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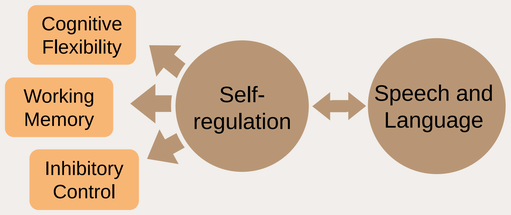
DIFFERENCES IN PRESCHOOLERS' SELF-REGULATION: THE IMPACT OF SPEECH AND LANGUAGE DELAYS

Jannah R. Moussaoui, Ahmad Ahmadi, Megan M. McClelland
Oregon State University

INTRODUCTION

- During the preschool years, children make significant strides in self-regulation, skills that lay the foundation for their interpersonal and problem-solving abilities (Conti-Ramsden & Durkin, 2012; Zubrick et al., 2015).
- Some children—particularly those who are younger, male, are learning English, have language disorders, or have mothers with lower education levels—may experience difficulty with self-regulation skills (Montroy et al., 2016).
- Theorists such as Vygotsky emphasize the role of language in the development of self-regulation (Vygotsky, 1962).
- The relation between self-regulation and language has primarily been examined in children with neurodevelopmental disorders or specific language impairment (Marton et al., 2014; Petersen et al., 2015). As such, less is known about broader forms of language delays in community populations.



PRESENT STUDY

The present study utilized data from a larger study on self-regulation measurement (McClelland et al., 2014) to examine the development of self-regulation skills in preschoolers with speech/language delays compared to their peers.

Research Questions:

1. How do children with speech/language delays perform on self-regulation measures in the fall compared to their peers?
2. Is there a difference in how children with speech/language delay's self-regulation skills change over the school year compared to their peers?

Hypotheses:

1. Children with speech/language delays will demonstrate lower skills on self-regulation measures compared to their peers at the beginning of the school year.
2. Children with speech/language delays will experience a smaller change in their self-regulation skills from the fall to spring of preschool compared to their peers.

METHOD

Participants:

422 preschoolers (*M* = 56.11 months, *SD* = 3.88) split over two cohorts.

Study timeline:

Upon consenting to the study, families were sent a demographics questionnaire.

In the fall (time point 1) and spring (time point 2) of preschool, research assistants visited classrooms to assess children on various measures.

Measures:

- Head-Toes-Knees-Shoulders (HTKS, Global self-regulation)
- Day-Night Stroop (Day-Night; Inhibitory control)
- Dimensional Change Card Sort (DCCS; Cognitive flexibility)

RESULTS

- No group differences in gender, age, Spanish-speaking status, or maternal education levels.
- Children with speech/language delays performed worse compared to their peers on all self-regulation measures at both time points, with the exception of the fall HTKS scores, t(328) = 1.30, p = 0.195

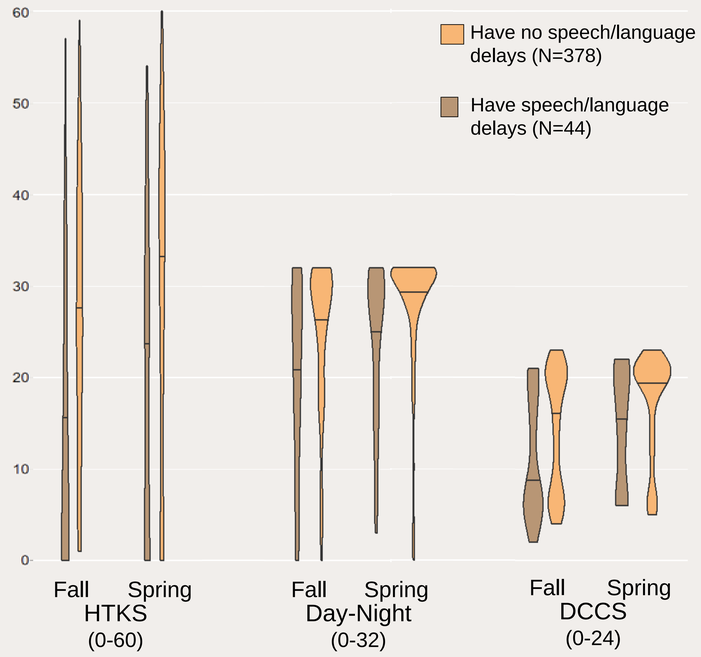
Predictors of Fall Self-regulation Scores

- The overall models for HTKS [$F(5, 308) = 8.63$, $p < 0.01$], Day-Night [$F(5,310) = 5.53$, $p < 0.0001$], and DCCS [$F(5, 315) = 12.52$, $p < 0.001$] were all significant, meaning the predictors were related to preschooler's self-regulation scores in the fall
- However, predictors only explained small amounts of variation in children's fall scores (HTKS: 11%; DCCS: 15%; Day-Night: 7%).

Predictors of Change in Self-regulation Scores

- Change scores were calculated by subtracting children's spring scores from their fall scores.
- None of the predictors were significant across any of the models, with the exception of maternal education levels on children's change scores on the HTKS (β = 0.08, p = 0.04) and children's age on change scores of the Day-Night task (β =-0.12, p = 0.04).
- Predictors explained <1% of the variability in HTKS, DCCS, and Day-Night scores.
- T-tests on change scores between children with speech/language delays and their peers yielded no statistically significant difference.

PRESCHOOLERS' SELF-REGULATION SCORES BY MEASURE, TIME POINT, AND DELAY STATUS



PREDICTORS OF PRESCHOOLER'S FALL SELF-REGULATION SCORES

	Fall HTKS			Fall Day-Night			Fall DCCS		
Predictors	**β**	***t***	***p***	**β**	***t***	***p***	**β**	***t***	***p***
1.	-0.04	-0.73	0.47	-0.13	-2.27	0.02*	-0.11	-1.60	0.05*
2.	-0.04	-0.66	0.51	-0.09	-1.59	0.11	-0.01	-2.01	0.85
3.	0.16	2.93	0.00**	0.13	2.36	0.02*	0.16	-0.20	0.00**
4.	-0.12	-1.91	0.06	0.15	2.36	0.02*	-0.04	3.04	0.48
5.	-0.25	4.03	0.00**	0.20	3.26	0.00**	0.33	5.55	0.00**

PREDICTORS OF CHANGE IN PRESCHOOLER'S SELF-REGULATION SCORES

	Change HTKS			Change Day-Night			Change DCCS		
Predictors	**β**	***t***	***p***	**β**	***t***	***p***	**β**	***t***	***p***
1.	-0.09	-1.47	0.14	0.01	0.01	0.99	0.04	0.76	0.45
2.	0.02	0.28	0.78	0.04	0.63	0.53	-0.01	-0.10	0.92
3.	-0.11	-1.80	0.07	-0.12	-2.08	0.04*	-0.09	-1.60	0.10
4.	0.01	-0.11	0.92	-0.05	-0.75	0.45	-0.10	-1.58	0.12
5.	0.08	1.21	0.04*	-0.03	-0.48	0.64	-0.11	-1.58	0.11

Note
* indicates p < 0.05, ** indicates p < 0.01
Predictors are speech/language delays (1), child's gender (2), age (3), Spanish-speaking status (4), and maternal education level (5)

DISCUSSION

Summary

- Results partially supported the study's first hypothesis, documenting lower self-regulation (working memory, cognitive flexibility, and inhibitory control) for children with speech/language problems in the fall and spring of preschool on most measures.
- The second hypothesis was not supported. Although preschoolers with speech/language delays begin and end the school year with significantly lower self-regulation skills than their peers, the overall change in their self-regulation skills from fall to spring was not statistically different compared to those without such delays.

Limitations and Future Directions

- The study sample size for children with speech/language delays was relatively small, thereby making group comparisons more difficult.
- Parents were asked to dichotomously (i.e., yes or no) indicate whether or not their child experienced speech delays or language delays.
- Only two time points were examined. As such, it is unclear if this disparity in self-regulation skills persists at later ages, if the gap widens, or if children with speech/language delays eventually catch up to their peers.
- Considering the critical role of self-regulation skills in children's development and academic outcomes, further research is necessary to understand the longitudinal relationship between self-regulation and speech/language delays.

REFERENCES

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CORRESPONDENCE

Any correspondence concerning this poster can be addressed to Jannah R. Moussaoui. E-mail: moussaoj@oregonstate.edu

Oregon State University