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## **Functional Independence Outcomes of Children in an Early Intervention Program in Rural South India**

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**Background:** To maximize functional outcomes, family-focused early intervention (EI) services proactively support families in providing their children experiences and opportunities for actively learning and with the functional goal of promoting children's participation in daily routines and appropriate interaction with people and the environment.

**Objectives:** The purpose of this study was to examine the developmental trajectories of children with development delay age 0-6 years receiving village based EI as measured by the cognitive, self-care and mobility scales of the WeeFIM. Outcomes of interest included program engagement, gender, and location of therapy (home-based vs. centre-based).

**Design:** A prospective longitudinal repeated measures design.

**Participants:** A total of 1050 children were included in the cohort at baseline, with 300 children completing all five evaluations. All children showed a delay in at least one of the WeeFIM domains and were followed through a village based EI program in 8 different locations (blocks) of rural Tamil Nadu.

**Setting:** This study was conducted in the District of Tirunelveli, State of Tamil Nadu in South India by Amar Seva Sangam (ASSA), an Indian non-government organization. Children received either home-based or centre-based EI services, provided by community rehabilitation workers (CRW) through the guidance, support and monitoring of physiotherapists, special educators and speech trainers.

**Methods:** Children were assessed every 6 months over a 2-year period using the WeeFIM, a standardized and internationally validated assessment, evaluates children's functional performance. Scores were calculated for 3 WeeFIM domains: 1) Cognitive (communication, social cognition); 2) Self-care (self-care, sphincter control); and, 3) Mobility (transfers, locomotion).

**Results**

**Cognitive Domain:**There was a significant change in WeeFIM cognitive scores between all assessment times at  $p < .0001$  for all and  $p = 0.004$  for E4-E5. Positive change was seen for both genders. The greatest change in mean score at two years was among those receiving therapy at home. There was no significant difference in mean cognitive scores by location of EI.

**Self-Care Domain:**Significant change in WeeFIM self-care scores were shown between all evaluation times at  $p < .0001$  with the exception of E4-E5. This improvement was seen for both genders, for all programme engagement groups and location of EI. There was no statistically significant difference in improvement between home and centre-based EI. All programme engagement groups had improved self-care scores with significantly higher scores in the high engagement group across time (at  $p < .0001$ ) except for E4-E5.

**Mobility Domain:**No difference in mean WeeFIM mobility score across time overall, by gender, and by programme engagement. There was a statistically significant difference between children receiving therapy at home versus centre in WeeFIM mobility scores at all evaluation points (E1, E4 at  $p < .0001$ ; E2 at  $p = 0.0004$  and E5 at  $p = 0.018$ )

**Conclusions:**An early intervention program in rural India conducted by CRWs was shown to improve functional independence in children with developmental delays. Greatest changes were shown in the areas of communication, social domains and self-care, as well with home-based EI as compared to center-based.