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The Effectiveness of Home-Based Early Intervention Therapy Among Boys and Girls with Cognitive Delay in Rural South India

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Introduction: According to Census 2011 52.90% children with disabilities under the age of 6 years are living in the rural areas of Tamil Nadu. Early Intervention (EI) programs have been effective for children who are at risk for developmental delay, especially in traditional measures of development, such as cognitive, personal, and social-emotional skills (Spittle, et al., 2007). To maximize functional outcomes, the content of EI has changed from the provision of bio-medically focused to family-focused services, proactively supporting families in providing their children experiences and opportunities for actively learning through daily routines and appropriate interaction with people and the environment.

Objective: Are there differences in the developmental trajectories between girls and boys with cognitive delay, age 0 – 6 years, who receive care from ASSA's Village Based Early Intervention Programme as measured by the Functional Assessment Checklist for Programming instrument?

Are there differences in the developmental trajectories between children receiving home-based vs. centre-based therapy measured by the Functional Assessment Checklist for Programming instrument?

Design/Method: This study was conducted in the District of Tirunelveli, State of Tamil Nadu, India by Amar Seva Sangam (ASSA), an Indian non-government organization. Therapy was provided to children with cognitive delay by community rehabilitation workers (CRWs) through the guidance, support and monitoring of special educators who set an Individualized early intervention plan. Therapy was provided to boys and girls in either their homes through weekly visits by CRWs and monthly joint visits by special educators (home-based) and CRWs or through daily therapy sessions alternating between CRWs and special educators at early intervention centres (centre-based). A total of 399 children were included in the analysis. Children were not randomized to home-based or centred based therapy. Children's development in the area of academic, personal, occupational, recreational and social performance was evaluated by the validated measure: the Functional Assessment Checklist for Programming (FACP) every 6 months over 2 years.

Results: Overall, the FACP improved significantly over time for both girls and boys and for both centre and home based programmes. There were no significant differences in FACP score between centre-based and home-based therapy at each evaluation point. There was no significant difference in FACP score at both one ($p=0.446$) and two years ($p=0.3399$) based on where the therapy was provided. There was no significant difference in FACP scores at each evaluation point between girls and boys. There was no difference by gender in FACP score change after both one ($p=0.417$) and two years ($p=0.629$).

Conclusion: An early intervention program in rural India conducted by community rehabilitation workers has shown to improve a child's development in academic, personal, occupational, recreational and social domains with no differences seen between boys and girls. A home based rehabilitation approach which is less labour intensive may yield similar results to a more intensive centre based approach. The limitation of this study is the lack of randomization and blinding and further study is recommended.

References:

1. FACP, National institute for the mentally handicapped, department of special education, government of India (Myreddi, Narayan, Saleem et al., 2004).
2. Spittle, A. J., Orton, J., Doyle, L. W., & Boyd, R. (2007). Early developmental intervention programs post hospital discharge to prevent motor and cognitive impairments in preterm infants. Cochrane Database Systematic Review CD005495.