

Background

Research in children with Developmental Language Disorder (DLD) and typically developing children has demonstrated a relationship between language functioning and other domains, such as communicative participation, academic achievement & social-emotional functioning. Little is known about the factors that predict the variation in developmental patterns and outcomes in the different domains.

In this study, longitudinal data are collected from 600 Dutch children with (presumed) DLD. They are monitored from 4 years of age until adulthood. Data are collected at important transition points, such as the start of primary school and the transition to high school.

Research questions

- Which factors explain the variation in developmental patterns of children with (presumed) DLD?
- What is the relationship between language, intelligibility and communicative participation in 4-year-old children with DLD?
- Which factors are predictive for communicative participation in 4-year-old children with DLD?

Participants

N = 333		
	Mean (SD)	Range
Age at T0 (N = 303)	3;9 (0;3)	3;1-4;8
Age at T1 (N = 330)	4;6 (0;3)	4;3-6;3

Methods

Test moments T0 = before school entrance and T1 = six months after the start at primary school.

Variables Dependent: communicative participation (T1)
Independent: language comprehension, receptive and expressive vocabulary, expressive grammar & nonverbal IQ (T0), intelligibility, background measures like SES & multilingualism (T1).

Instruments Standardized tests for language and cognition, Intelligibility in Context Scale¹, and questions on communicative participation with Visual Analog Scales².

Analysis Multiple regression analyses and correlations in SPSS. N = 205 due to missing data.

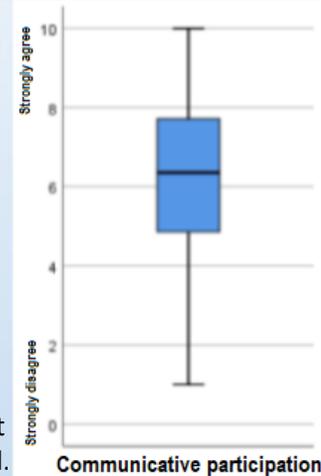
References

¹ McLeod, S., Harrison, L.J., & McCormack, J. (2012). The Intelligibility in Context Scale: Validity and reliability of a subjective rating measure. *Journal of Speech, Language, and Hearing Research*, 55, 648-656.

² Zwitserlood, M., Wiefferink, K., & Gerrits, E. (submitted). Speech and language intervention via parents: a randomized trial with Dutch toddlers with DLD.

Results and Implications

- Intelligibility (T1) and (to a lesser extent) expressive grammar (T0) explain a significant proportion of variance in communicative participation at T1.
- 47,5% of the variance is explained by these two measures.
- Language comprehension, receptive and expressive vocabulary, nonverbal IQ, and the background measures do not significantly add to that and were not included in the final model.



Regression Coefficients for predicting Communicative Participation

Variable	B	95% CI		β	t	p
		upper	lower			
(Constant)	-4,702	[-6,455,	-2,949]			
Intelligibility	2,061	[1,706,	2,415]	.609	11,452	.000
Expressive grammar	,037	[,017,	,058]	.195	3,668	.000

Note R_z_adj = .475 (N=205, p = 0.000). CI = confidence interval for B

Take-home message:

The communicative participation of young children with (presumed) DLD depends on their intelligibility and expressive grammatical skills.

Conflict of interest: All authors declare that they have no conflict of interest.

Project team

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Background and Research questions

Research has demonstrated a **relationship between language functioning and other domains**, such as communicative participation, academic achievement & social-emotional functioning ^{10,11,12}.

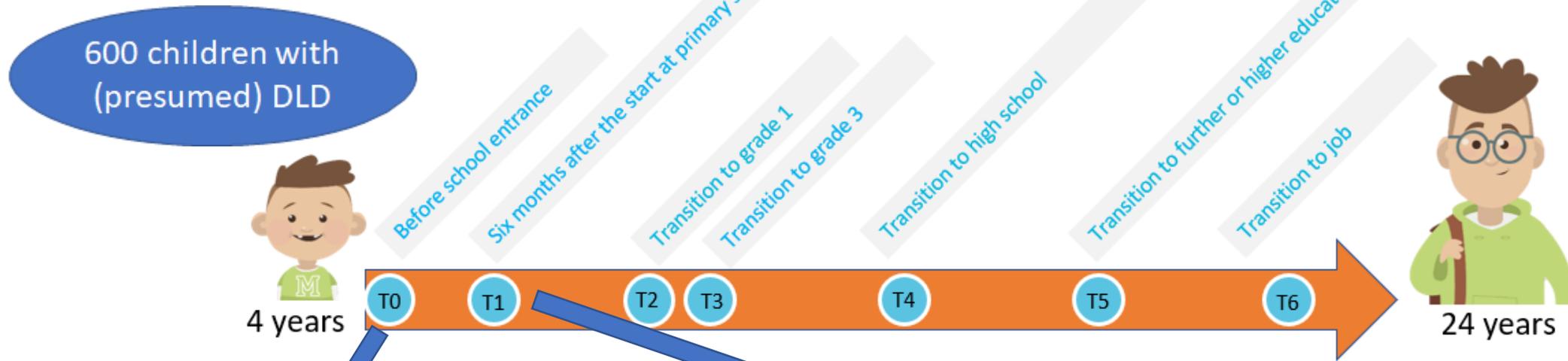
Little is known about the factors that predict the variation in developmental patterns and outcomes in the different domains.

Which factors explain the variation in developmental patterns of children with (presumed) DLD?

What is the relationship between language, intelligibility and communicative participation in 4-year-old children with DLD?

Which factors are predictive for communicative participation in 4-year-old children with DLD?

Methods



Before school entrance (T0)

- Language comprehension (Schlichting¹)
- Receptive vocabulary (Peabody Picture Vocabulary Test²)
- Expressive vocabulary (Schlichting³)
- Expressive grammar (Schlichting³)
- Non-verbal IQ (SON-7 or SON-8⁴)

Six months after the start at primary school (T1)

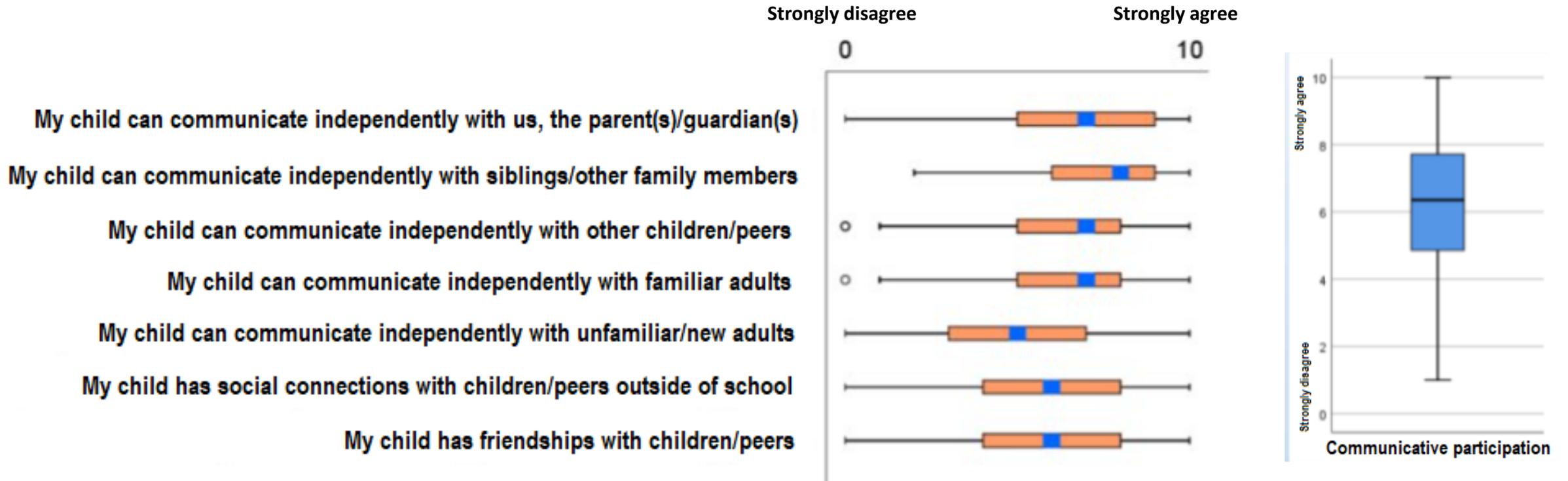
- Background measures: a.o. multilingualism, SES, gender, number of siblings
- Intelligibility (Intelligibility in Context Scale⁵)
- Communicative participation⁶
- Quality of Life (KINDL-R⁷)
- Strengths and Difficulties Questionnaire⁸
- School advice, type & results

Participants

Background variables (N = 333)		
	Mean (SD)	Range
Age (years;months) at T0 (N = 303)	3;9 (0;3)	3;1-4;8
Age (years;months) at T1 (N = 330)	4;6 (0;3)	4;3-6;3
Gender (N = 331)		
	Number	%
Male	243	73
Female	88	27
Multilingualism (N = 330)		
Multilingual	58	18
Monolingual	272	82
Parental education (N = 329)		
Low	72	22
Middle	163	50
High	94	28

Communicative and cognitive variables (N = 333)		
	Mean (SD)	Range
Language comprehension (N = 290)	88 (15)	55-139
Receptive vocabulary (N = 265)	97 (13)	55-134
Expressive vocabulary (N = 295)	86 (19)	55-131
Expressive grammar (N = 295)	78 (10)	63-109
Intelligibility (N = 330)	4 (0.5)	2-5
Communicative participation (N = 326)	6 (1.8)	1-10
Nonverbal IQ (N = 266)	100 (14)	59-136

Communicative participation



Correlation analyses

Pearson Correlation	Background measures				Language				IQ	ICS		
	1	2	3	4	5	6	7	8	9	10		
1. Gender	1											
2. Multilingualism	,074	1	-									
3. Socio Economical Status (SES)	,022	-,021	1									
4. Nr. of siblings	-,038	-,053	-,017	1								
5. Receptive Vocabulary	-,008	-,289**	,187**	,029	1							
6. Expressive Vocabulary	,050	-,296**	,175**	-,060	,611**	1						*
7. Expressive Grammar	,138*	-,128*	,139*	-,080	,464**	,686**	1					
8. Language Comprehension	,095	-,260**	,075	,080	,486**	,515**	,412**	1				
9. Non-verbal IQ	,043	,027	,187**	-,075	,375**	,318**	,284**	,374**	1			
10. Intelligibility (ICS)	,041	-,029	,077	-,053	,133*	,300**	,341**	,173**	,094	1		
11. Communicative participation	,091	,005	,089	-,083	,146*	,314**	,381**	,151*	,060	,653**	1	

Interpretation Pearson's R

very weak

weak

moderate

strong

Multiple regression analyses

Regression Coefficients for predicting Communicative Participation (T1)

Variable	B	95% CI		β	t	p
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(Constant)	-4,702	[-6,455,	-2.949]			
Intelligibility (T1)	2,061	[1.706,	2.415]	.609	11.452	.000
Expressive grammar (T0)	,037	[.017,	.058]	.195	3.668	.000

Note $R^2_{adj} = .475$ (N=205, $p = 0.000$). CI = confidence interval for B

- Intelligibility (T1) and (to a lesser extent) expressive grammar (T0) explain a significant proportion of variance in communicative participation at T1. In total, 47,5% of the variance is explained by these two measures.
- Language comprehension, receptive and expressive vocabulary, Nonverbal IQ, and the background measures do not add significantly to explaining the variance in communicative participation

Take-home message

The communicative participation of young children with (presumed) DLD depends on their intelligibility and expressive grammatical skills

Intelligibility should (also) be taken into account when looking at communicative participation

Clinicians should be aware of the role of intelligibility and expressive grammar skills in communicative participation

References

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