



Examining Language Outcomes from a Naturalistic Language Intervention for Minimally Verbal Children with Autism



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Introduction

- The use of an Augmentative and Alternative Communication (AAC) device with minimally verbal children has shown to be successful in increasing spontaneous language during a naturalistic language intervention (Olive et al., 2006).
- Language and intervention practices for minimally-verbal children with ASD are poorly understood (Kasari & Target-Flusberg, 2013)
- When sign language and spoken language are taught simultaneously, children with ASD learn communication more quickly than if they learned sign or spoken language alone (Mirenda, 2003). Children with ASD often have fine motor delays, despite known understood connection between motor skills and ASD symptomology (Seal & Bonvillian, 1997)
- Speech generating devices (SGDs) are a type of augmentative and alternative communication (AAC) that are useful because of their flexibility and because they are easy to understand. (Bradshaw, 2013)
- Both Enhanced Milieu Teaching (EMT) and Joint attention, Structured Play, Engagement and Regulation (JASPER) interventions paired with an AAC device have been shown to be effective interventions for increasing spontaneous language (Kasari et al., 2014).

Research Questions

The purpose of this study is to examine the effect of change in verb use during the intervention on ultimate language outcomes regardless of AAC assignment

- When controlling for initial receptive language, does a change in **spontaneous** verb use after 12 weeks of intervention predict a change in child comment use at week 24?
- When controlling for initial receptive language, does a change in **spontaneous** verb use after 12 weeks of intervention predict spoken and total social communicative utterances at week 24?

Method

- 20 minimally verbal children with ASD
 - 5-8 years old (M=6.46, SD=1.11)
 - Fewer than 20 spoken words at entry
 - A subsample from Kasari and colleagues JASP-EMT RCT (2014).
- Intervention:
 - During the first 12 weeks 10 participants were randomly assigned to use an AAC during intervention
 - Two 45-minute clinic sessions per week, totaled 48-56 sessions
 - Children were evaluated for response to treatment after 12 weeks of intervention
 - Teach, Model, Coach, and Review procedures used each week to teach parents specific strategies for teaching language
 - Direct intervention from an EMT therapist each session

Procedures and Measures

- Measures were collected from first phase of Kasari et al. (2014) at the following time points
 - pre-intervention
 - 12 weeks into intervention
 - 24 weeks into intervention
- 20-minute language samples transcribed and coded for outcome language variables
 - Reported as rate per 10 minutes for each observation

Measure	Constructs	
Naturalistic language sample: (20 minutes, transcribed and coded from video)	Number of different words	NDW
	Spontaneous use of verbs	SVERB
	Social communicative utterances	SCU
	Verbal social communicative utterances	VSCU
AAC treatment assignment	Comments	COM
	First randomization treatment assignment	AAC
Peabody Picture Vocabulary Test	Initial standardized receptive language score	PPVT

Results

RQ1: Predictors of change in comments

	B	Std. Error	Sig.
SVERB	.436	.132	.005
PPVT_pre	-.377	-.527	.023

- Change in verb use in the first 12 weeks significantly predicts a change in comment use at the final time point (24 weeks of intervention) when controlling for initial receptive language score

RQ2: Predictors of change in SCU

	B	Std. Error	Sig.
SVERB	1.196	.419	.012
PPVT_pre	.027	.478	.956

- Change in verb use in the first 12 weeks significantly predicts a change in total social communicative utterances (SCU) at the final time point (24 weeks of intervention) when controlling for initial receptive language score (which does not appear to be related to SCU outcomes)

RQ2: Predictors of change in verbal SCU

	B	Std. Error	Sig.
SVERB	.943	.345	.015
PPVT_pre	.219	.393	.585

- Change in verb use in the first 12 weeks significantly predicts a change in total **verbal** social communicative utterances (SCU) at the final time point (24 weeks of intervention) when controlling for initial receptive language score (which does not appear to be related to SCU outcomes)

Discussion

- Typical language development shows us that children often learn nouns and requesting words before learning verbs.
- Therefore, we can assume that children with a greater number of verbs in their repertoire have a greater total number of words to pull from when looking to form socially communicative speech. They have also mastered some level of joint attention to be able to move from initiating requests to initiating comments.
- Implications for clinicians include systematically teaching verbs as well as joint attention when looking to increase commenting and SCUs.

Conclusion

- This study suggests that an increase in verb use leads to an increase in comments as well as socially communicative utterances, with the latter being displayed through both SGDs and verbal speech.
- These data implicate the importance of experimentally evaluating the effects of verb learning on SCUs.

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