

Communication Outcomes among Culturally/Linguistically Diverse Children with Hearing Loss



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INTRODUCTION

- Most research on communication outcomes in children with hearing loss has focused on White, non-Hispanic, monolingual English-speaking families.
- However, 1 in 4 children in the U.S. is Hispanic, and this population is at 3-4 times higher risk for hearing loss.
- Wiseman et al. (2025) found that bilingual Spanish-English adolescents use their hearing aids less than their monolingual English-speaking peers.
- Brigham et al. (2024) found that children from families with limited English proficiency used their hearing aids less than children from English-speaking families, possibly due to clinician-family language discordance.
- Consistent device use is associated with listening and spoken language outcomes in children with hearing loss (Easwar et al., 2018; Walker et al., 2015), but it is unclear if children with hearing loss from culturally/linguistically diverse backgrounds show differences in other communication outcomes.
- Furthermore, it remains unknown if children from non-English speaking families show reduced hearing device use when services are offered in the home language.

STUDY OBJECTIVES

- Characterize the relationship between caregiver language status (*at least one English-speaking caregiver vs none*) and communication outcomes (*listening-related fatigue, real-world auditory skills, data-logged device use, vocabulary size, masked speech recognition*) in a sample of culturally and linguistically diverse children with hearing loss.
- Examine the contributions of other sociodemographic factors (*ethnicity, insurance type, maternal education, age*) and audiologic factors (*degree of hearing loss, hearing loss laterality*) to children's communication outcomes.

CONTACT

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METHOD

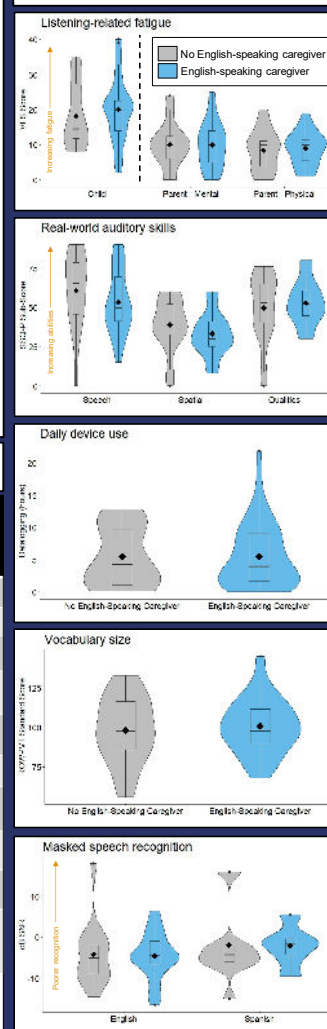
- Patients ages 0-21 years were recruited from House Children's Hearing Center in downtown Los Angeles, which employs a Spanish-speaking audiologist, front office staff, and patient care navigator.
- Participants completed age-specific assessments following routine clinical visit. Audiologic information was later extracted from clinical records.
 - Listening-related fatigue:** Vanderbilt Fatigue Scale (VFS), Parent and Child report
 - Real-world auditory skills:** Speech, Spatial, and Qualities of Hearing Scale (SSQ), Parent report
 - Daily device use:** Datalogging
 - Vocabulary size:** Receptive One-Word Picture Vocabulary Task (ROWPVT), monolingual English or bilingual Spanish-English version
 - Masked speech recognition:** Children's English and Spanish Word Recognition task (ChEgSS), in two-talker speech
- Characteristics of children from Spanish-speaking households:
 - Dialects of Spanish: Mexico (69%), El Salvador (9%), Guatemala (9%), Honduras (3%), Ecuador (3%), Colombia (3%), Peru (3%)
 - Average age bilingual children ($n = 33$) exposed to:
 - Spanish: 1.1 years ($SD = 1.6$ years)
 - English: 2.1 years ($SD = 2.4$ years)

PARTICIPANTS

	At least one English-speaking caregiver	No English-speaking caregiver (Home language = Spanish)
n	48 (25F, 23M)	26 (12F, 14M)
Age (years)	6.8 (5.3)	8.4 (5.7)
Maternal Education (years)	14.4 (3.5)	9.3 (3.8)
Insurance Type	56% Public, 40% Private, 4% Self-Pay	100% Public
Age at First Device Fitting (years)	4.6 (4.8)	6.8 (5.2)
% Bilateral HL	66.7%	68.0%
Type of Hearing Device	83% HA, 10% BCD, 4% CI, 2% CROS	81% HA, 12% BCD, 8% CROS
BEPTA, Bilateral HL Only (dB HL)	47.0 (28.9)	55.7 (27.9)
PEPTA, Unilateral HL Only (dB HL)	58.7 (25.4)	54.8 (30.0)
% of input in English, per BIOS (English-Spanish bilingual children only)	66% (26%) (n = 17)	49% (16%) (n = 16)

M (SD). Bold: $p < .05$. HL = hearing loss, BEPTA/PEPTA = better/poorer-ear pure-tone average, HA = hearing aid, CI = cochlear implant, BCD = bone-conduction device, CROS = contralateral routing of signal, BIOS = Bilingual Input-Output Survey

RESULTS



RESULTS

- No significant differences between children with or without an English-speaking caregiver on listening-related fatigue, real-world auditory skills, amount of device use, vocabulary, or masked speech recognition (p 's $> .05$).
- Ethnicity and maternal education were not significantly associated with any of the communication outcomes (p 's $> .05$).
- Linear regressions were conducted for each outcome variable. Predictors were chosen based on preliminary univariate analyses.

Outcome Variable	Predictors
VFS-C (n = 35)	English-Speaking Caregiver + Laterality + Age + Laterality*Age ($p = 0.055$)
VFS-P Mental (n = 38)	English-Speaking Caregiver + Laterality ($p < 0.01$) + Age ($p < 0.01$) + Laterality*Age ($p < 0.01$)
VFS-P Physical (n = 38)	English-Speaking Caregiver + Laterality ($p < 0.01$) + Age ($p < 0.01$) + Laterality*Age ($p < 0.01$)
SSQ-P Speech (n = 40)	English-Speaking Caregiver + Laterality + Age + Laterality*Age
SSQ-P Spatial (n = 38)	English-Speaking Caregiver + Laterality + Age + Laterality*Age
SSQ-P Qualities (n = 41)	Insurance Type ($p < 0.05$) + Laterality ($p = 0.085$) + Age ($p = 0.060$) + Laterality*Age
Datalogging (n = 70)	English-Speaking Caregiver + Laterality + Age + Laterality*Age
ROWPVT Standard Score (n = 38)	English-Speaking Caregiver + Age + ChEgSS English SRT ($p < 0.001$)
ChEgSS English SRT (n = 38)	English-Speaking Caregiver + Age ($p < 0.001$) + ROWPVT Standard Score ($p < 0.001$)

Significant predictors **bolded** ($p < .05$)

CONCLUSIONS

- In contrast with previous research, the present results do not indicate that children with and without an English-speaking caregiver show differences in hearing device use or other communication outcomes.
- These findings offer an optimistic outlook for outcomes in children with hearing loss from Spanish-speaking families.
- Hearing loss laterality (unilateral vs bilateral) and age were significant predictors of listening-related fatigue. Insurance type was a significant predictor of the SSQ-P Qualities sub-score only. ROWPVT Standard Score and ChEgSS English SRT were closely related, with age also predicting ChEgSS English SRT.
- Minimizing clinician-family language discordance may support positive outcomes among culturally/linguistically diverse children with hearing loss (i.e., care provided by fluent Spanish-speaking clinical/audiology staff).
- Further research is needed to understand how we can best support children with hearing loss from all backgrounds.