

The feasibility of an online language programme delivered through music and the impact of dosage on vocabulary outcomes in young children with Down Syndrome.

Pauline Frizelle, Eva McMullan, Eibhlin Looney, Darren Dahly, Ciara O'Toole, Nicola Hart
University College Cork, Cork, Ireland

Abstract

Background: Few studies have explored the feasibility of online language interventions for young children with Down syndrome. Additionally, none have manipulated dose frequency or reported on the use of music as a medium through which language and sign can be learned.

Aims: To 1) examine the feasibility and acceptability of an online language intervention for young children (1 - 3;06 years) with Down syndrome, and 2) compare effectiveness at two intervention dose frequencies.

Method: The study was carried out in two phases using a mixed methods design. Phase 1: qualitative data were gathered from parents to examine feasibility when implementing a video-based language intervention. Phase 2: Seventy-six families participated in an online language intervention at home. Effectiveness was examined comparing two groups, randomly assigned to a high and low dose frequency. The Down syndrome Education checklists (combined) (DSE) were the primary outcome measure. Process data were gathered to determine the acceptability of the intervention in practice and to identify factors that would improve successful future implementation. Acceptability data were analysed with reference to the theoretical framework of acceptability (Version 2).

Results: Forty-three parents completed the phase 1 questionnaire, five of whom took part in focus groups. Once weekly morning sessions were indicated as the preferred scheduling choice. Phase 2 quantitative data were analysed using Beta regression adjusted for baseline scores and indicated no additional benefit to receiving the higher dose. However, exploratory interaction models suggested that the efficacy of the high-dose intervention was higher (than low dose intervention) in participants with higher baseline DSE performance. Parents perceived the intervention to be effective and positive for the family.

Conclusions: The results add to our knowledge of real-world effective online-interventions and suggest a critical minimum language level is required for children with Down syndrome to benefit optimally from a higher intervention dose frequency.