Van Der Schuit, M., Van Balkom, H., Stoep, J., Segers, E., and Verhoeven, L. *Efficacy Results of an Early Intervention Program on Language, Communication, and Emergent Literacy for Preschool Aged Children with Developmental Disabilities.* Paper presented at the 2009 Clinical AAC Research Conference in Pittsburgh, PA.

Efficacy Results of an Early Intervention Program on Language, Communication, and Emergent Literacy for Preschool Aged Children with Developmental Disabilities

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Document Abstract

The aim of this study was to examine the effectiveness of an early intervention program aimed at both home and day-care settings for preschoolers (age 2 to 6 years) with complex communication needs. The intervention was designed to improve the broad spectrum of language development, emergent literacy, and communication skills and was based on several well experienced and described methods combined in a play-learning environment; i.e. Reggio Emilia approach, anchored instruction, experiential learning, interactive storytelling, dynamic assessment and AAC. The large individual differences between children with developmental disabilities were taken into account by developing activities in the zone of proximal development for each individual child, based on a Communication Competence Profile. The children had the opportunity to make use of various modes of communication, as AAC was incorporated in a natural manner. The first results showed that the intervention was effective in promoting children's language development, as all children made significant progress during the intervention period.

Research Description

Children with developmental disabilities often experience delays in language acquisition. Their language development is characterized by more variation in timing and outcome, and individual differences exist between children in areas of linguistic communication that do not always keep up with their mental age (Kaiser, Hester, & McDuffie, 2001). Furthermore, for some children, their cognitive, motor or sensory disabilities interfere with their abilities to acquire or adequately use spoken language. These children can then make use of Augmented or Alternative means of Communication (AAC). This large variation in language development between children with developmental disabilities makes it more difficult to develop an intervention for preschool children aimed at supporting language learning, as such an intervention should best be tailored to the individual child's strengths and weaknesses (Gerber & Kraat, 1992; Rondal, 2001). Furthermore, this intervention should not only focus on the child, but also take into account the communicative environment of the children, like their home or child care settings. The interaction between children and the people in their communicative environment (e.g., parents or teachers) is of great importance for language development (McCartney, 1984).

Therefore, an early intervention aimed at stimulation of language, communication and

literacy in both home- and day-care setting, tailored to the developmental strengths and weaknesses of the individual child, may give the best results. Interventions for children with developmental disabilities designed to improve language and communication development, however, mostly aimed at just a part of this development. Some of these interventions focused on directly instructing the child (Charlop-Christy, Carpenter, Loc, LeBlanc, & Kellet, 2002), other interventions tried to change the communicative environment of the children by instructing parents or teachers (Warren & Yoder, 2004). Many of these interventions seemed to be quite effective in stimulating the development of a particular skill in the participating children. However, a thorough study of generalization to other settings and lasting effects of these interventions are often lacking.

It is important that intervention programs are evaluated in a consistent manner, as this will make it possible to implicate them in more clinical settings. Many interventions, especially for children making use of AAC, are not evaluated properly, mostly caused by the small size of the groups participating, difficulties testing the children in an appropriate way or limited time.

Purpose

The aim of the present study was to explore the effectiveness of a combined intervention designed to improve the broad spectrum of language development, emergent literacy and communication skills of children with complex communication needs. In a two-year intervention program for preschool children, this special play and learning environment was set up, in which children were introduced to (written) language and various modes of communication. The children were closely followed during the intervention, were re-tested one year after the end of the intervention and their development was also compared with the development of a control group of children not receiving the intervention. Following this set up, the effects of the intervention could be explored.

Methods

Ten pre-school children (age between 2;8 to 6;7 years) were included in the intervention for a period of two years. All children had an intellectual disability and severe speech- and language disabilities. The children could be divided into two groups, a group of children who mainly used speech to communicate and a group of children who did not speak and mainly used means of alternative communication. Furthermore, 15 pre-school children with an intellectual disability and severe speech- and language disabilities were also included in the study as a control group. These children did not receive the intervention under investigation.

The intervention under investigation is called the KLIN*c* Studio (KLIN*c*: Kids Learning to take Initiatives in *c*ommunication). The activities in the KLIN*c* Studio were all centered on one theme starting from a shared event (the anchor) for nine weeks. During these anchor based cycles children engaged in activities all related to the theme and they were introduced to a word network with words belonging to the theme. In this way it was possible to go deeper into the knowledge and vocabulary of the themes. Activities were designed to connect with the child's abilities and his/her zone of proximal development (Vygotsky, 1986). The development of the children during each anchored cycle was closely followed using Dynamic Assessment. In this way the activities in each cycle could be tailored to the developmental strengths and weaknesses of the child and adaptations to changes in the child's behaviour could be made quickly. To follow children's development during each anchored cycle a pre- and posttest of receptive and productive vocabulary of the anchor words were assessed. Along with these curriculum-based vocabulary

assessments, children's development on nonverbal intelligence, receptive language and productive language (e.g., syntax and vocabulary) skills was also followed with standardized tests. These were administered at the start of the intervention and 12, 18 and 24 months later. Children were also re-assessed one year after the end of the intervention.

In order to explore the effects of the intervention several analyses were done. First, the development of the children during the anchored cycles was investigated by testing their relative progress on the curriculum based vocabulary tests for each anchored cycle. Then for the standardized tests of nonverbal intelligence, receptive language and productive language skills the children's rates of development before, during, and after the intervention were compared. Also, analyses were done to examine if there were differences between the group of speaking children and the group of non-speaking children on the tasks and if they developed differently during the intervention. Furthermore, the development of the children in the intervention was compared with the development of a control group of children not receiving the intervention.

Results and Discussion

In this presentation, the first results of the efficacy study will be given and discussed. The data of this study is currently being analyzed. Preliminary analyses, however, showed that all children in the intervention made significant progress during the intervention period. Children not only showed significant progress in receptive and productive vocabulary during each nine-week anchored cycle, but also made significant gains in receptive and productive language development, as measured with standardized tests.

The findings from this study will be discussed in relation to current research on language development in children with disabilities and especially those children learning to communicate through AAC. Clinical implications for preschool interventions aimed at language development, emergent literacy and communication skills for children with complex communication needs, will be discussed in light of the findings of this efficacy study.

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