Promoting Early Literacy Using Digital Devices: A Pilot Randomized Controlled Trial

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OBJECTIVE: To determine feasibility and explore effects of literacy promotion using e-books vs. board books on the home reading environment, book reading, television use, and child development. METHODS: Randomized controlled trial comparing digital literacy promotion (DLP) using e-books to standard literacy promotion (SLP) using board books among Medicaid-eligible infants. DLP participants received e-books on home digital devices, while SLP participants received board books at well visits between 6-12 months of age. Differences in StimQ Read Subscale (StimQ-Read) scores, parent-reported reading and television use, and Bayley Scales of Infant Development-3rd Edition (Bayley-3) scores between groups were assessed using intention-to-treat analysis. RESULTS: 104 Medicaid-eligible infants were enrolled and randomized from 3 pediatric practices. There were no differences in socio-demographic characteristics between groups at baseline. Children in the DLP group initially had lesser StimQ-Read scores but showed similar increases in StimQ-Read scores over time as children in the SLP group. Parents in the DLP group reported greater use of digital devices to read or engage their child (65% vs. 23%, p<0.001) but similar board book reading and television viewing. There were no differences between groups in cognitive or motor scale scores, but DLP participants had marginally lower language scales scores (DLP 85.7 vs. SLP 89.7; p=0.10) at the 6-month follow-up. CONCLUSIONS/DISCUSSION: Literacy promotion using e-books was feasible and associated with greater e-book usage but no difference in board book reading, television viewing, or home reading environment scores. A potential adverse impact of e-books on language development should be confirmed in future study.

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