



Radboud Sensis program for language, speech, and communication in children with visual impairment

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Abstract. The Radboud Sensis program is intended to promote language, speech, and communication in children with visual impairments and their caregivers. Starting-point has been that such an intervention program can be a useful tool, not only for language and communication itself, but also for attachment, social and cognitive development. The program is directed at caregivers of children with visual impairment or blindness until 5 years of age. Goal is to improve their skills and knowledge. The program consists of verbal and written information, exercises, and homework. Topics are: basic communication skills, recognizing (pre)intentional behavior; adapting to child's developmental level and interest, communicating about emotions and affect; choosing communication subjects; using adequate referential language; and asking good questions. The development of the instrument is described as well as the results of a field test with four families. The field test concerned procedural issues and satisfaction. The times needed to prepare and conduct the program and homework was as expected and proved not to be a burden for the parents. Parents were satisfied with the program's content but requested more examples of best practice and some extra exercises. Basic communication skills and recognizing (pre)intentional behavior were rated as most important, adapting to life experiences and developmental level as least important. However video recordings showed that parents miss opportunities to perform the latter. © 2005 Elsevier B.V. All rights reserved.

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1. Introduction

Language and social interaction in blind children has been the object of scientific study and clinical interventions for several years [1]. Not only in its own right but also as a means to promote attachment, cognition, and social emotional development [2]. A review of currently available early intervention programs revealed that these programs rely heavily upon clinical experience and less on scientific research. As resource guides these programs can be very useful. Most of these programs lack, however, a systematic curriculum of how to promote language, interaction and communication in blind with blindness and visual impairment and their caregivers. As a result, it is hard to evaluate the effectiveness and efficiency of these programs. The Radboud Sensis program tries to integrate results from scientific studies and the information from early intervention programs into a systematic curriculum to promote language development, interaction and communication in children with blindness and visual impairment.

2. Development of the Radboud Sensis program

A review of empirical studies on language development, parent–child interaction and communication in children with blindness and visual impairment resulted in nine skills that are at risk [3]. A comparable overview can also be found in Pérez-Pereira and Conti-Ramsden [1]. The importance of these skills for some key developmental domains that are at risk also in children with blindness and visual impairment (c.f. [1,4–6]) was assessed by the authors and is depicted in Table 1.

The Radboud Sensis program is directed at caregivers of children with visual impairment or blindness with or without additional disabilities between 6 months and 5 years of age. The goal is to improve their skills and knowledge of language, interaction and communication. Especially the quality of parent–child interaction and the amount of and variation in experience seems to be crucial for effective early intervention [7]. Stimulating these family factors is more effective than directly stimulating outcome

Table 1
Importance of language and communication skills for developmental domains

| Language or communication skill | Actor | Language | Parent–child interaction and attachment | Theory of mind | Social emotional development |
|---|--------|----------|---|----------------|------------------------------|
| Interpreting non-verbal communicative signs | parent | + | + | + | + |
| Asking good questions | parent | + | + | – | +/- |
| Sensitive interaction style | parent | + | + | +/- | + |
| Experience dependent learning | parent | + | + | +/- | +/- |
| Promote self-determination | parent | + | + | – | + |
| Verbalize thoughts and emotions | parent | + | + | + | + |
| “Triangle of reference”/joint attention | child | +/- | +/- | + | + |
| Use of deictic terms (personal pronouns, spatial terms, and referential language) | child | + | + | – | – |
| Use of specific versus general nominals | child | + | + | – | + |

Skill is: ++ very important, + important, +/- is more or less important, – skill is less or not important for developmental domain.

variables in the child. That is why mainly the caregivers and not the children were chosen as actors or participants in the program.

Based on the review shown in [Table 1](#), the chosen topics are: basic communication skills, recognizing (pre)intentional behavior; adapting to the child's developmental level and interest, communicating about emotions and affect, choosing communication subjects, using adequate referential language; and asking good questions. These topics were dealt with in seven meetings. The last meeting was reserved for evaluation of the program. The program consists of verbal and written information, exercises, and homework. Exercises and homework were derived from the scientific literature and early intervention programs for blind and visually impaired children (e.g. [8](#) [9](#) [10](#) [11](#) [12](#)), deaf-blind children (e.g. [[13–16](#)]), as well as children with speech and language disorders [[17](#)]. The program is not curative but tries to prevent problems in language, interaction and communication. Individual adaptations to the needs of the family and the child's developmental level are essential to the program [[18–20](#)].

3. Field test

3.1. Methods

In a field test some procedural issues concerning, efficiency and satisfaction were studied in four families with three boys and one girl with visual impairment. The children's ages ranged from 2.9 to 3.4 years. Etiologies were: retinopathy of the premature, congenital cataract, and two times congenital nystagmus. Binocular visual acuities ranged from 20/80 to 20/170. The last author gathered data on times needed to prepare and conduct the program, exercises and homework. Parents' expectations and satisfaction were measured afterwards in a Likert scale questionnaire and a semi-structured interview. Parental behavior was measured with the help of video recordings before and after the program.

3.2. Results

Parents valued the basic skills and recognizing (pre)intentional behavior as most important, and adapting to the developmental level and life experiences as least important. The video recordings showed that the latter was also difficult for the parents to perform. Although the parents talked in small sentences, they failed in three of the four cases to adapt to the child's lack of vision by stressing input from the other senses. The parents did not differentiate between relevance for their child and importance of the topics. Satisfaction with the program was high, especially with the written background information and the exercises. Although some parents remarked that several topics were not suitable for their child, they did not rate these topics as superfluous.

Useful suggestions were the demand for more examples of best practice, exercises and homework and a better distribution of the more time-consuming exercises over the intervention period. The times needed to prepare (15 min), conduct (30–45 min) and report (10 min) the program by the early interventionist were as expected. Parents needed 1 to 1 1/2 h per week to attend the home visit and conduct the homework. Making exercises and homework was appreciated although parents were previously not used to these forms of early intervention.

3.3. Discussion

The above reported data only concerned four families. It is therefore hard to draw firm conclusions. Note that blind children were not available for this study, due to the small prevalence rate of blindness. So all the results are based on children with visual impairment. The literature is undecided about the question whether or not the degree of visual impairment is very important for language, interaction and communication. The fact is that most of our knowledge is based upon legally blind children (i.e. visual acuity less than 20/200) or completely blind children (i.e. no light perception at all).

Satisfaction and private thoughts about the program are not sufficient to make a program effective, but it is a first step, because without sufficient satisfaction parents will not comply with the program. The above-mentioned suggestions of the parents will be carried out in a second field test. In this study the effect of the program on the parents' basic communication skills will be studied more extensively, not only by subjective parent reports but also by more objective longitudinal observational data. After this study we plan to train early interventionists to carry out the program, so that we are also able to help more families than is currently possible, because only the project members were trained. A monitoring and tutoring system will be set up whenever we receive enough interest from early interventionists. Translation of the program into English is also possible after sufficient requests. In future research the effect of the program on the other parent skills as well as on the child's behavior will be studied.

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