

Map the Gap: Analyzing ASL and Spoken English Language Growth Rates for DHH Children

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RATIONALE

A common language development goal for deaf and hard of hearing (DHH) children is one year's progress within one year's time.

For many DHH children, the gap between their language skills in American Sign Language (ASL) and spoken English and those expected at their age remains open and may widen.

Purpose: Determine the degree to which DHH children are making progress towards achieving age-expected language milestones for ASL and/or English, as well as the influence of attaining Early Hearing Detection and Intervention (EHDI) benchmarks on this progress.

RESEARCH QUESTIONS

RQ1: What proportion of DHH children exhibit a rate of progress that results in (a) narrowing and (b) widening of the gap between their language skills in ASL and/or spoken English and age expectations?

RQ2: When divided into groups by attainment of EHDI benchmarks, what proportion of DHH children exhibit a rate of progress that results in (a) narrowing and (b) widening of the gap between their language skills in ASL and/or spoken English and age expectations?

METHODS

Participants: DHH children enrolled in the Kansas Language Assessment Program–Deaf/Hard of Hearing (LAP-DHH)

- 51 DHH children who use ASL (mean age = 48 months; *SD* = 25 months)
- 69 DHH children who use spoken English (mean age = 45 months; *SD* = 22 months)

Participants varied in hearing level, use of hearing technology, and educational settings.

Procedures: Participants were administered the ASL/English Language Milestones approximately 12 months apart (ASL mean = 11.7 months; English mean = 14.7 months). We calculated each participant's growth rate.

$$\text{Growth Rate (GR)} = \frac{\text{Mastered Language Level}}{\text{Months Between Administrations}}$$

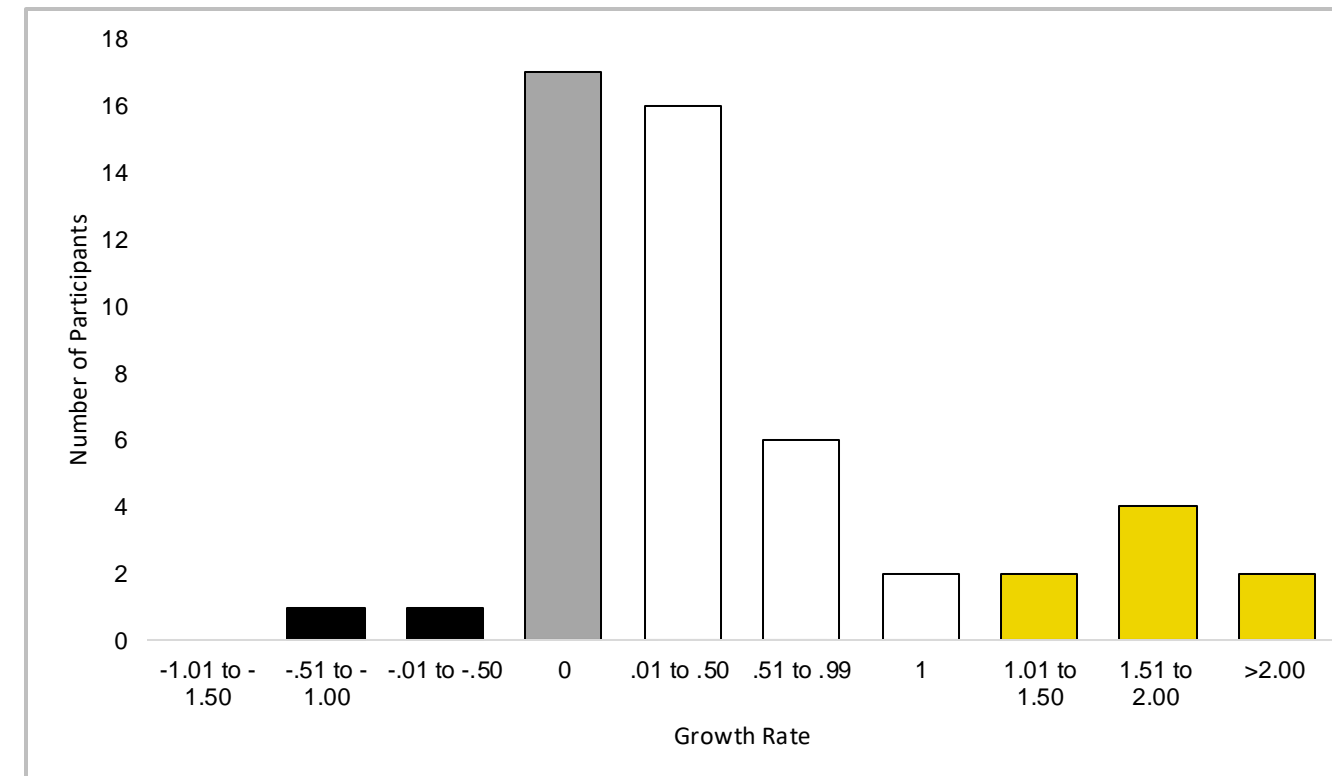
The ASL/English Language Milestones measure assesses receptive, expressive, and social communication milestones in ASL and spoken English from birth through age 8.

Note: We use disability/identity-first language to signify that being deaf or hard of hearing is a positive aspect of a person's identity.

RESULTS

RQ1:

Figure 1. Rates of Language Growth in ASL for DHH Children.



RQ2:

Table 1. Rates of Language Growth in ASL for DHH Children by Attainment of EHDI Benchmarks.

| | <i>n</i> | GR < 0 | GR = 0 | 0 < GR ≤ 1 | GR > 1 |
|--------------|----------|---------|----------|------------|---------|
| Total Sample | 51 | 2 (4%) | 17 (33%) | 24 (47%) | 8 (16%) |
| Met 1-2-3 | 15 | 0 (0%) | 3 (20%) | 9 (60%) | 3 (20%) |
| Met 1-3-6 | 21 | 0 (0%) | 6 (29%) | 11 (52%) | 4 (19%) |
| Did Not Meet | 15 | 2 (13%) | 7 (47%) | 5 (33%) | 1 (7%) |

Note. GR= Growth Rate.

Figure 2. Rates of Language Growth in Spoken English for DHH Children.

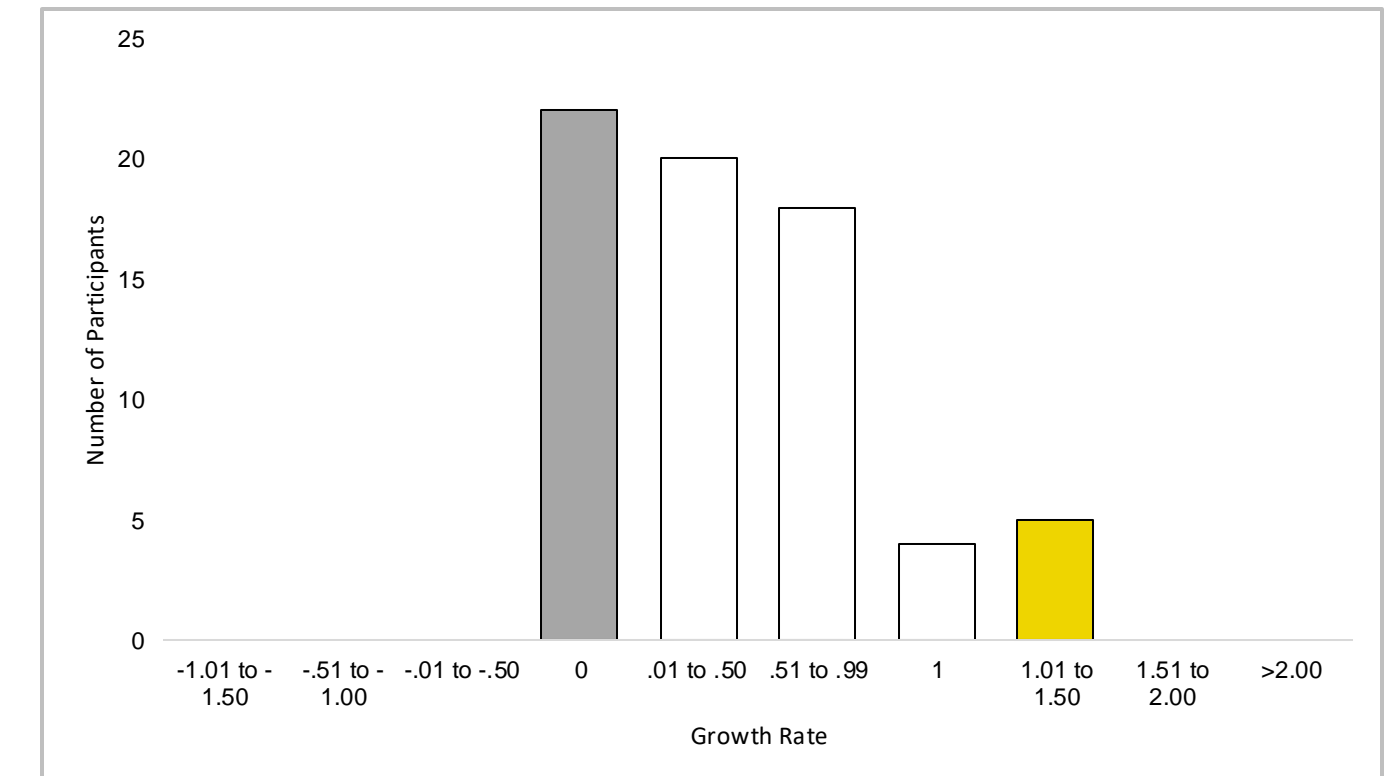


Table 2. Rates of Language Growth in Spoken English for DHH Children by Attainment of EHDI Benchmarks.

| | <i>n</i> | GR < 0 | GR = 0 | 0 < GR ≤ 1 | GR > 1 |
|--------------|----------|--------|----------|------------|---------|
| Total Sample | 69 | 0 (0%) | 22 (32%) | 42 (61%) | 5 (7%) |
| Met 1-2-3 | 22 | 0 (0%) | 6 (27%) | 15 (68%) | 1 (5%) |
| Met 1-3-5 | 40 | 0 (0%) | 10 (25%) | 27 (68%) | 3 (7%) |
| Did Not Meet | 16 | 0 (0%) | 6 (38%) | 8 (50%) | 2 (12%) |

Note: GR = Growth Rate.

DISCUSSION

Overall Language Progress: For ASL and spoken English, the majority of DHH children are increasing their language skills but not “narrowing the gap” relative to peers with typical hearing ($0 < GR \leq 1$).

In addition, a sizable proportion of DHH children showed a growth rate of zero, indicating mastery of the same language level after a mean of 12 months.

Influence of EHDI Benchmarks: The distributions between children who did versus did not meet 1-3-6 EHDI Benchmarks show mild variations. Additionally, the difference in mean growth rates between those groups was small ($d = 0.12$). Continued investigation regarding for whom and to what degree benchmark attainment influences growth rates is needed.

Clinical Implication: Results show that the majority of DHH children are making progress in their language skills, but nearly a third are still not advancing to a higher mastered language level after one year.

FUTURE DIRECTIONS

Conduct additional analyses to evaluate hypothesized variation in growth rates.

Develop and evaluate strategies to maximize language growth rate and further “close the gap”.

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