



A Systematic Review of Language Comprehension Interventions for Beginning Communicators with Autism Spectrum Disorder

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Introduction

- Many individuals with autism spectrum disorder (ASD) are beginning communicators (i.e., those for whom use of symbolic communication is emerging or new; Holyfield, Caron, Drager & Light, 2018).
- In order to progress in their language development, these individuals must acquire both receptive and expressive language skills.
- During early language development, comprehension both precedes and exceeds expression, forming a foundation for expressive language development (Sevcik, 2006)
- Further, comprehension is one of the strongest predictors of later verbal and nonverbal developmental outcomes for children with ASD (Wetherby, Watt, Morgan, & Shumway, 2007).
- Despite the importance of early language comprehension, as well as the fact that individuals with ASD often have difficulty in this area (Davidson & Ellis-Weismer, 2017; Schlosser et al., 2013), comprehension typically receives limited attention in comparison with production (Sevcik, 2006).
- In order to better support development of language comprehension for individuals with ASD, there is a need to identify existing, evidence-based interventions as well as directions for future research to improve practice.

Purpose

The purpose of this paper is to provide a systematic, comprehensive review of the literature pertaining to intervention for comprehension of single spoken words for individuals with ASD and limited speech who are beginning communicators, in order to identify:

- Independent variables and their characteristics
- Dependent variables and their characteristics
- Effects of intervention on comprehension of single spoken words

Methods

INCLUSION CRITERIA	SEARCH	DATA EXTRACTION AND CODING
<ul style="list-style-type: none"> • Single case design • At least one participant was a beginning communicator with ASD • The primary DV was comprehension of single spoken words • Study employed an experimental design • Study was peer-reviewed 	<p>Databases</p> <ul style="list-style-type: none"> • ERIC, LLBA, PsycInfo, Proquest Dissertations and Theses <p>Search term categories</p> <ul style="list-style-type: none"> • Comprehension • Autism • Instruction <p>Author and Ancestry Review</p>	<ul style="list-style-type: none"> • Study ID • Participant characteristics • Independent variable and intervention characteristics • Dependent variable • Effect size • Certainty of evidence

Results

The systematic search identified 15 studies, for a total of 23 interventions and 39 participants

PARTICIPANTS	DEPENDENT VARIABLES	CONCEPTS TAUGHT
<ul style="list-style-type: none"> • Full age range: 2;7 - 19 years <small>24 preschool-aged (<5 yrs) 14 school-aged (5-18 yrs) 1 adult (>18 yrs)</small> • 31 (80%) were male • 8 (20%) were female 	<ul style="list-style-type: none"> • 21(91%) of the interventions measured correct picture identification • 2(9%) of the interventions measured correct picture OR object identification 	<ul style="list-style-type: none"> • Nouns (21 interventions) • Verbs/action words (6 interventions) • Descriptors (4 interventions) • Social words (1 intervention) • Prepositions (2 interventions)
INTERVENTION CONTEXT	TYPE OF INTERVENTION TASK	INTERVENTION COMPONENTS
<ul style="list-style-type: none"> • 20(87%) of interventions were delivered outside of the context of another activity • 3(13%) of interventions were embedded within the context of another activity (such as play) 	<ul style="list-style-type: none"> • Observe a model (3 interventions) • Demonstrate comprehension (17 interventions) • Use the target concept expressively (2 interventions) • Demonstrate comprehension and use (1 intervention) 	<ul style="list-style-type: none"> • Modeling • Least-to-most prompting • Most-to-least prompting • Flexible prompt fading • Positional prompts • Time delay • Modified array size • Reinforcement • Error correction

OUTCOMES

- All 39 participants demonstrated positive gains in single word comprehension
- Positive gains were noted across contexts, intervention tasks, word types and intervention components
- A wide range of modeling, prompting, and feedback approaches were associated with large or very large effect sizes

GENERALIZATION

- 4 (27%) of the studies measured generalization
- 11 (73%) did not

QUALITY OF EVIDENCE

- 6(40%) of the studies offered evidence that was suggestive, preponderant or conclusive
- 9(60%) of the studies were inconclusive

Discussion and Implications

- Evidence suggests that children, adolescents and adults with ASD can demonstrate improved single word comprehension given instruction.
- The majority of existing interventions for single word comprehension have employed structured teaching approaches delivered outside of the context of meaningful activities and focusing on picture identification, with few measuring generalization.
- The results of this review suggest that a wide range of individuals with ASD may benefit from highly structured interventions for single word comprehension; however, future research is needed to better understand how improved performance on picture identification tasks translates to real world communication contexts and interactions.
- Additional research is needed to delineate the contribution of specific intervention components to the success of the treatment overall.
- There is a paucity of research on single word comprehension interventions for older (above 18 years) individuals with ASD; there is a need for more research involving adults.



References



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