Undergraduate Arts and Research Showcase   Undergraduate Research

2020

Communicative Function and Diversity in Provider, Deaf and Hard-of-hearing Child, and Caregiver Speech during Telepractice

Rebekah G. O'Bryan
University of Louisville, rgobry02@louisville.edu

Jessica M. Julian
University of Louisville, jessica.julian.1@louisville.edu

Maria V. Kondaurova
University of Louisville, maria.kondaurova@louisville.edu

Communicative Function and Diversity in Provider, Deaf and Hard-of-hearing Child, and Caregiver Speech during Telepractice

Rebekah O'Bryan[1], Jessica Julian[1], Maria Kondaurova[1]

[1]Department of Psychological and Brain Sciences, University of Louisville, Louisville, KY

Introduction

- Telepractice refers to the use of telecommunications technology to deliver health services at a distance by facilitating a client-clinician connection for assessment, intervention, and/or consultation [14].

- The known benefits of telepractice are its feasibility, effectiveness, cost-reduction and increased patient access to services [1,6].

- Despite the known benefits of telepractice anecdotal evidence suggests that telepractice may pose challenges to the social interaction between the provider, the deaf- and hard of hearing (DHH) pediatric patient and the caregiver [1, 3, 7, 12].

- There is a gap in our knowledge on how telepractice affects the quantity and the quality of the provider, the pediatric patient and the caregiver speech, variables that may contribute to the effectiveness of pediatric speech-language rehabilitation since child language acquisition relies heavily on participation in social communication [14].

Aims of Study

- How does the use of telepractice affect the communicative function and communicative diversity of provider, deaf and hard-of-hearing (DHH) pediatric patient, and caregiver speech during speech language therapy?

Methodology

Participants
- 7 mothers with DHH children with cochlear implants (CI) (age 4.97 years, range 3.58-6.75 years, mean hearing age 2.03 years (SD 1.68), mean age of CI activation 2.94 years (SD 1.23).
- 1 speech language pathologist [Heuser Hearing Institute & Language Academy]

Procedure
- 2 sessions; in-person and tele, sequential, order counterbalanced

PRAAT 6.0.37 (Boersma & Weenink, 2018) Analysis
- *Utterances:* the production of conventional words, phrases and sentences by the same speaker that was either continuous or included a silence < 300 ms [4].

Coding
- *Communicative Function:* 17 child and 15 caregiver & SLP labels
- *Communicative Diversity Score:* diversity score was calculated as number of labels used out of labels possible for the participant [13]

| Child	SLP	Caregiver
1. Label	17. Repetition	32. Repetition
2. Description	18. Expansion/Extension	33. Expansion/Extension
3. Indicator	19. Affirmation	34. Affirmation
4. Interrogative	20. Request for repetition	35. Request for repetition
5. Nonexistence or termination	21. Label	36. Label
6. Recurrence of object of activity	22. Description	37. Description
	23. Closed question	38. Closed question
7. Actor	24. Open question	39. Open question
8. Action	25. Reframe	40. Reframe
9. Object of action and object of other desire	26. Decontextualized reference	41. Decontextualized reference
10. Patient and recipient	27. Onomatopoeia	42. Onomatopoeia
11. Instrument	28. Action/Play directive	43. Action/Play directive
12. Possession	29. Confirmation	44. Confirmation
13. Location	30. Negation	45. Negation
14. Experiencer	31. Other	46. Other
15. Confirmation		
16. Negation		

Results [paired sample t-test]

Child Diversity Score
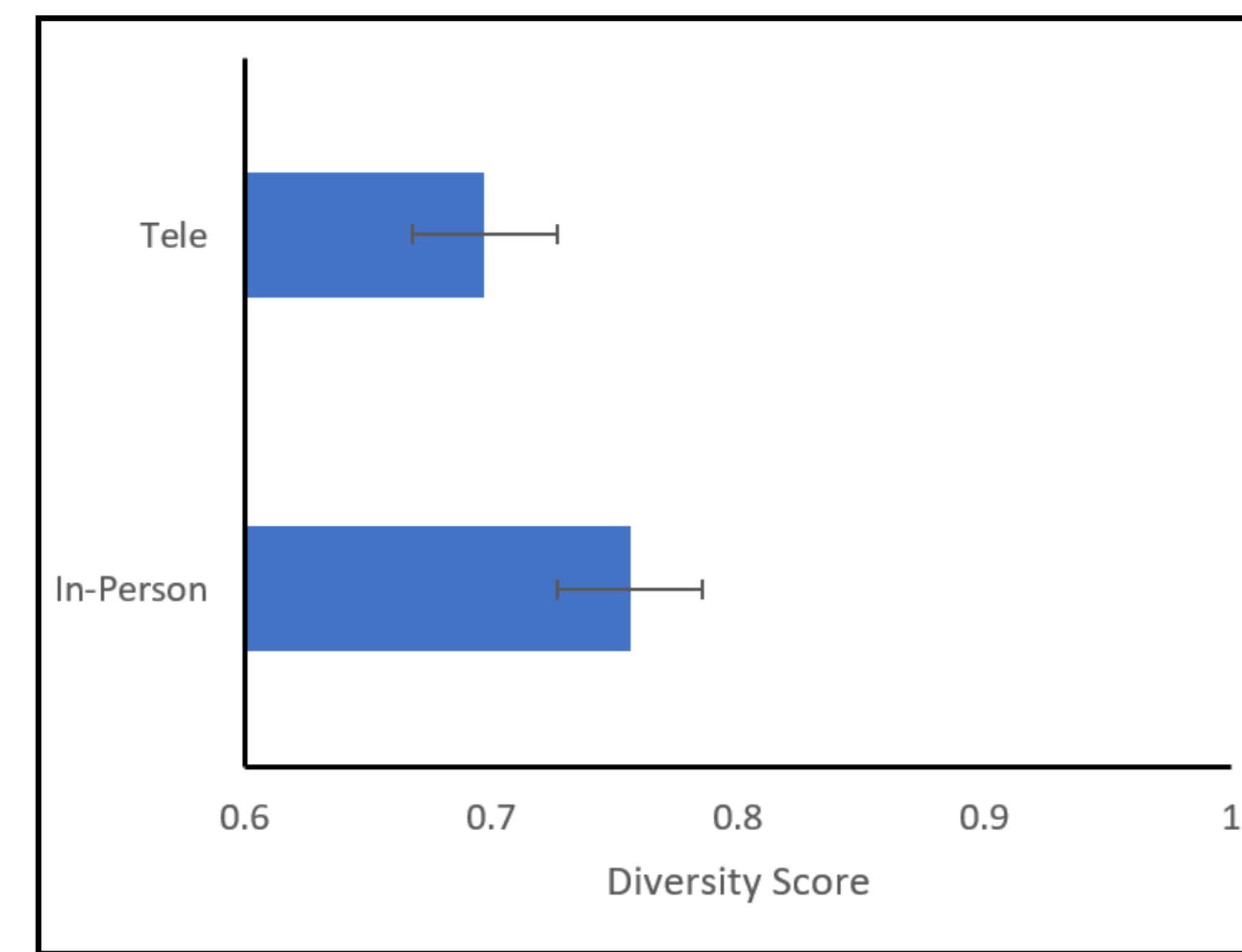
- t (df=6) = 2.47, p = 0.23
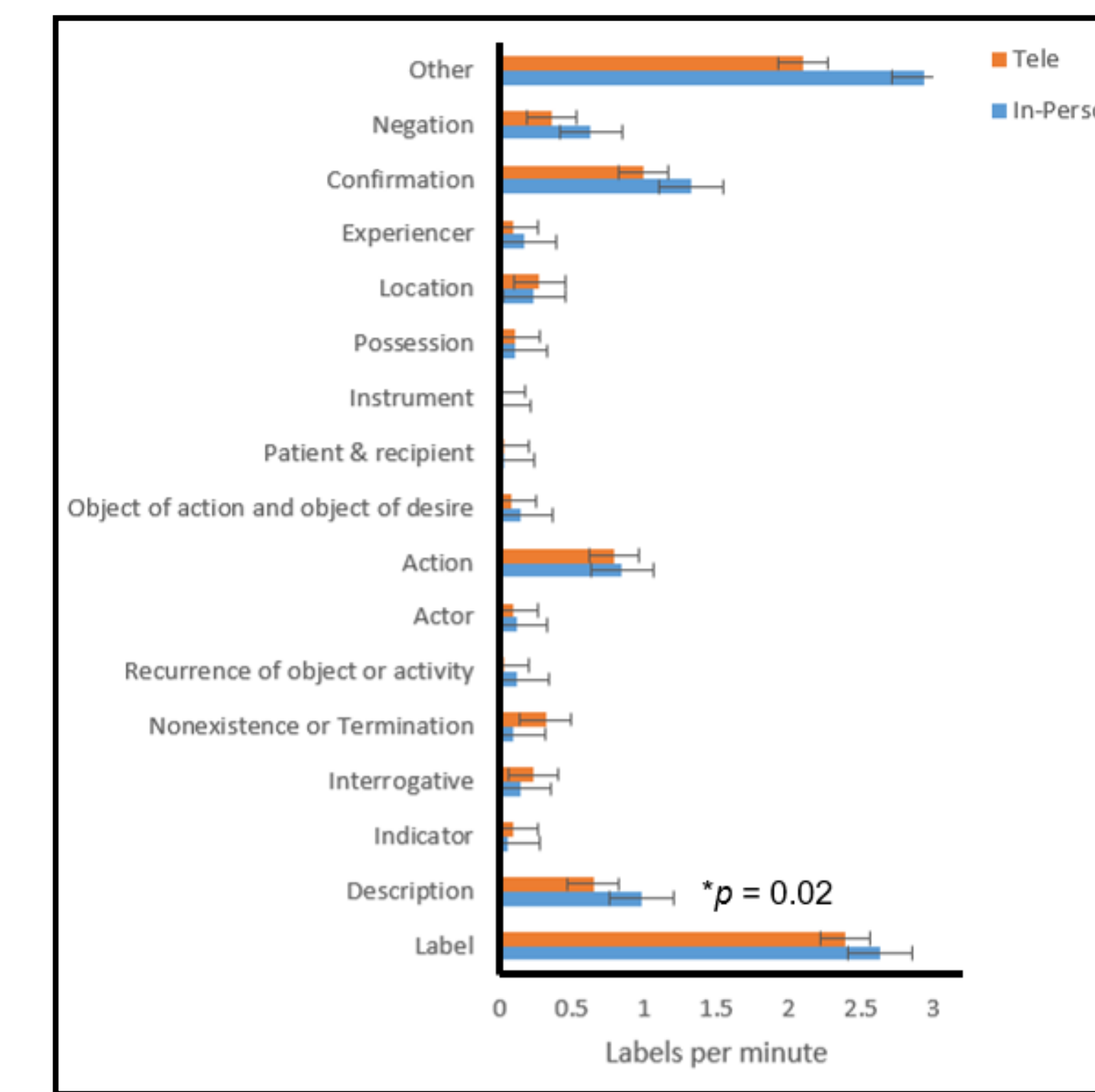
SLP Diversity Score

- t (df=6) = 2.47, * p = 0.02
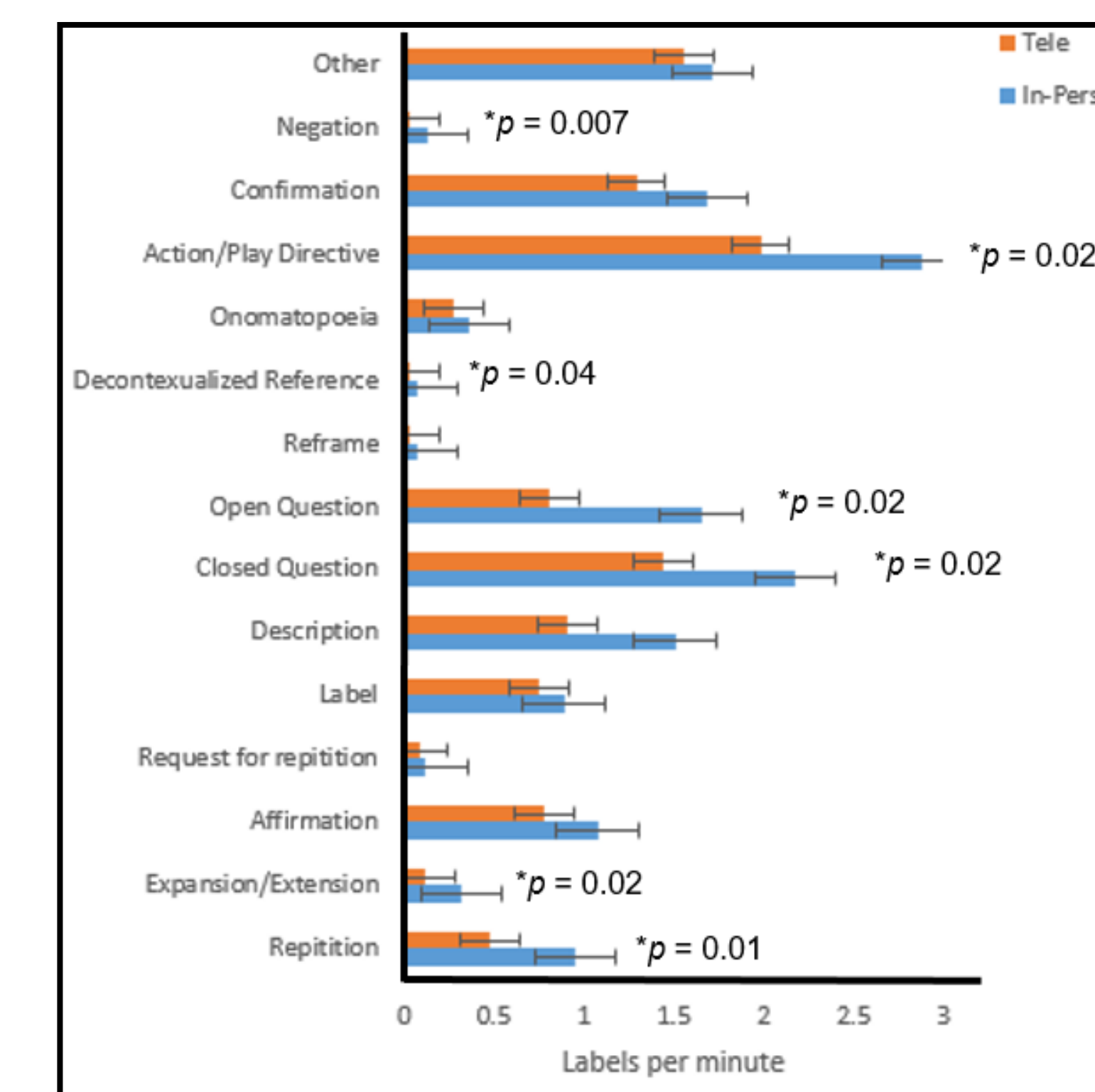
Caregiver Diversity Score

- t (df=6) = 2.47, p = 0.75

Child Label Rate
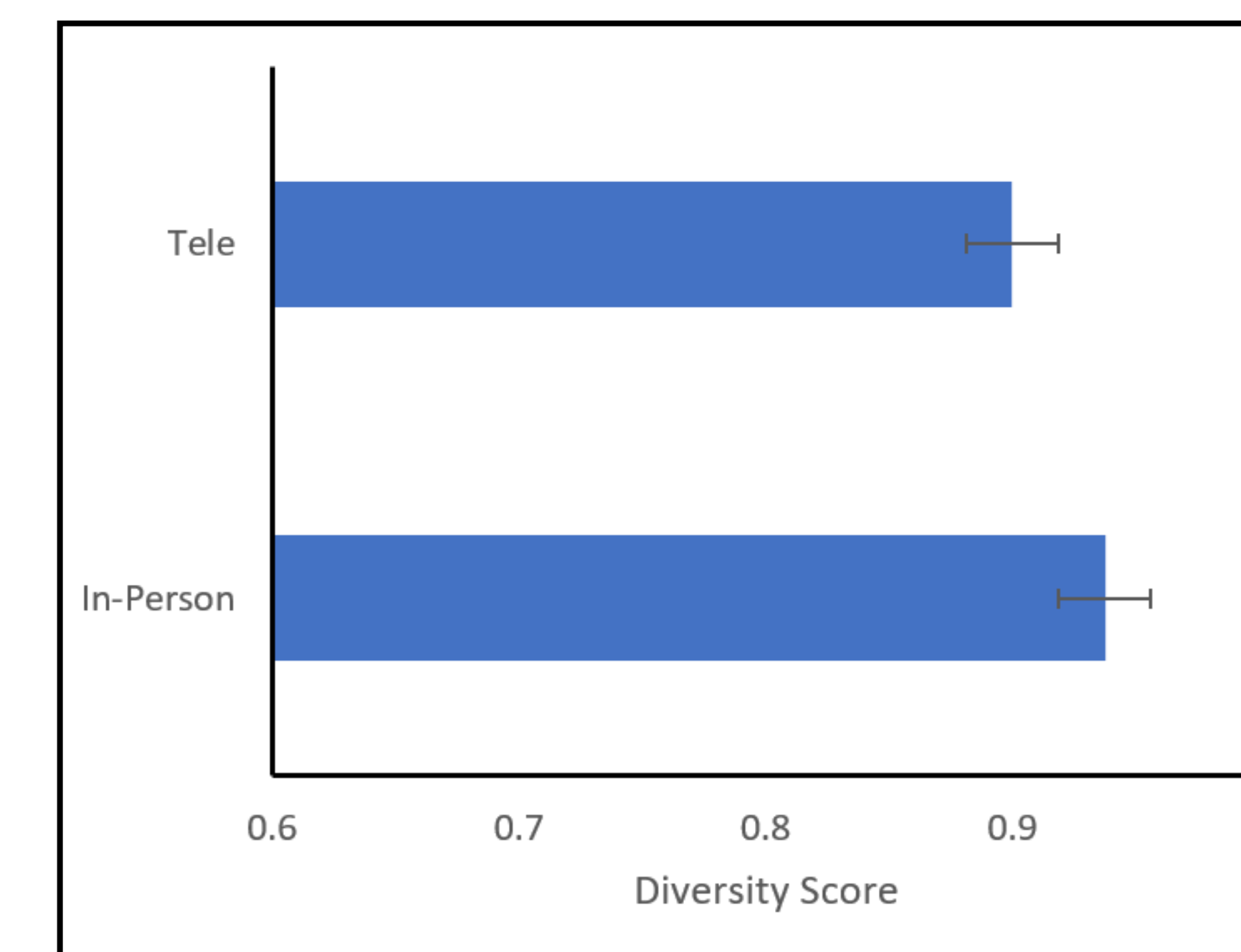
SLP Label Rate

Caregiver Label Rate
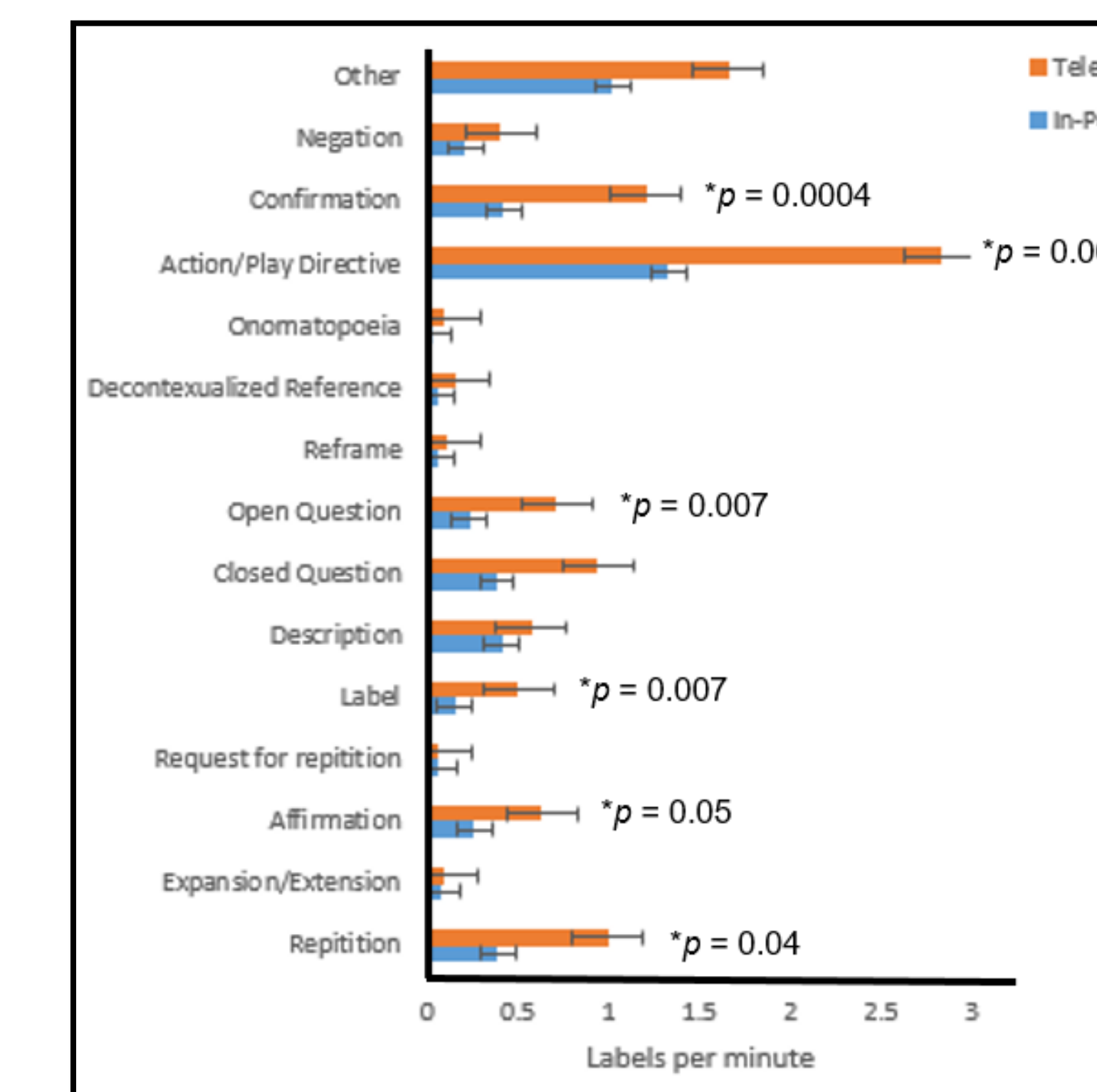
Discussion

SLP Speech
- Telepractice affects the communicative diversity and function of the provider speech.
  - The provider used a greater variety of label types in the in-person session compared to the tele session as shown by diversity score analysis.
  - The provider used more repetitions and expansions in the tele session; more closed and open questions, decontextualized references, action/play directive, negation in the in-person session.

Child Speech
- Telepractice affects the communicative function of child speech.
  - Children used more descriptions in the in-person session then the tele session.

Caregiver Speech
- Telepractice affects the communicative function of caregiver speech.
  - The caregiver used more repetition, affirmation, label, open question, action/play directive, confirmation labels in tele than in the in-person session.

Acknowledgements

References

1. Anderson, K., Balandin, S., Stancliffe, R. J., & Layfield, C. (2014). Parents' perspectives on tele-AAC support for families with a new speech generating device: Results from an Australian pilot study. *Perspectives on Telepractice*, 5, 52-60.
2. Gibson, J. L., Pennington, R. C., Stenhoff, D. M., & Hopper, J. S. (2010). Using desktop videoconferencing to deliver interventions to a preschool student with autism. *Topics in Early Childhood Special Education*, 29, 214-225.
3. Grogan-Johnson, S., Alvares, R., Rowan, L., & Creaghead, N. (2010). A pilot study comparing the effectiveness of speech language therapy provided by telemedicine with conventional on-site therapy. *Journal of Telemedicine and Telecare*, 16(134-139).
4. Gratier, M., Devouche, E., Guellai, B., Infanti, R., Yilmaz, E., & Parlato-Oliveira, E. (2015). Early development of turn-taking in vocal interaction between mothers and infants. *Frontiers in psychology*, 6, 1167. https://doi.org/10.3389/fpsyg.2015.01167
5. Grogan-Johnson, S., Schmidt, A., Schenker, J., Alvares, R., Rowan, L., & Taylor, J. (2013). A comparison of speech sound intervention delivered by telepractice and side-by-side service delivery models. *Communicative Disorders Quarterly*, 34, 210-220.
6. Hall, N., Juengling-Sudkamp, J., Gutmann, M. L., et al. (2019). *Tele-AAC: Augmentative and Alternative Communication Through Telepractice*: Plural Publishing.
7. Keck, C. S., Doarn, C. R. (2014). Telehealth technology applications in speech-language pathology. *Telemedicine and E-Health*, 20(7), 653-659.
8. Kock,N. (2004) The Psychobiological Model: Towards a New Theory of Computer-Mediated Communication Based on Darwinian Evolution. *Organization Science* 15(3):327-348. https://doi.org/10.1287/orsc.1040.0071
9. Kondaurova, M. V., Fagan, M. K. and Zheng, Q. Vocal imitation between mothers and their children with cochlear implants. *Infancy*. 2020; 25: 827– 850. https://doi.org/10.1111/infa.12363
10. McCarthy, M., Leigh, G., & Arthur-Kelly, M. (2018). Telepractice delivery of family-centred early intervention for children who are deaf or hard of hearing: A scoping review. *Journal of Telemedicine and Telecare*. doi:10.1177/1357633X1875588.
11. Prezbindowski, A. K., Adamson, L. B., & Lederberg, A. R. (1998). Joint attention in deaf and hearing 22 month-old children and their hearing mothers. *Journal of Applied Developmental Psychology*, 19(3), 377–387. doi: 10.1016/s0193-3973(99)80046-x
12. Snodgrass, M. R., Cheng, M. Y., Biller, M. F., Appel, K. E., Meadan, H., & Halle, J. W. (2017). Telepractice in speech-language therapy: The use of online technology for parent training and coaching. *Clinical Exchange*, 38(4), 242-254
13. Tamis-LeMonda, C. S., Baumwell, L., & Cristofaro, T. (2012). Parent–child conversations during play. *First Language*, 32(4), 413–438. https://doi.org/10.1177/0142723711419321
14. Telepractice. (n.d.). https://www.asha.org/practice-portal/professional-issues/telepractice/.