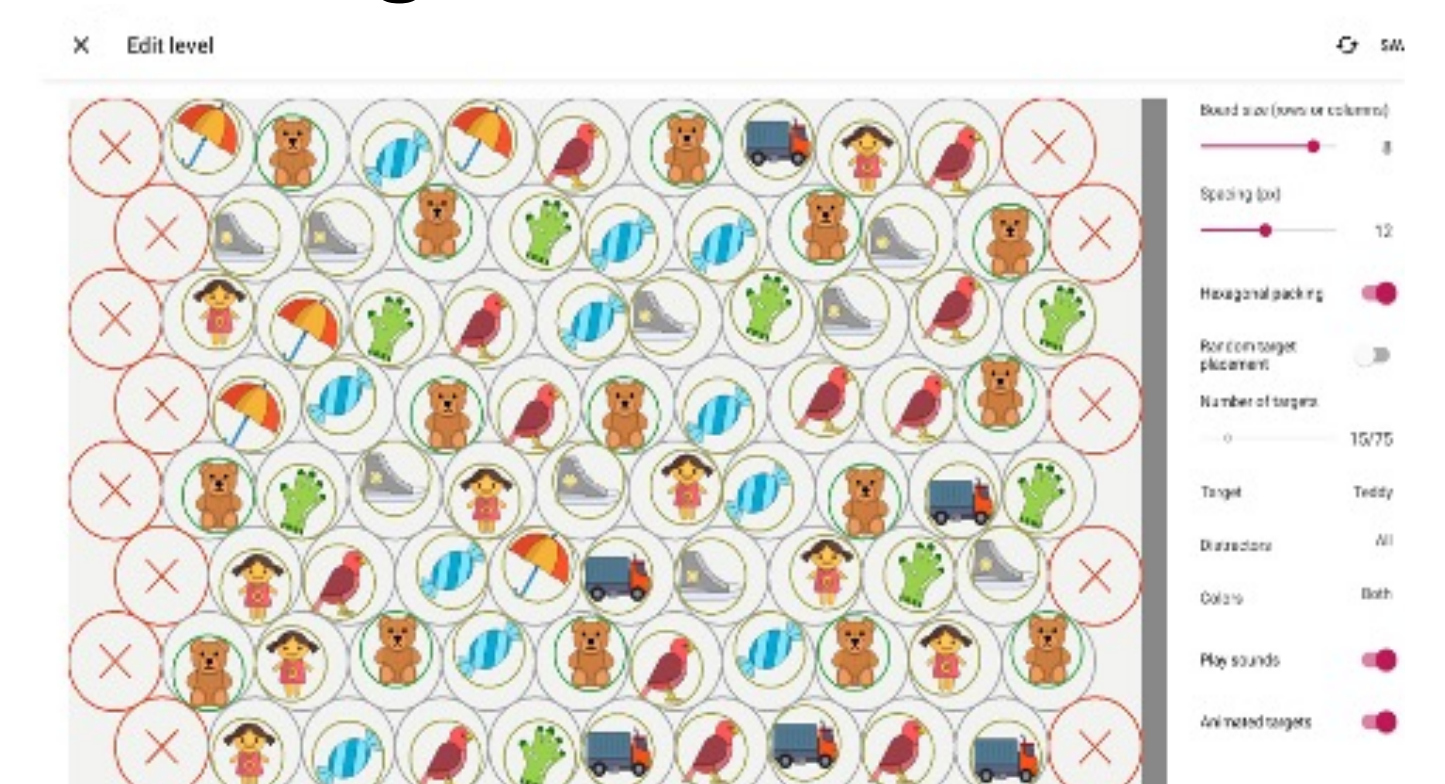
## Digital Teddy

Digital Teddy app was developed for the Android OS



Examiners can **create tests using the interface**, which contains different options: number and type of objects, random placement of targets and distractors, etc.

During sessions, **each interaction** of the child with the tablet is **recorded in a CSV file**; as well as the configuration of the level.



## Material and methods

The usability of the **application** and the validity of the data obtained were determined

TBCT vs Digital Teddy, conditions presented in a randomized order.

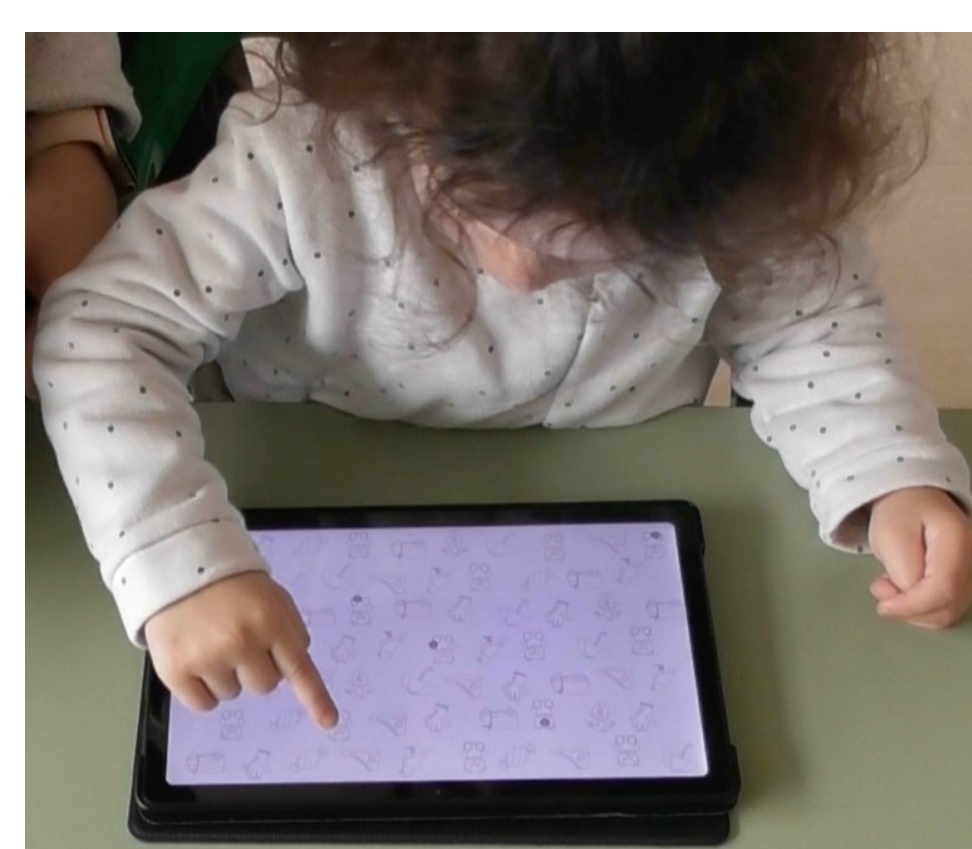


Children were asked to **cancel targets** with dominance hand finger.

The sessions were recorded to obtain precise data from the paper version

### Variables

Number of omissions (NO), number of TB not crossed out; number of errors (NE), time between the beginning and the end (in seconds) and accuracy (acc\*) were recorded.



## Conclusions

The **accuracy, time and number of omissions** improves with age. The **digital version** seems not to be valid for children under 36 months old.

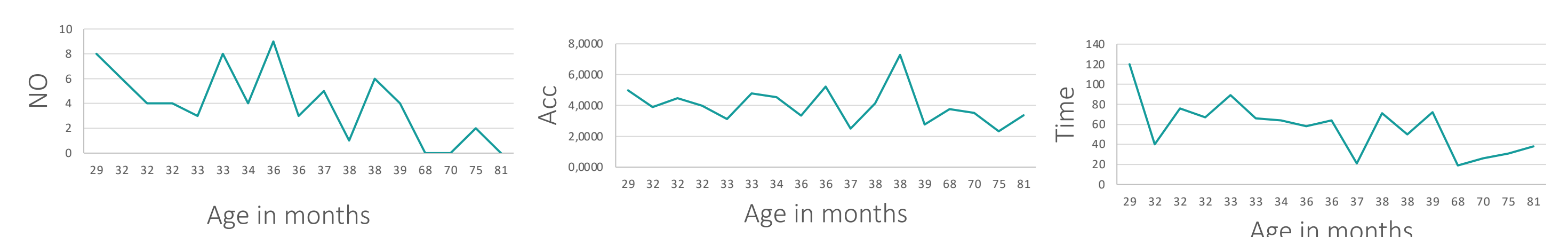
This study shows that **Digital Teddy** is suitable to reproduce the **original TBCT** in children >36 months.

More **data** are being collected in children >36 months to deeply study Digital Teddy psychometric properties.

## Results

AGE IN MONTHS (mean, SD)		AGE IN YEARS (mean, SD)	
43,71 ±17,42		3,18 ±1,43	
Distribution of months	N	Distribution of age	N
29-32 months	4	2	7
33-36 months	5	3	6
37-39 months	4	5	2
68-81 months	4	6	2
GENDER	N	HAND DOMINANCE	N
Male	8	Right	14
Female	9	Left	2
		Not defined	1

Data have a normal distribution



There was **no significant difference** in the study variables comparing paper and digital version, **except NO and time**

		mean, SD	Mean difference
NO	Paper	3,06±3,344	<,001
	Digital	3,94±2,839	
Errors	Paper	1,94±2,749	,077
	Digital	3,24±3,093	
Time	Paper	56,067±23,731	,022
	Digital	57,18±26,375	

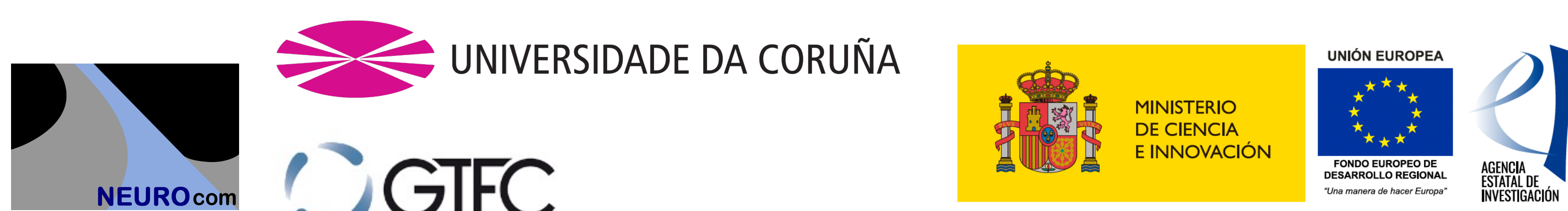
There was **no significant differences** in NO between both versions in **children up to 36 months**

NO		mean, SD	p
<36m	Paper	4,89±3,621	,012
	Digital	5,44±2,351	
>36m	Paper	1,00±1,195	,558
	Digital	2,25±2,435	

No other significant differences were found by age group

Grant PID2021-126782OA-I00 funded by MCIN/AEI/ 10.13039/501100011033 and by "ERDF A way of making Europe"

Project approved by the Research Ethics Committee of A Coruña-Ferrol (2021/531), on 9/6/2022.



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