Beyond the "ABA" vs. Eclectic debate:

Why are we making this so complicated?

Brian Boyd, PhD
Director of Juniper Gardens Children's Project
University of Kansas

Presentation Objectives

1. Reflect on current state of EBP movement in ASD Research
2. Provide context for the ABA vs. eclectic intervention debate
3. Discuss next steps for research and practice

Parsimony

Autism Spectrum Disorder

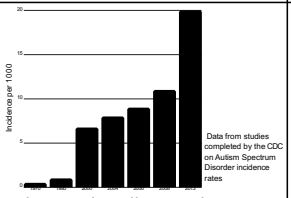
Autism spectrum disorder 101

Life-long, neurodevelopmental disorder

Social differences

Spectrum / Neurodiversity

Gender differences in prevalence



Increasing diagnostic trends

Shift in prevalence of those with a co-occurring intellectual disability

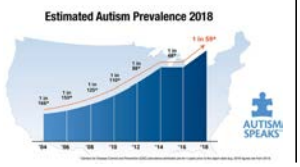
Evolution of Research in the Field of ASD

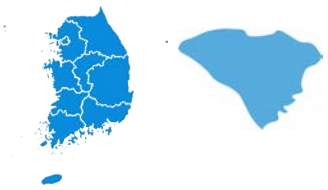
- Kanner credited with providing first accounts of "infantile autism"
- "Refrigerator mothers" (Bettelheim)
- Behavioral therapies to treat symptoms
- Phenomenological and diagnostic research
- Etiology and underlying mechanisms
- ASD across the lifespan
- No single cause so field is prone to fads

ASD Prevalence

1 in 59

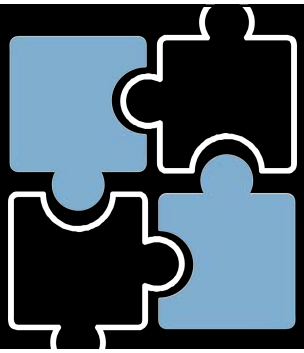
ARE DIAGNOSED WITH AUTISM SPECTRUM DISRODER





Heterogeneity is an Understatement

Evidence-based Practices for ASD

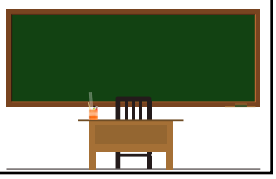


What are EBPs?

Produce specific behavioral and developmental outcomes for a child

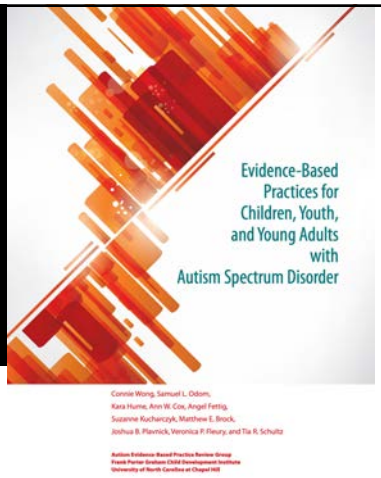
Effectiveness demonstrated in applied research literature

Can be successfully implemented in educational settings



Odom, Colett-Klingenberg, Rogers, & Hatton, 2010

EBPs for Learners with ASD and Families



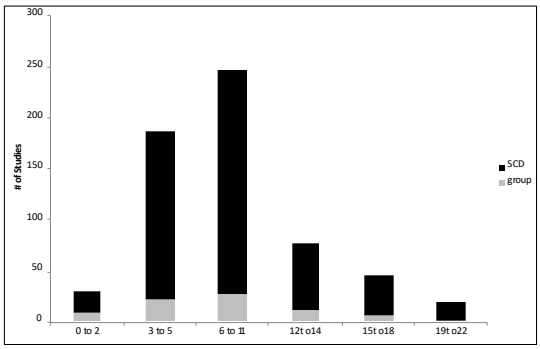
- 2014 update of EBP Review
- Covered years 1990-2011
- 27 EBPs identified

https://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/imce/documents/2014-EBP-Report.pdf

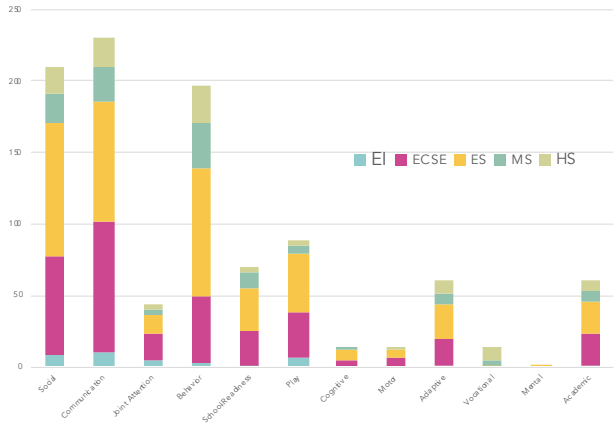
National Professional Development Center

27 Evidence-Based Practices						
Antecedent-Based Interventions	Functional Communication Training	Prompting	Structured Play Groups	Cognitive Behavior Intervention	Modeling	Reinforcement
Task Analysis	Differential Reinforcement	Naturalistic Interventions	Response Interruption / Redirection	Technology-Aided Instruction / Intervention	Discrete Trial Training	Parent-Implemented Interventions
Scripting	Time Delay	Exercise	PECS	Self-Management	Video Modeling	Extinction
Peer-Mediated Instruction / Intervention	Social Narrative	Visual Supports	Functional Behavioral Assessment	Pivotal Response Training	Social Skills Training	

Age of participants in studies



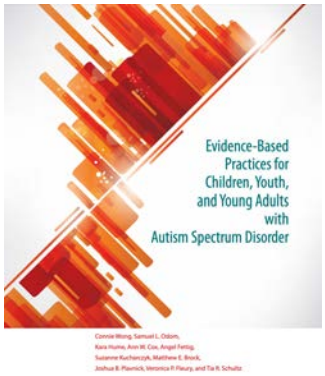
Outcomes



Matrix of EBPs by Outcome and Age

EBP	Social			Communi-cation			Behavior			Joint Attention			Play			Cognitive			School-Readiness			Academic			Motor			Adaptive			Vocational			Mental Health		
	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22
ABI	■	■	■	■	■	■	■	■	■				■	■					■	■		■	■	■				■	■							
CBI		■			■			■									■																		■	
DRA/I/O	■	■			■		■	■	■		■			■					■	■			■						■	■						
DTT	■	■		■	■			■		■	■								■	■		■	■					■	■							
ECE																			■	■						■										
EXT		■		■	■	■	■	■	■		■								■	■								■	■							
FBA							■	■	■		■								■	■		■	■						■							
FCT	■	■		■	■	■	■	■	■				■	■					■	■			■					■	■	■						
MD	■	■	■	■	■	■				■	■		■	■					■	■		■	■								■					
NI	■	■		■	■		■	■		■	■		■	■					■	■		■	■													
PII	■	■		■	■			■		■	■		■	■		■	■		■	■			■					■	■							
PMII	■	■	■	■	■					■	■		■	■					■	■			■	■												
PECS	■	■		■	■																															
PRT	■	■		■	■								■	■																						
PP	■	■		■	■								■	■								■	■	■				■	■	■						
R+	■	■	■	■	■	■	■	■	■	■		■	■	■	■		■	■	■	■	■		■		■			■	■	■		■	■			
RIR	■	■		■	■								■	■					■	■																
SC	■	■	■	■	■	■				■	■		■	■		■	■		■	■												■				
SM									■											■																
SN	■	■		■	■		■	■		■	■		■	■					■	■		■	■					■	■							
SST	■	■	■	■	■		■	■		■	■		■	■	■																				
SPG		■			■			■									■			■			■													
TA		■			■			■									■						■													
TAII	■	■	■	■	■	■				■	■	■				■	■		■	■	■	■	■	■			■			■	■	■				
TD	■	■		■	■		■	■		■	■		■	■					■	■		■	■		■			■	■							
VM	■	■	■	■	■		■	■		■	■		■	■	■	■	■		■	■		■	■	■				■	■	■		■	■			
VS	■	■		■	■		■	■																												

Making Evidence Accessible



AFIRM Autism Focused Intervention Resources & Modules

AFIRM

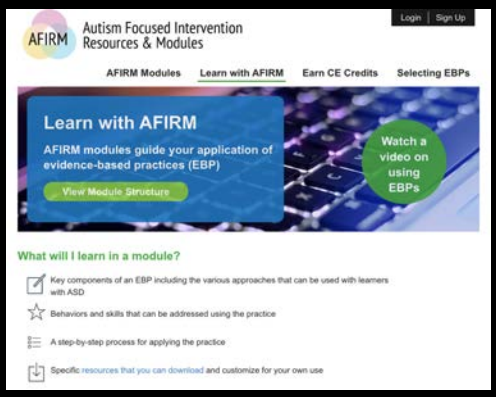
27

E-learning modules for EBPs

TARGET AUDIENCE

- Special Educators
- General Education teachers
- Related service personnel
- Early interventionists
- Parents

- Planning
- Using
- Monitoring



AFIRM Content

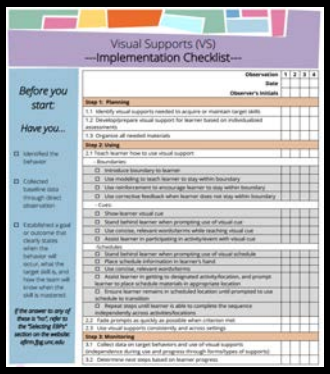
Engaging case examples

Multimedia presentation of content

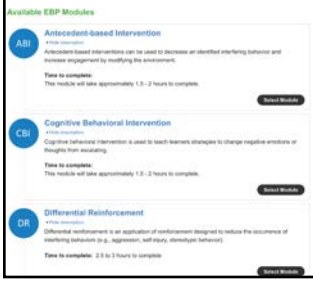
Interactive assessments

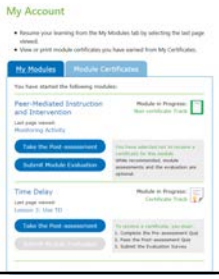
AFIRM Supplemental Materials

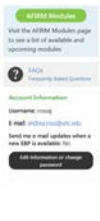
- Implementation checklist
- Step-by-step practice guide
- Parent's guide
- Tip sheet for professionals
- Data sheets
- Evidence-based



AFIRM Certificates

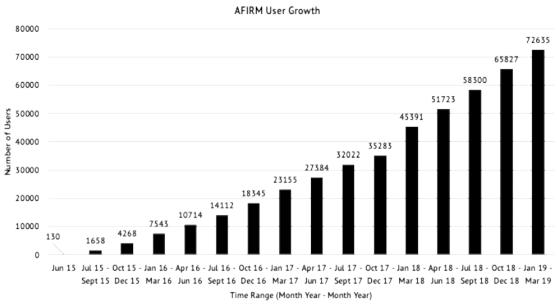






AFIRM User Growth

- Page views: 7,974,000+
- Downloads: 629,000+
- Certificates: 100,800+
- Translations:
  - Arabic
  - Mandarin
  - Italian



Accessible to whom?

Journal of Autism and Developmental Disorders
https://doi.org/10.1007/s10803-019-03945-x

ORIGINAL PAPER

Disseminating Information on Evidence-Based Practices for Children and Youth with Autism Spectrum Disorder: AFIRM

Ann M. Sam[1] · Ann W. Cox[1] · Melissa N. Savage[2] · Victoria Waters[1] · Samuel L. Odom[1]

Abstract
Comprehensive reviews of the research literature have identified that focused intervention practices for children and youth with autism spectrum disorder have evidence of producing positive developmental and learning outcomes. The Autism Focused Intervention Resources and Modules (AFIRM) project has translated evidence-based practices identified by Wong et al. (Journal of Autism and Developmental Disorders 45(7):1951–1966, 2015) into online learning modules. The purpose of this paper is to describe (1) the process for translating the research literature into practical information that practitioners can use, (2) its dissemination through a freely accessible website, (3) the use of the modules by over 64,500 users located in the United States and abroad, (4) knowledge gained as a result of completing the modules, and (5) consumers' evaluations of modules usefulness and relevance.

Keywords Evidence-based practice · Autism Spectrum Disorder · Children · Youth

Table 1 AFIRM user occupation

Occupation	n
Administrator	2701
Early interventionist	3517
Family member	1301
General education	3254
Health care provider	1982
Other	7432
Paraeducator	7568
Related service provider	5349
Special education	17,089
Technical assistant provider	1105
University Faculty	1473
University Student	12,052
Total	64,823

AFIRM Autism focused intervention resources and modules

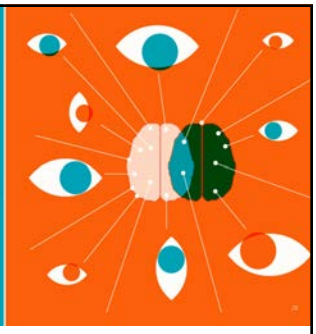
Table 2 AFIRM resources and tools downloads

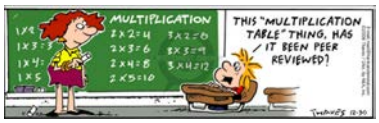
Resource and tools downloads	n
EBP-matrix	6988
EBP CEC professional standards	8705
CEC professional standards	9921
Additional resources	13,268
Parent's guide	14,413
Professional tip sheet	18,935
Implementation checklist	21,803
Step-by-step guide	23,830
Evidence-base	30,684
Planning worksheets	48,101
Other (diagrams, charts, decision trees)	63,991
EBP brief packet	67,333
Data sheets/progress monitoring	75,441
Pictures	130,086
Total	533,499

AFIRM Autism focused intervention resources and modules, *EBP* evidence-based practice, *CEC* Council for Exceptional Children

The types of AFIRM users appear in Table 1. Users identified themselves as special education professionals

What "counts" as evidence?





NPDC Standards for EBPs

Evidence for whom?

Many studies do not adequately report racial / ethnic make-up of sample

Racial / Ethnic Group	*Percentage of Total Sample
White	63.5 %
Multi-racial	20.6 %
Black	6.8 %
Asian	5.2 %
Hispanic / Latino	2.5 %
Other Minority	1.4 %

*Based on 770 (out of 2,489 in Wong 2014) total participants

West, E. A. et al. (2016). Racial and ethnic diversity of participants in research supporting evidence-based practices for learners with autism spectrum disorder. The Journal of Special Education, 50(3), 151-163.

Predicting Response to Early Intervention


frontiers in PEDIATRICS

REVIEW ARTICLE

Predictors of outcomes in autism early intervention: why don't we know more?

Giacomo Vivanti[1,2]*, Margot Prior[1,2], Katrina Williams[3] and Cheryl Dissanayake[1]

Best known predictors

IQ

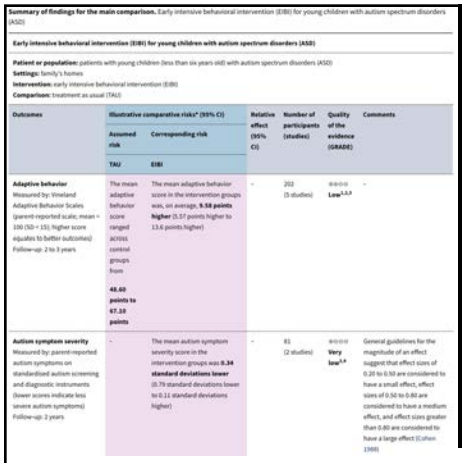
Language abilities

ASD and EBP Summary

We have some EBPs that likely will work for (most) children

We still have a lot to learn about how to best match treatments to an individual's characteristics

"ABA" vs. Eclectic Debate



Summary of findings for the main comparison. Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD)

Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD)

Patient or population: patients with young children (less than six years old) with autism spectrum disorders (ASD)
Settings: family's homes
Intervention: early intensive behavioral intervention (EIBI)
Comparison: treatment as usual (TAU)

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	TAU	EIBI				
Adaptive behavior Measured by: Vineland Adaptive Behavior Scales (parent-reported scale; mean = 100 (SD = 15); higher score equates to better outcomes) Follow-up: 2 to 3 years	The mean adaptive behavior score ranged across control groups from **48.60 points to 67.10 points**	The mean adaptive behavior score in the intervention groups was, on average, **9.58 points higher** (5.57 points higher to 13.6 points higher)	-	202 (3 studies)	⊕⊕⊖⊖ **Low**[1,2,3]	-
Autism symptom severity Measured by: parent-reported autism symptoms on standardised autism screening and diagnostic instruments (lower scores indicate less severe autism symptoms) Follow-up: 2 years	-	The mean autism symptom severity score in the intervention groups was **0.34 standard deviations lower** (0.79 standard deviations lower to 0.11 standard deviations higher)	-	81 (2 studies)	⊕⊖⊖⊖ **Very low**[2,3]	General guidelines for the magnitude of an effect suggest that effect sizes of 0.20 to 0.50 are considered to have a small effect, effect sizes of 0.50 to 0.80 are considered to have a medium effect, and effect sizes greater than 0.80 are considered to have a large effect (Cohen 1969)

Defining ABA within the Context of ASD Treatment

(Reichow et al., 2018).

Conclusions from Reichow Meta-analysis

BASED ON CURRENT EIBI STUDIES, THE FOLLOWING CONCLUSIONS CAN BE DRAWN:

1. EIBI leads to better outcomes than treatment-as-usual (TAU) for 2-5 year olds with ASD
2. The overall state of the evidence is weaker than expected, largely because of inferior study designs
3. Only 1 published study has used a randomized design (Smith et al., 2000)

Defining Eclectic Models or TAU

- Conventional wisdom is that eclectic models are not efficacious (Foxx, 2008)
- Issues may be our working definition of "eclecticism" (Odom et al., 2012)

UNSYSTEMATIC ECLECTICISM

Practices are haphazardly adopted based on the practitioner's personal or professional knowledge base without an identified conceptual framework to guide implementation

TECHNICAL ECLECTICISM

Practitioners make a more purposeful selection of empirically supported treatments from different theoretical perspectives

THEORETICAL ECLECTICISM

Two or more theoretical or conceptual approaches are integrated into a treatment model

Conclusions from Odom Manuscript

1

The type of eclecticism likely matters for determining intervention effectiveness and child outcomes

2

TAU ≠ Unsystematic eclecticism

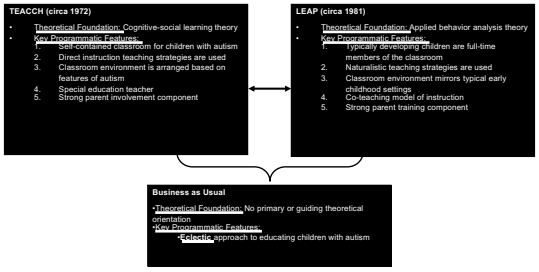
3

We need to better understand and measure what practitioners are doing

The origins of the ABA vs. Eclectic Debate

Primary Goal of TEACCH-LEAP Project

To compare the relative efficacy of two comprehensive intervention programs for treating preschool-aged children with ASD.



- Four year, multi-site project involving the following universities and investigators:
  - University of North Carolina at Chapel Hill (Sam Odom & Brian Boyd)
  - University of Colorado at Denver (Laurie Sperry)
  - University of Miami (Michael Alessandri & Anibal Gutierrez)
  - University of Minnesota (LeAnne Johnson)
- N=75 preschool classrooms serving approximately N=205 children with autism were involved in this study
- Family and child measures were collected at pre-treatment, post-treatment, and 6-month follow-up time points
  - Short- and longer-term efficacy of those treatments
  - Variables that moderate/mediate child response to treatment

Brief overview of the project

CHILDREN

	T1		T2			
Total N	198		185		95	
	NMS		**L**		**T**	
N	**58**		**55**		**85**	
Age (yrs)	4.09		3.97		3.99	
Gender	*M*	*F*	*M*	*F*	*M*	*F*
%	82	13	78	22	82	17
Race/ Ethnicity	*W*	*H*	*W*	*H*	*W*	*H*
%	79	25	84	42	70	36

TEACHERS

	NMS		L		T	
Total N	27		22		25	
Teaching (yrs)	11.38		11.86		7.72	
Gender	*M*	*F*	*M*	*F*	*M*	*F*
N	0	27	1	21	0	25
Race: *White / Black*	*W*	*B*	*W*	*B*	*W*	*B*
N	27	0	21	1	24	1

- 2 Teachers had Associates degrees
- All other teachers had Bachelors or higher
- NMS classrooms (12 inclusive, 16 self-contained

Sample Demographics

Skills and Indicators Classroom Structure ***Raters Please Note: The ratings for classroom structure are to be completed from the perspective of the students with ASD***	Full implementation		Partial implementation		Minimal /No implementation	O	R	Observations/Evidence
1. A daily schedule of activities is used by students and staff; individual schedules are utilized as necessary	5	4	3	2	1			
2. Students are adequately prepared for transitions (e.g., informed in advance of changes in routine or activity)	5	4	3	2	1			
3. Each student spends most of his/her time actively engaged in meaningful learning activities, with little or no unengaged time	5	4	3	2	1			
4. Students are given opportunities to make choices	5	4	3	2	1			
5. Paraeducators in the classroom are actively involved with students in a manner that promotes their independence and learning	5	4	3	2	1			
6. The roles and responsibilities of all team members, including paraeducators, are clearly defined	5	4	3	2	1			
7. Data are collected on all IEP objectives regularly	5	4	3	2	1			
8. Data are summarized, analyzed, and used to make instructional decisions	**5**	**4**	**3**	**2**	**1**			

Assessing Programmatic Quality

Measuring Treatment Fidelity Data

Fidelity of Implementation


TEACCH Fidelity Measure

Classroom Type	TEACCH		LEAP		NMS	
Fidelity	M	SD	M	SD	M	SD
TEACCH measure	4.3	.45	3.8	.46	3.4	.54
LEAP measure	4.0	.45	4.6	.29	4.2	.49
Quality measure	4.2	.38	4.7	.23	4.3	.34

Fidelity data are based on total scores

Classroom Practice Indicator

Supplemental Practices used in Classrooms

	NMS		LEAP		TEACCH	
Classroom Practice	M	SD	M	SD	M	SD
1. Discrete trials	0.89	1.31	1.27	1.39	1.33	1.61
2. Pivotal response training	1.63	1.71	0.91	1.31	0.88	1.33
3. Floortime or DIR	2.89	1.37	2.50	1.47	2.42	1.06
4. TEACCH	2.58	1.55	2.37	1.33	4.00	0.00
5. LEAP	1.19	1.63	3.86	0.47	0.25	0.85
6. Visual supports	3.82	0.62	3.91	0.29	3.71	0.86
7. Technology supports	0.39	0.53	0.74	0.99	0.83	0.88
8. Social skills supports	1.99	0.88	3.00	0.78	2.01	0.89
9. Behavior supports	1.54	0.66	1.38	0.54	1.32	0.51

OVERVIEW OF FINDINGS

- Children improved over time irrespective of classroom type

INTERPRETATION OF FINDINGS

- May reflect importance of programmatic quality & fidelity of implementation
- Difficulty of replicating comprehensive treatment model (CTM) effects when model developer not involved
- Control classrooms may have reflected more of a "technical" vs. "unsystematic" eclecticism
- Overlap of model components between CTMs

Conclusions

Movement towards Common Elements

ASSESSMENT 	ACCESSIBILITY PROMOTION 	APPOINTMENT REMINDERS 	EXPECTATION SETTING 
THERAPIST REINFORCEMENT 	BEHAVIORAL CONTRACTING 	CULTURAL ACKNOWLEDGE 	ETC. 

MENTAL HEALTH

Linsey et al. 2014 identified 22 common elements that support effective client engagement in interventions.

Current State of ASD Interventions

COMMON ELEMENTS

1. 3-part contingency
2. Measurement of ongoing progress
3. Individualized treatment goals
4. Child-initiated teaching episodes
5. Environmental arrangement
6. Natural reinforcers
7. Prompting and prompt fading procedures
8. Turn-taking and reciprocal interactions
9. Modeling
10. Broaden the child's attention focus
11. Adult imitation of child's language behaviors

NDBI S

J Autism Dev Disord (2015) 45:2411–2428
DOI 10.1007/s10803-015-2407-8

ORIGINAL PAPER

Naturalistic Developmental Behavioral Interventions: Empirically Validated Treatments for Autism Spectrum Disorder

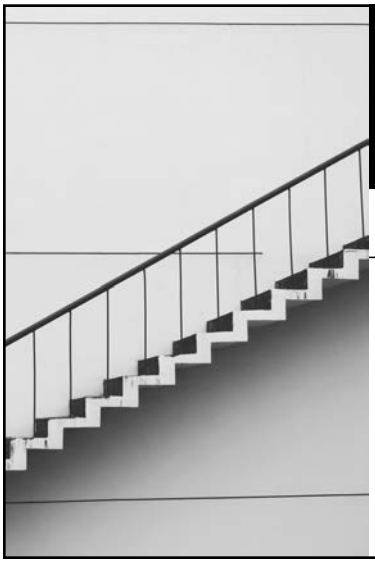
Laura Schreibman · Geraldine Dawson · Aubyn C. Stahmer · Rebecca Landa · Sally J. Rogers · Gail G. McGee · Connie Kasari · Brooke Ingersoll · Ann P. Kaiser · Yvonne Bruinsma · Erin McNerney · Amy Wetherby · Alycia Halladay

Overall Conclusions

What you're doing matters more than what it's called

There is likely more similarity than dissimilarity between behavioral and developmental intervention approaches

Quality matters



Next steps

RESEARCH

- Must identify active ingredients in our interventions
- Need effective interventions for underserved groups in ASD (e.g., females, adults)
- Need to better understand for whom our interventions work

PRACTICE

- Support practitioners to understand and consistently implement common elements
- Determine ways to more effectively integrate the priorities of families and individuals with ASD in intervention selection

Contact information

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