


FIRST WORDS Project: Improving Early Identification of Communication Disorders

Amy M. Wetherby, Ph.D
Julie Cleary, M.S.
Lori Allen, M.S.

Department of Communication Disorders
 Florida State University

Presented at the ASHA Convention 2001



FIRST WORDS Project

Model Demonstration Project

<http://firstwords.fsu.edu>

Amy M. Wetherby, Ph.D.
 Project Director

Need to Improve Early Identification of Developmental Disabilities

Percentage of Population Receiving Special Education or Early Intervention Services in 1998/99:

❖ School-Age Children	
6 to 18 years	11.0%
❖ Preschool Children	
3 to 5 years	4.9%
❖ Infants and Toddlers	
Birth to 2 years	1.6%

(US DOE, 2000)

Communication and language problems are the most common symptom in young children

<i>Disability Category</i>	<i>% Served</i>
Specific Learning Disabilities	51.1
Speech or Language	20.8
Mental Retardation	11.6
Serious Emotional Disturbance	8.7
Multiple Disabilities	1.8
Hearing Impairments	1.3
Orthopedic Impairments	1.2
Other Health Impairments	2.2
Visual Impairments	0.5
Autism	0.5
Deaf-blindness	0.1
Traumatic Brain Injury	0.1

(US DOE, 1998)

Prelinguistic Predictors of Persisting Language Problems

- ❖ **NONVERBAL COMMUNICATION**
 - Emotion and Use of Eye Gaze
 - Rate and Function of Communication
 - Conventional and Symbolic Gestures
 - Complexity of Sounds
- ❖ **SYMBOLIC CAPACITY**
 - Understanding of Words
 - Use of Objects in Play

Referral Sources for FIRST WORDS Project

- ❖ **Physician's- Well Childcare Visits**
- ❖ **Childcare Centers**
- ❖ **Public Places where Families Go**
 - Health Fairs
 - First Birthday Pictures at Newspaper
 - Church Activities
 - Booths at the Mall

FIRST WORDS Project Evaluation Model

- **Step One: Brief Parent Report**
 - CSBS DP Infant/Toddler Checklist
- **Step Two: More Detailed Parent Report**
 - CSBS DP Caregiver Questionnaire
 - Ages and Stages Questionnaires
- **Step Three: Face-to-Face Evaluation**
 - CSBS DP Behavior Sample of child interacting with caregiver and clinician

CSBS Developmental Profile: **Behavior Sample**

- ❖ Warm-up
- ❖ Communicative Temptations (Wind-up toy, Balloon, Bubbles, Jar, and Toys in Bag)
- ❖ Sharing Books
- ❖ Symbolic Play (feeding set)
- ❖ Language Comprehension (object names, person names, and body parts)
- ❖ Constructive Play (stacking blocks)
- ❖ Caregiver Perception Form (caregiver rates how typical child's behavior is during sample)

CSBS Developmental Profile

Measurement Parameters for Checklist, CQ & BS

- SOCIAL COMPOSITE**
- ❖ Emotion and Eye Gaze
 - ❖ Communication
 - ❖ Gestures
- SPEECH COMPOSITE**
- ❖ Sounds
 - ❖ Words
- SYMBOLIC COMPOSITE**
- ❖ Understanding
 - ❖ Object Use

CSBS Developmental Profile

(Wetherby & Prizant, 1998)

Measurement Parameters for Checklist, CQ & BS

- SOCIAL COMPOSITE**
- ❖ Emotion and Eye Gaze
 - ❖ Communication
 - ❖ Gestures
- SPEECH COMPOSITE**
- ❖ Sounds
 - ❖ Words
- SYMBOLIC COMPOSITE**
- ❖ Understanding
 - ❖ Object Use
- ❖ Paul Brookes Publishing 800-638-3775
www.brookespublishing.com

Demographic Comparisons

	<i>Checklist</i>	<i>CQ</i>	<i>BS</i>
N	2,454	701	392
Male	51%	57%	58%
Race			
White	66%	74%	77%
Black	28%	19%	17%
Other	4%	5%	5%
Hispanic	5%	5%	6%

Demographic Comparisons

	<i>Checklist</i>	<i>CQ</i>	<i>BS</i>
N	2,454	701	392
Mother's Age			
Mean	28.8	30.2	31.1
SD	6.2	6.1	6.0
Mother's Education			
Mean	14.6	14.9	14.9
SD	2.3	2.3	2.1

Research Question

What is the relationship between the Checklist & CQ, CQ & BS, and Checklist & BS?

Correlations for CSBS DP Checklist, CQ and BS

Checklist and CQ		
18-24 mos	n = 227	r = .87***
12-17 mos	n = 270	r = .78***
CQ and BS		
18-24 mos	n = 175	r = .71***
12-17 mos	n = 189	r = .65***
Checklist and BS		
18-24 mos	n = 102	r = .67***
12-17 mos	n = 145	r = .59***

Research Question

How does performance on the Checklist, CQ, and BS change over a 3-month test-retest interval?

Test-Retest Stability of CSBS DP Raw and Standard Scores

Checklist (n=223)		
Raw Score	r = .87***	t = 20.07***
Standard Score	r = .84***	t = -0.06
CQ (n=136)		
Raw Score	r = .85***	t = 17.96***
Standard Score	r = .86***	t = 0.97
BS (n=110)		
Raw Score	r = .91***	t = 12.98***
Standard Score	r = .91***	t = -0.07

Research Question

What is the relationship between the CSBS DP measures and Vocabulary Production based on the MacArthur CDI at 24 months?

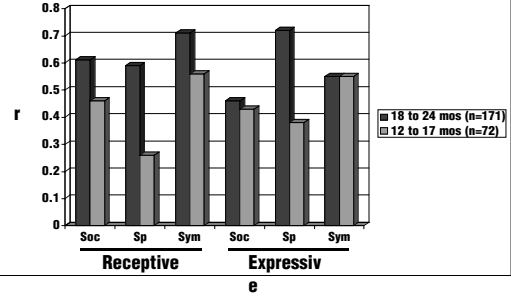
Correlations for CSBS DP and MacArthur CDI Vocabulary Production at 24 months

Test Age	18-24 months	12-17 months
Checklist (n=45, 61)		
Speech Composite	r = .67***	r = .60***
TOTAL	r = .57***	r = .56***
CQ (n=45, 63)		
Speech Composite	r = .83***	r = .62***
TOTAL	r = .72***	r = .65***
BS (n=34, 39)		
Speech Composite	r = .73***	r = .64***
TOTAL	r = .73***	r = .60***

Research Question

What is the relationship between the CSBS DP measures and receptive and expressive language based on standardized testing at 2 years?

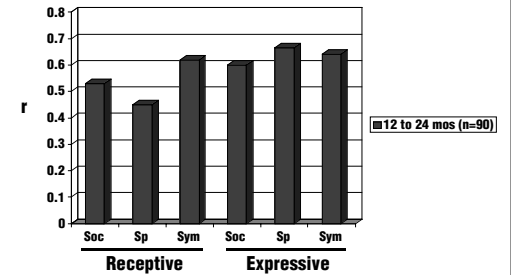
Correlations for CSBS DP Behavior Sample and Standardized Language Measures at 25 months



Research Question

What is the relationship between the CSBS DP measures and receptive and expressive language based on standardized testing at 3 years?

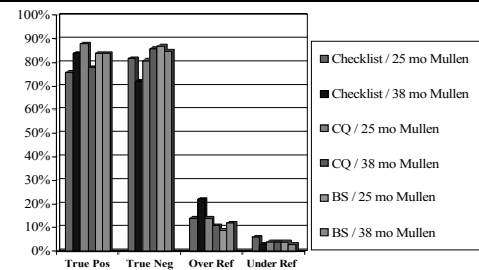
Correlations for CSBS DP Behavior Sample and Standardized Language Measures at 38 months



Research Question

What is the “Hit” and “Miss” rate of the Checklist, CQ and BS?

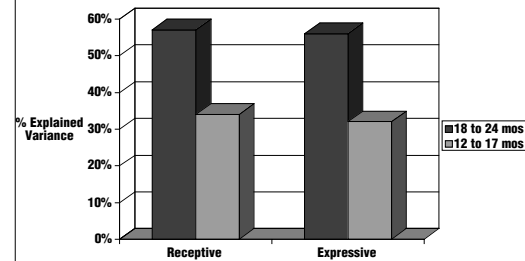
Predictive Validity of Checklist, CQ and BS at 25 and 38 months



Research Question

Do the CSBS DP Composites contribute significantly to the prediction of receptive and expressive language at 2 years?

Regression Analysis: Behavior Sample as Predictor of Language Outcomes at 2 years

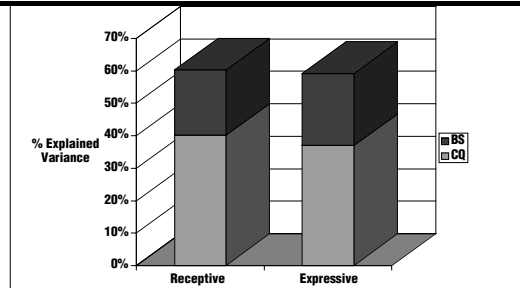


Research Question

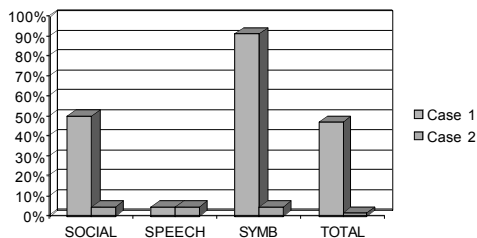
Does the CQ contribute significantly to the prediction of receptive and expressive language at 2 years?

Does the BS significantly improve the prediction?

Regression Analysis: CQ & BS Predictors of Language Outcomes at 2 years



CSBS Developmental Profile: 16 months



Preventative Family Education/Support Services

- ❖ Parent education workshops in the community
 - Developmental Milestones- What is Typical?
 - Strategies for Managing Behavior
- ❖ Resource and referral information
 - information about Part C and other agencies in the community serving infants and toddlers
- ❖ Parent support and networking groups
 - encourage parents with similar interests and concerns to meet
- ❖ Infant-Toddler Play Groups

FIRST WORDS Project Infant-Toddler Playgroups

- ❖ 9 weeks long with 8-12 families
- ❖ All families invited at BS
- ❖ Assigned to Toddler Group (14-24 mos) or Infant Group (6-13 mos)
- ❖ Offered mornings, afternoons, & evenings
- ❖ Focus is on parent-child interaction through clinician modeling and coaching
- ❖ Also serves a diagnostic purpose and allows feedback on child's development and changes

FIRST WORDS Project Infant-Toddler Playgroups

- ❖ Activities encourage motor, cognitive, social, and communication skills
- ❖ Organized with predictable and new activities each week
- ❖ Parent goals for each week are targeted in each play center
- ❖ Home activities for each weekly parent goals are offered

FIRST WORDS Project Infant-Toddler Play Groups

- ❖ How young children communicate
 - Parent goal: Sit face to face
- ❖ Responding to your child's communication
 - Parent goal: Talk about what your child is playing with
- ❖ Learning and communicating in daily routines
 - Parent goal: Wait – count to 5
- ❖ Games for young children
 - Parent goal: What do you want your child to learn from this activity?

FIRST WORDS Project Infant-Toddler Play Groups

- ❖ Using all the senses to learn
 - Parent Goal: Sit face to face and move when your child moves
- ❖ Sharing books with your child
 - Parent goal: Talk about what your child is looking at or touching
- ❖ Strategies and ideas to help with behavior
 - Parent goal: Wait – count to 5 and up the ante
- ❖ Closing week, topic chosen by families

Intensive, Individualized Early Intervention

- ❖ Individualized intervention with SLP
- ❖ Intensity depends on child's and family's needs
 - weekly sessions with playgroup for late talkers
 - 2 or more times a week in natural environments for children with more significant needs
- ❖ Work as a team with parents to identify specific concerns, plan intervention & evaluate outcomes
- ❖ Intervention goals focus on parent-child interaction and child's CSBS profile

Goal Setting Based on Child's Profile

SOCIAL	SPEECH	SYMBOLIC
Gaze & Shared Positive Affect	Consonant Inventory	Language Comprehension
Rate of Communication	Syllable Structure	Variety of Actions in Symbolic Play
Communicative Functions	Inventory of Words	Complexity of Actions in Symbolic Play
Use of Conventional & Distal Gestures	Inventory of Word Combinations	Constructive Play

Prioritizing Intervention Goals for Case 1 at 16 months

- ❖ **SOCIAL COMMUNICATION**
 - -----
- ❖ **EXPRESSIVE SPEECH AND LANGUAGE**
 - Increase use of sounds for communication
 - Increase use of signs and word approximations for symbolic communication
- ❖ **SYMBOLIC CAPACITY**
 - Monitor level of language input

Prioritizing Intervention Goals for Case 2 at 16 months

- ❖ **SOCIAL COMMUNICATION**
 - Increase gaze shifts and shared positive affect
 - Increase rate of communication and range of functions
 - Increase conventional gestures (give, show, reach, wave, point)
- ❖ **EXPRESSIVE SPEECH AND LANGUAGE**
 - Increase use of sounds for communication
- ❖ **SYMBOLIC CAPACITY**
 - Increase functional use of objects