

Speech and Language Goals in Clinical Settings for Young Children who are Deaf/Hard of Hearing

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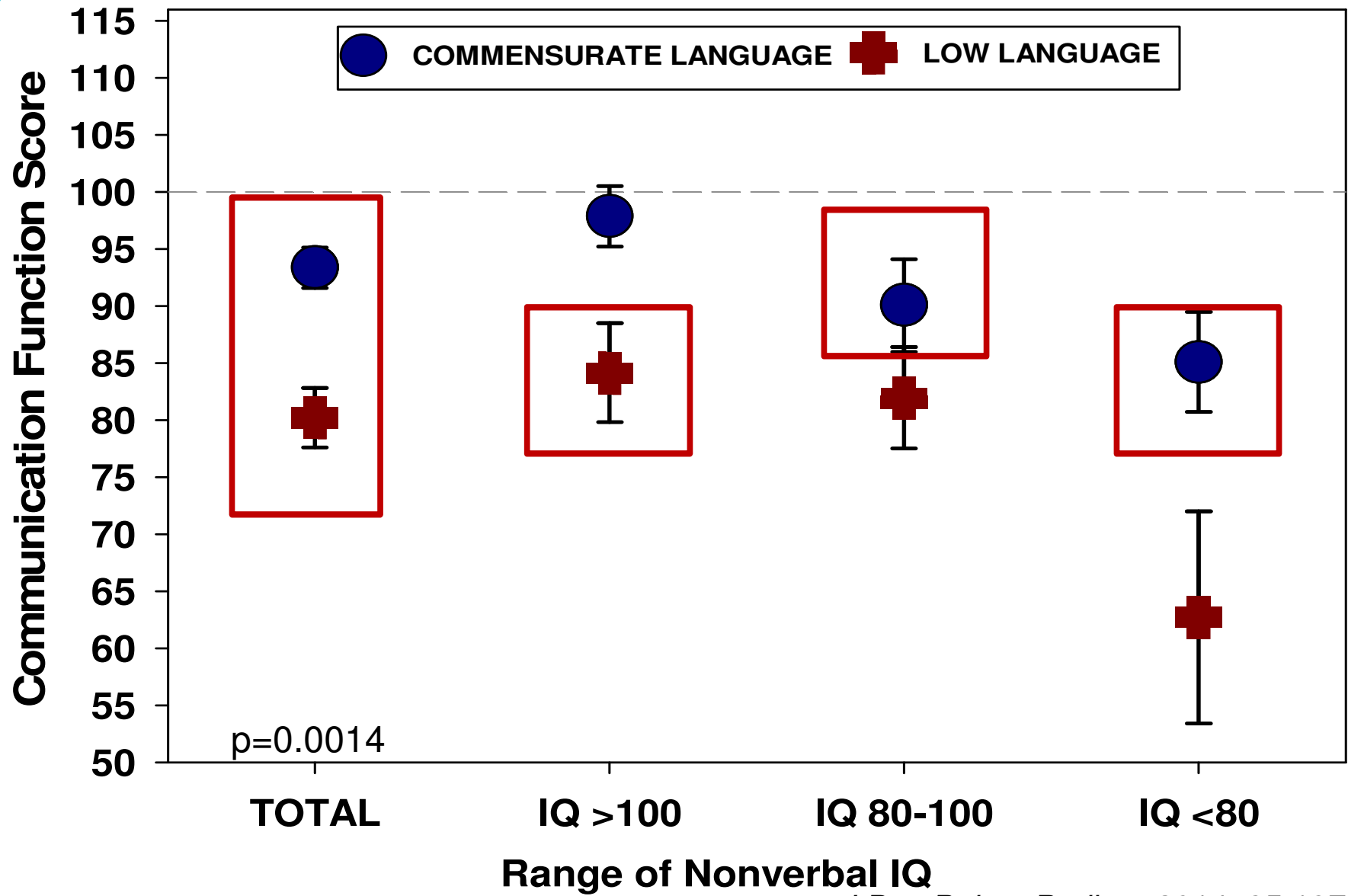


Learning Objectives

- Describe the language needs in young children who are Deaf/hard of hearing (Deaf/HH)
- Recognize the importance of including pragmatic/social skills goals for children receiving speech/pathology services.

Background

- Despite advances in early identification and intervention, our understanding of functional communication skills in children who are deaf/hard of hearing (deaf/HH) is limited.
- Furthermore, our understanding of how speech and language goals for these children link to functional communication outcomes is also limited.

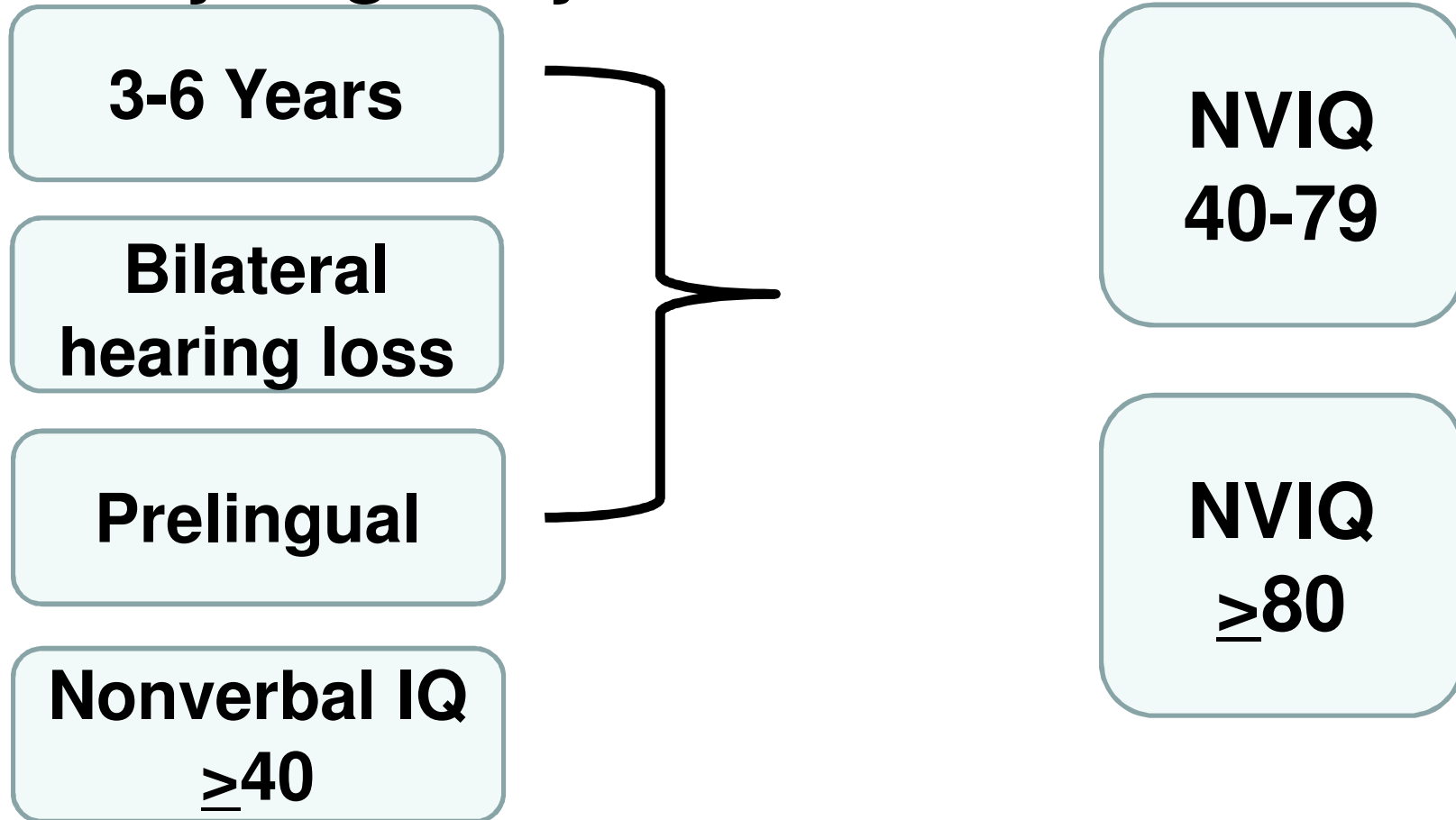


Broader Study Goals

Study on cognition, language and functional communication:

- Children with prelingual mild-profound bilateral hearing loss, ages 3-6 years
- To assess how language levels impact independent functional skills in young children who are deaf or hard of hearing

Study Eligibility



Balanced regarding degree of hearing loss and age

Assessment Tools

- Language Assessment:
 - Preschool Language Scales -5
- Neurocognitive Assessment:
 - Leiter International Performance Scale-R, Differential Abilities Scale
 - Behavioral Rating Inventory of Executive Function
- Functional Assessment
 - Vineland Adaptive Behavior Scale
 - Pediatric Evaluation of Disability Inventory

Example items on Vineland

Playing and Using Leisure Time

Start Ages 0-7	1	Responds when parent or caregiver is playful (for example, smiles, laughs, claps hands, etc.).	2	1	0
	2	Shows interest in where he or she is (for example, looks or moves around, touches objects or people, etc.).	2	1	0
	3	Plays simple interaction games with others (for example, peekaboo, patty-cake, etc.).	2	1	0
	4	Plays near another child, each doing different things.	2	1	0

Relating to Others

4	Smiles or makes sounds when approached by a familiar person.	2	1	0
5	Makes or tries to make social contact (for example, smiles, makes noises, etc.).	2	1	0
6	Reaches for familiar person when person holds out arms to him or her.	2	1	0

C. Functional Use of Communication

11. Names things
12. Uses specific words or gestures to direct or request action by another person
13. Seeks information by asking questions
14. Describes an object or action
15. Tells about own feelings or thoughts

	0	1
11. Names things		✓
12. Uses specific words or gestures to direct or request action by another person		✓
13. Seeks information by asking questions	✓	
14. Describes an object or action	✓	
15. Tells about own feelings or thoughts	✓	

G. Peer Interactions: (Child of similar age)

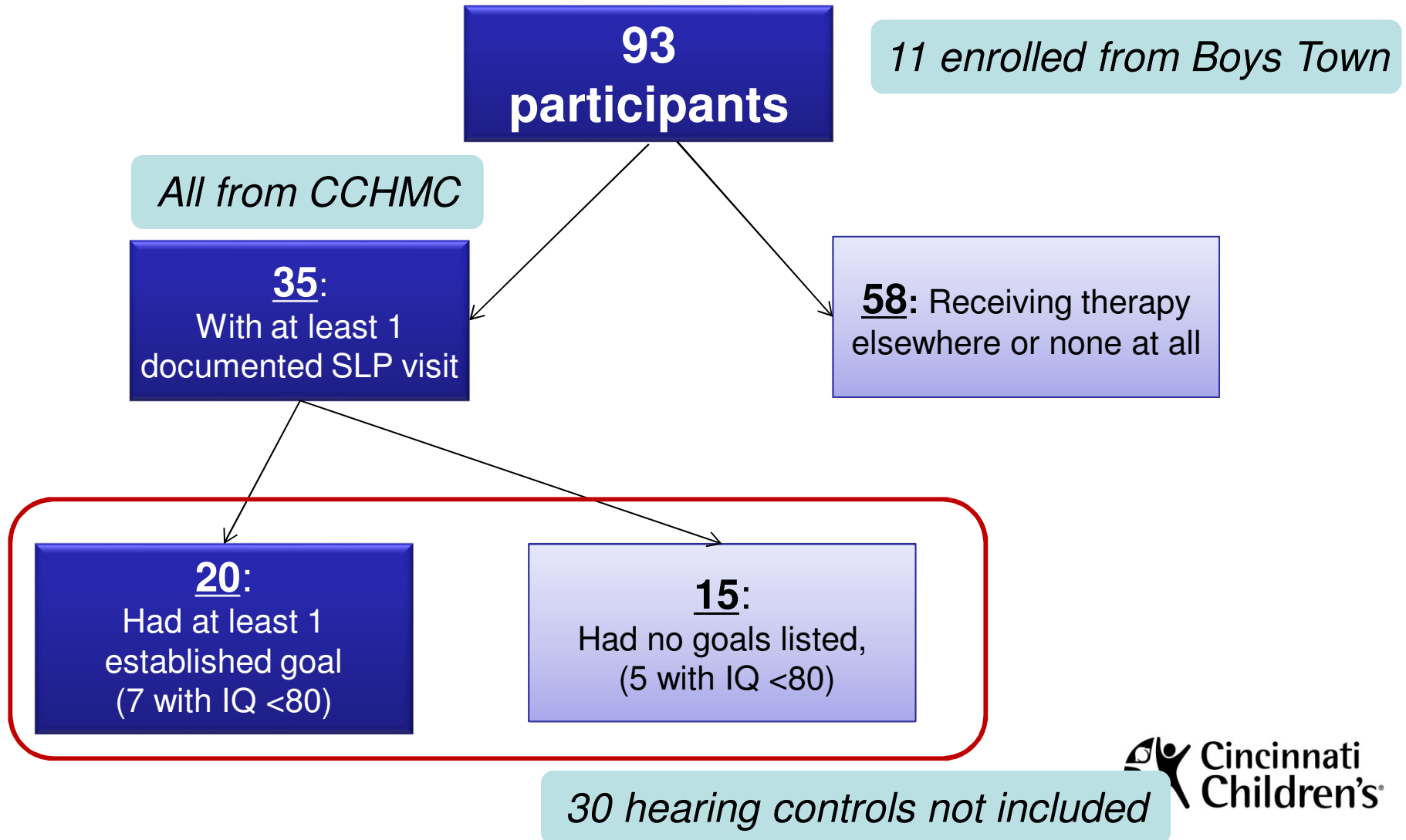
31. Notices presence of other children, may vocalize and gesture toward peers
32. Interacts with other children in simple and brief episodes
33. Tries to work out simple plans for a play activity with another child
34. Plans and carries out cooperative activity with other children; play is sustained and complex

	0	1
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32. Interacts with other children in simple and brief episodes		✓
33. Tries to work out simple plans for a play activity with another child	✓	
34. Plans and carries out cooperative activity with other children; play is sustained and complex	✓	

Objectives of this exploratory study

- To assess the types of speech and language goals set during therapy
- To explore the association between goals and functional communication and social skills
- *Interested in exploring the relationship between pragmatic goals and social functioning*

Enrollment July 2011-Jan 2014



Demographics of entire study cohort

		Total (n=93)
Gender- Male		54 (58%)
Race	White	71 (76%)
	African American	17 (18%)
	Asian	4 (4%)
	Other	1 (1%)
Hispanic		4 (4%)
Insurance	Private	40 (43%)
	Public	34 (37%)
	Combination	19 (20%)
Communication	Oral	86 (92.5%)
	Sign	48 (52%)
	Behavior	22 (24%)
Use hearing aid		57 (61%)
Use cochlear implant		42 (45%)

Methods for current study

- Language goals from clinical settings were reviewed among these children receiving services.
 - Goals set closest to study visit were included
- Coding occurred with two speech language pathologists to ensure agreement of placement of goals into a speech/language category

Methods

Goals were coded in the following categories:

1. Receptive semantic vocabulary based
2. Expressive semantic vocabulary based
3. Syntactic/Grammar/Increased mean length of utterance
4. Pragmatic/Social Language
5. Articulation/Speech Sound
6. Aural Rehabilitation
7. Voice

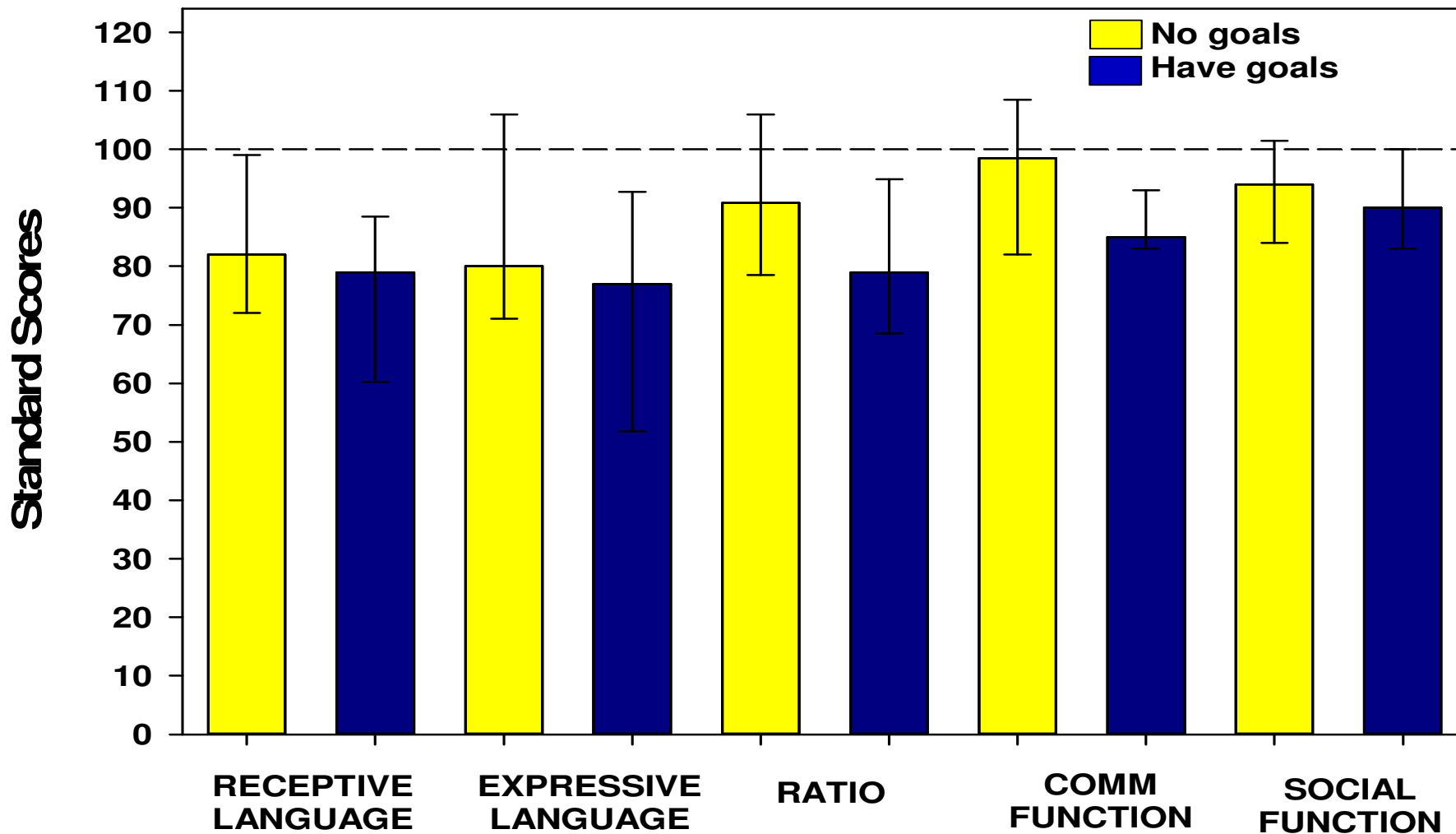
Methods-Additional information

- Demographics
 - Insurance, maternal/paternal education, income
- Therapy information
 - Number of different types of therapies
 - Frequency of therapies (per week or per month)
 - Hours per week in therapy

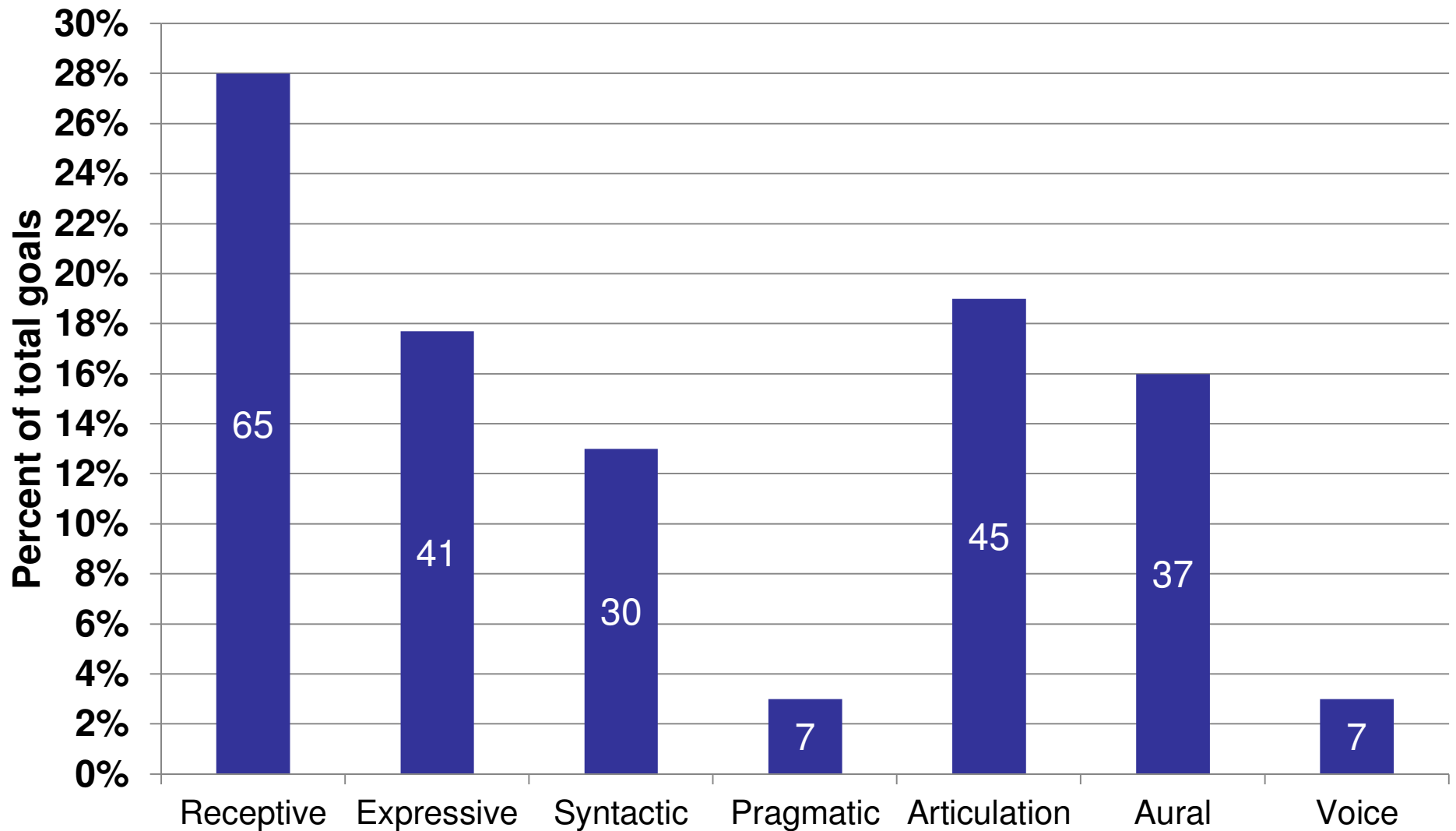
Children with documented visit

	HAVE GOALS n=20	NO GOALS N=15
Median Age	63.2	52.5
Nonverbal IQ	83	98
Race	45% have social functioning scores 1.5 SD below the mean	
Maternal Education - college or more	60%	67%
Insurance	45%	60%
Purpose of visit	50% of children in therapy with goals have a language gap greater than 80% (they are performing at less than 80% of their potential)	
Aids		
Have		
Total hours of speech therapy	1.5	1
Receives speech therapy*	100%	80%
Receives private speech therapy*	79%	17%
Receives school speech therapy*	89.5%	100%
Median number of speech goals	9 (2-34)	---

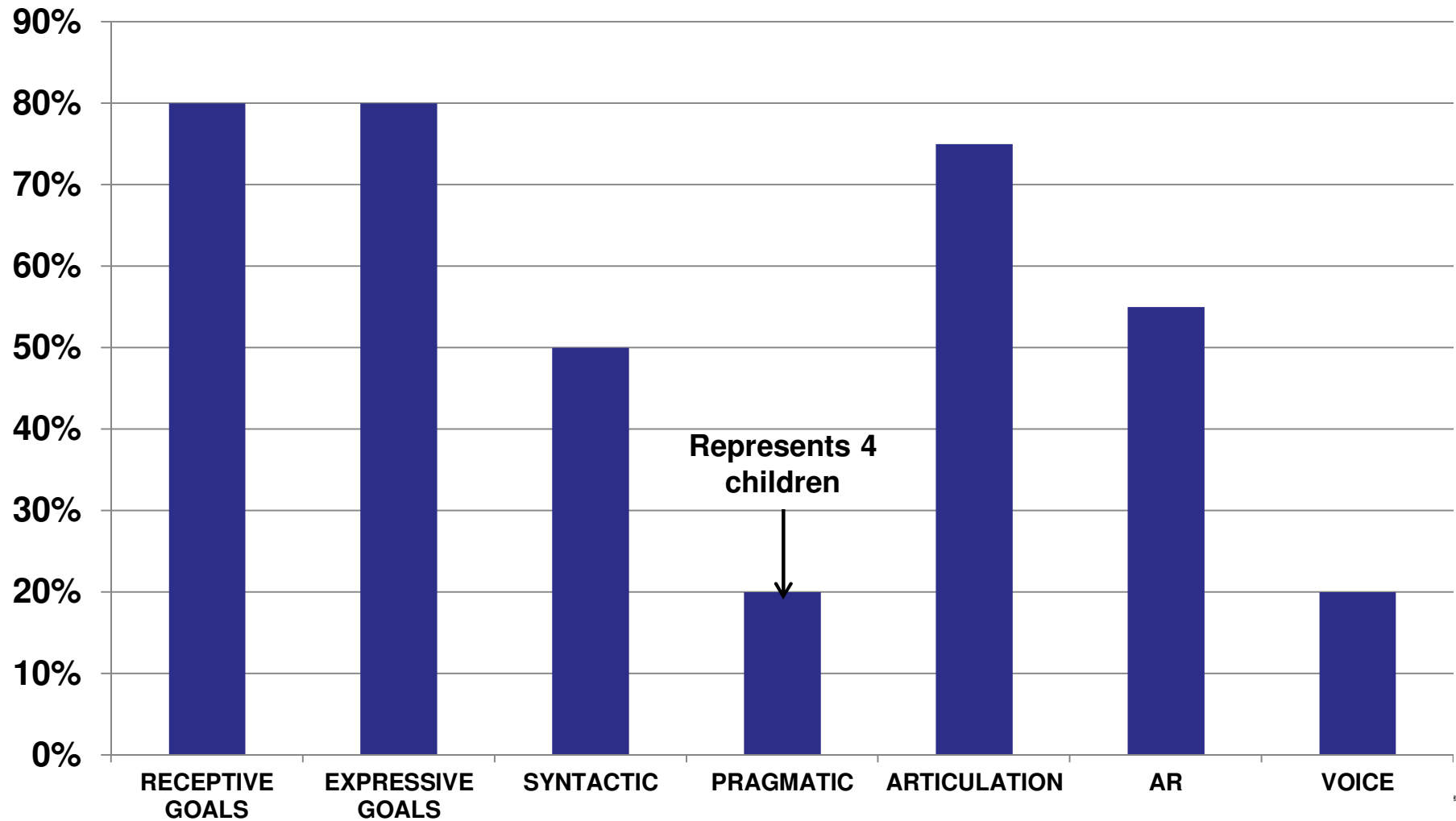
Children with documented visit



20 participants with 232 goals



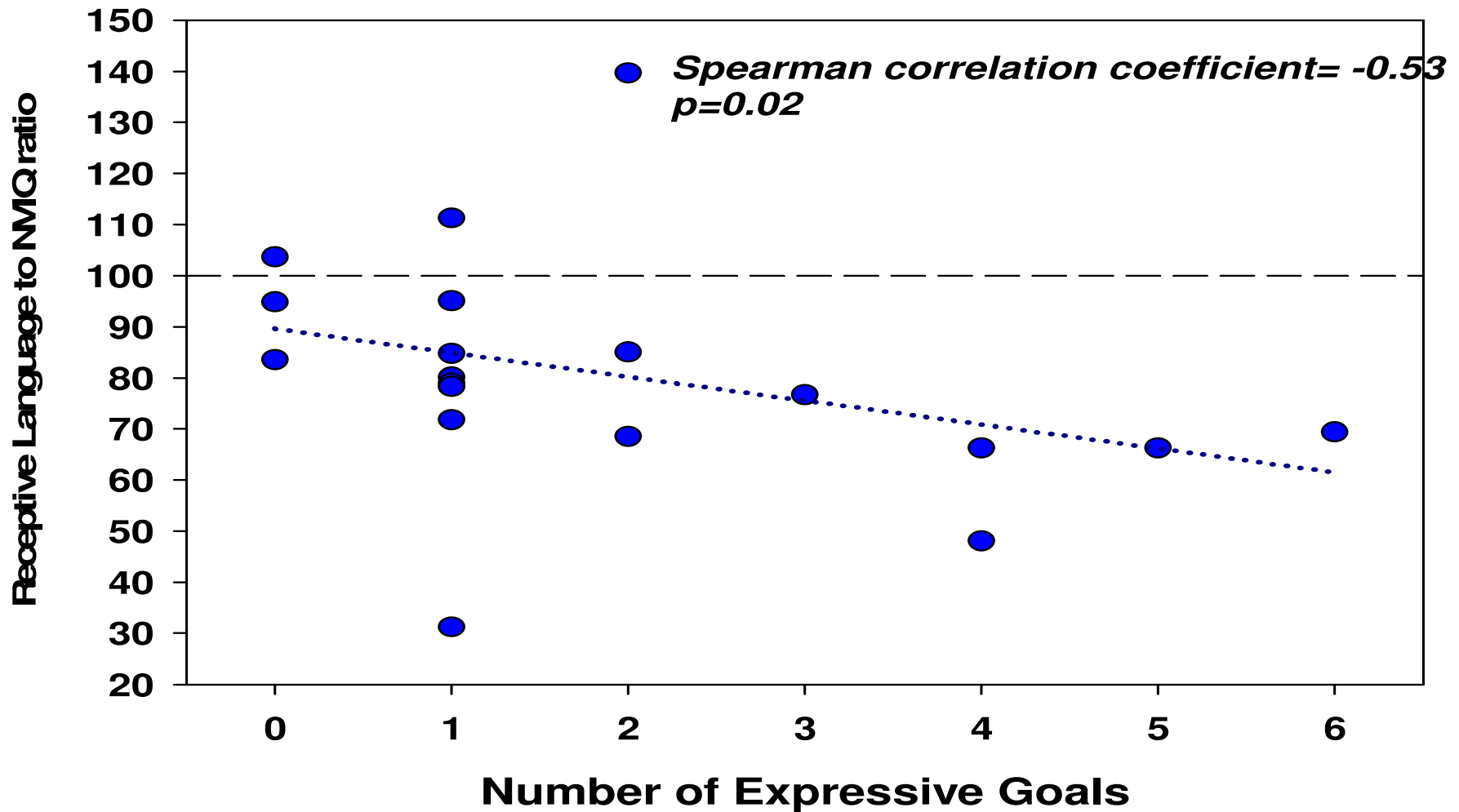
Percent of children who have at least one of the following goals



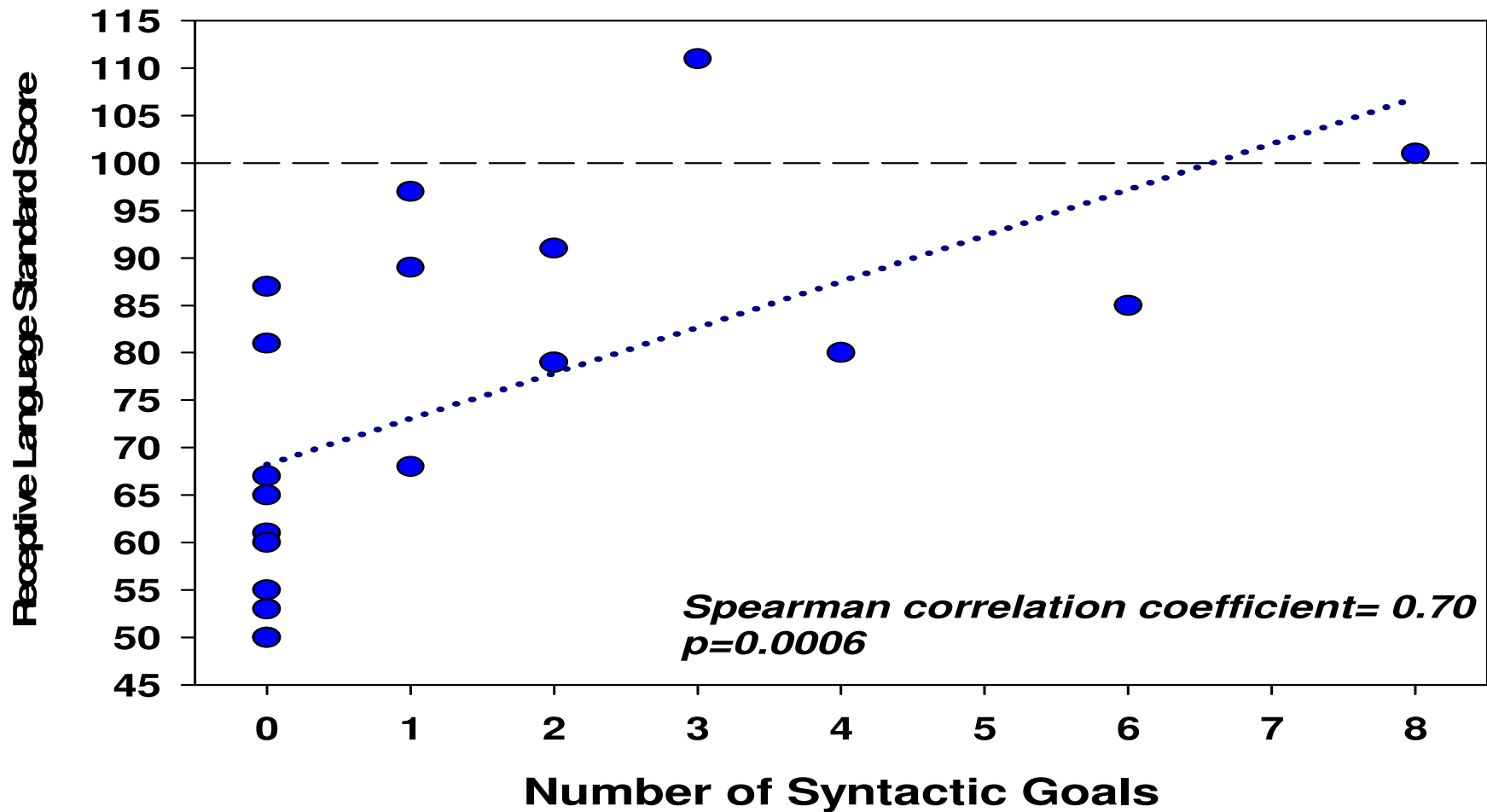
Results

- The number of total speech goals per child ranged from 2-34 (median 9).
- Appropriately, there were more receptive goals (n=65) than any other
 - Median # goals =3 (range 0-10)
- Number of total goals did not vary by age and degree of hearing loss.

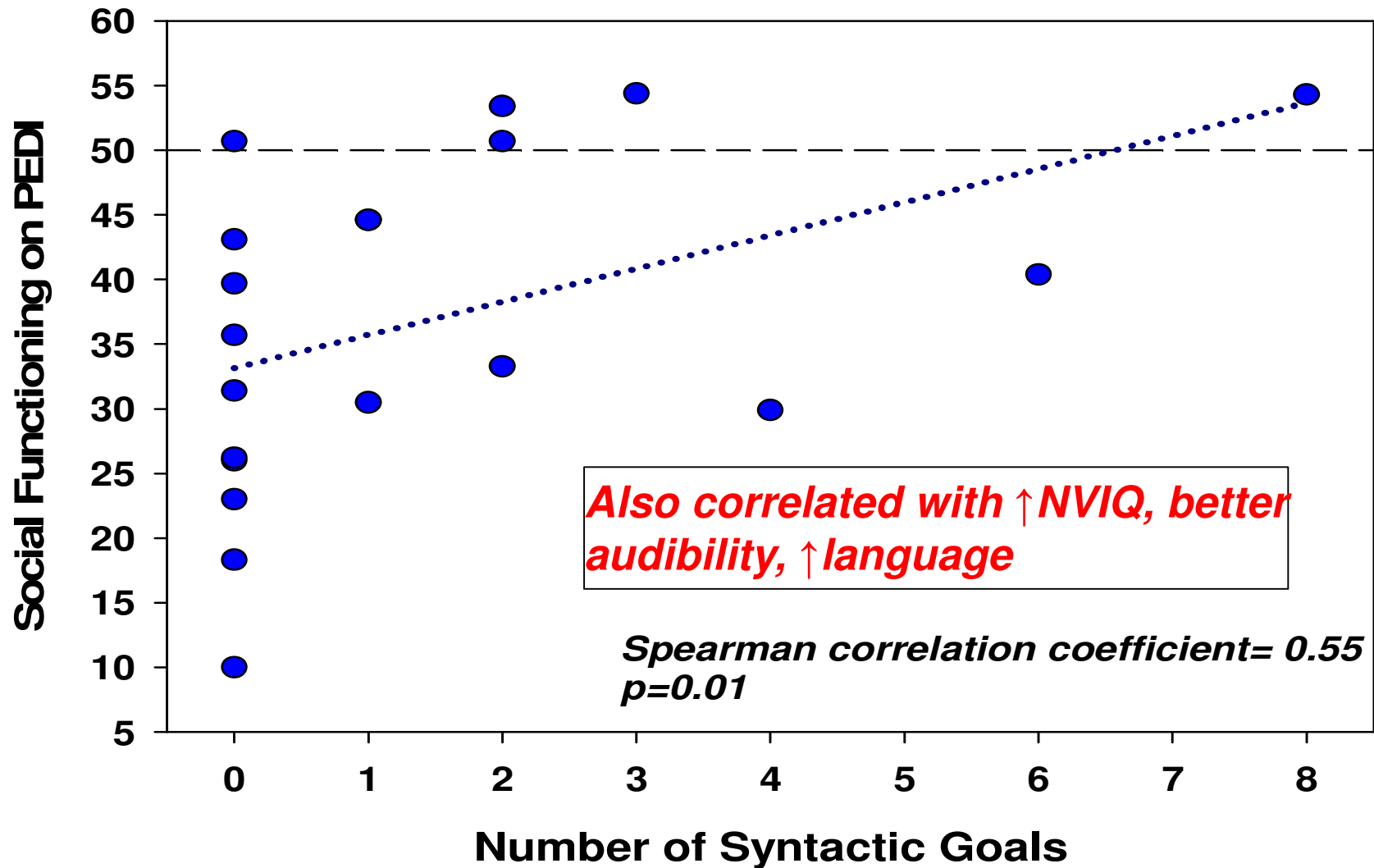
Increasing Expressive Goals with widening language gap



Increasing Syntactic Goals with increasing Language Scores



Syntactic goals with social function scores



Results: Pragmatic goals, language, IQ and HL Severity

	Child 1	Child 2	Child 3	Child 4
Age (months)	48	65	79	42
Total Goals	14	9	5	19
Pragmatic Goals	3	2	1	1
Receptive Language (SS)	91	61	60	80
Expressive Language (SS)	97	50	50	76
IQ	107	73	76	<70
Severity of HL	Mild	Sev/Pro	Sev/Pro	Mild

Child 1: Pragmatic Goals (IQ = 107)

Treatment Goals	Start Date	Status (on-going, met, discontinued, not addressed, % age) Include comments on goals	Date Met
To improve social language skills to functional levels	2/24/2012	Ongoing	
To initiate through use of body language and/or verbalization the desire to begin or continue an activity given minimal cues fading to no cues during structured activities with 70% accuracy.	2/24/2012	Met	4/20/2012
To take turns appropriately during a simple game given minimal cues fading to no cues during structured activities with 70% accuracy.	4/27/2012	Ongoing Game playing requires maximum cues at the beginning of the game, but they can be faded as he becomes more familiar with the sequence/object of the game. He has not demonstrated ability to learn by observing others playing the game or listening to directions regarding how to play without significant cues.	

Child 4: Pragmatic Goals (IQ<70)

Goal - Participation: Develop competencies required to engage in meaningful activities and interactions with family and peers at home, at school and in the community	Start Date	Status	Date Met
LTG - Child will improve pragmatic language skills.			
STG - Child will initiate greetings and/or salutations 3x per session across 3 consecutive therapy sessions given a single visual and/or verbal prompts	9/4/13	Initiated greeting to peers 3x via gesture given minimal prompts. 2nd consecutive session.	

Results

- The majority of goal types not associated with:
 - Degree of hearing loss
 - Aided Speech reception/awareness thresholds
 - Age of child
 - Cognitive abilities
 - Standard language scores
 - Having a cochlear implant vs. HA
 - Using sign language (total communication)



Summary

- Of the 93 children with HL, only 21.5% (n=20) had a documented visit and SLP goals established
- Children who had documented goals appeared to have slightly lower communication and social function scores than those who had no documentation, (though not statistically significant)
- Of those 20, **only 4** had pragmatic/social language goals set

Summary

- Increasing syntactic goals associated with
 - Increasing NVIQ
 - Better aided hearing
 - Better language
 - Lessening language gap (better language relative to cognitive abilities)
 - Better communication and social functioning



Summary

- Lower social functional skill scores suggest a possible need for more pragmatic goals for those receiving speech therapy



Limitations

- Very small sample size at a single institution
 - Many children received therapy in school settings
- We were only able to evaluate documentation of goals, not process for prioritizing goals nor time in therapy dedicated to different goals
 - Didn't determine length of time to achieve goals
- We did not assess the quality of the goals
 - Are they appropriate for child's cognitive abilities

Conclusions

- Social skills and pragmatic concerns were not included within the priorities of out-patient clinical settings, despite considerable under-performance on functional communication measures
- Pragmatic goals need to be identified and established sooner and more often

Acknowledgements

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- The participating families and children
- Julie Hibner, MA CCC-SLP
- Sandra Bechtol, RN
- Collaborators at Boys Town National Research
 - Mary Pat Moeller, PhD
 - Barbara Peterson



Questions?



Extra

Vineland Adaptive Behavior Scale (VABS)

- **383 items**
 - usually (2), sometimes/partially (1), never (0)
- **Communication, Daily living skills, socialization, motor skills**
 - Communication: receptive, expressive, written communication skills
 - Socialization: play and leisure time, interpersonal relationships, coping skills
- Standard scores (mean 100+15)

Example items on Vineland

Listening and Understanding

4	Demonstrates understanding of the meaning of <i>no</i> , or word or gesture with the same meaning (for example, stops current activity briefly).	2	1	0
5	Demonstrates understanding of the meaning of <i>yes</i> , or word or gesture with the same meaning (for example, continues activity, smiles, etc.).	2	1	0
6	Listens to story for at least 5 minutes (that is, remains relatively still and directs attention to the storyteller or reader).	2	1	0

Talking

5	Makes sounds or gestures (for example, waves arms) to get parent's or caregiver's attention.	2	1	0
6	Makes sounds or gestures (for example, shakes head) if he or she wants an activity to stop or keep going.	2	1	0

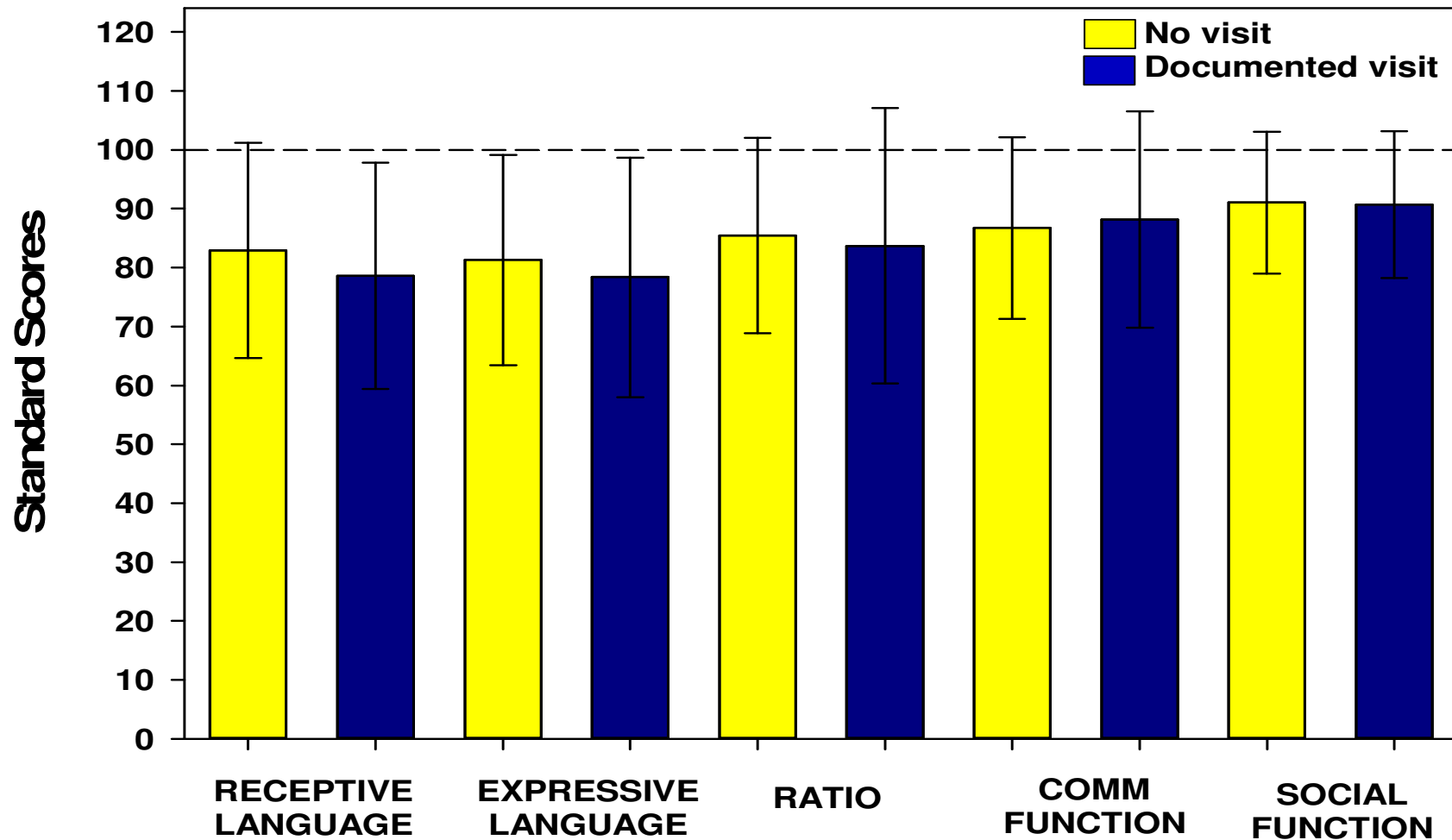
Pediatric Evaluation of Disability Inventory (PEDI)

- Comprehensive standardized measure of essential daily functional activities (6 mo-7.5y)
 - 197 discrete functional skill items
 - Self-care, mobility, social function
 - Standard (mean 50 ± 10) and Scaled Scores (0-100)
- Useful in treatment planning and identifying specific areas where assistance is needed

Children with and without documented visit

	DOCUMENTED VISIT N=35	NO VISIT N=58
AGE STUDY	55.5 (12.9)	58.5 (14.5)
Nonverbal IQ	90.2 (22.7)	97.5 (15.9)
Race - White	69%	76%
Maternal Education - college or more	40%	50%
Insurance Status – public only	34%	38%
Pure Tone Average (4 frequencies)	83.4 (32.4)	75.1 (32.6)
AIDED SRT/SAT	25.3 (15.2)	22.4 (17.4)
HAVE COCHLEAR IMPLANT	51%	41%
TOTAL HOURS IN SPEECH	median 1.5	median 1.0
RECEIVE SPEECH THERAPY*	89%	81%
RECEIVE PRIVATE SPEECH*	57%	28%
RECEIVE SCHOOL SPEECH*	83%	67%

Language and communication for children with and without a documented visit



Implications

- Children at **single word** utterance level - 15-30 mos. development (Brown's Stage I) should be:
 - Using “yes” to affirm and “no” to refuse
 - Asking “what” questions
 - Describing & Requesting (big, hot, more, cold, come, eat, go, help)

Implications

- What if child is nonverbal or speech not understood?
 - Are we supporting other strategies for communicating? (Eye Gaze/Facial Expression; Vocalization; Gestures/Sign Language; Pointing to: objects, photographs, line drawings, symbols; Speech Generating Devices/Mobile technologies such as Ipads, Tablets, Androids)

Pragmatics involve three major communication skills:

- Using language for different purposes
- Changing language according to the needs of a listener or situation
- Following rules for conversations and storytelling
- [ASHA Development Chart](#)

Reference: <http://www.asha.org/public/speech/development/chart/>

