International Journal of Pediatric Otorhinolaryngology 77 (2013) 2030–2039

Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinolaryngology

journal homepage: www.elsevier.com/locate/ijporl

Responsive parenting intervention after identification of hearing loss by *Universal Newborn Hearing Screening*: The concept of the *Muenster Parental Programme*

Karen Reichmuth *, Andrea Joe Embacher, Peter Matulat, Antoinette am Zehnhoff-Dinnesen, Reinhild Glanemann

Clinic for Phoniatrics and Pedaudiology, University Hospital Muenster, Germany

ARTICLE INFO

Article history:
Received 20 June 2013
Received in revised form 1 October 2013
Accepted 3 October 2013
Available online 12 October 2013

Keywords:
Early intervention
Hearing loss
Infant
Parents
Preverbal communication
Responsiveness

ABSTRACT

Background: Parents of newborns with hearing loss (HL) identified by *Universal Newborn Hearing Screening (UNHS)* programmes wish for educational support soon after confirmation and for contact with other affected families. Besides pedaudiological care, a high level of family involvement and an early start of educational intervention are the best predictors for successful oral language development in children with HL. The implementation of *UNHS* has made it necessary to adapt existing intervention concepts for families of children with HL to the needs of preverbal infants. In particular, responsiveness has proven to be a crucial skill of intuitive parental behaviour in early communication between parents and their child. Since infants with HL are being fitted earlier with hearing devices, their chances of learning oral language naturally in daily communication with family members have noticeably improved.

Objectives: The *Muenster Parental Programme (MPP)* aims at empowering parents in communicating with their preverbal child with HL and in (re-)building confidence in their own parental resources. Additionally, it supplies specific information about auditory and language development and enables exchange with other affected parents shortly after the diagnosis.

Concept: The *MPP* is a responsive parenting intervention specific to the needs of parents of infants with HL identified by *UNHS* or through other indices and testing within the first 18 months of life. It is based on the communication-oriented Natural Auditory Oral Approach and trains parental responsiveness to preverbal (3–18 months) infants with HL. The *MPP* has been developed for groups of 4–6 families and comprises six group sessions (without infants), two single training sessions with *video feedback*, and two individual counselling sessions. At the age of 24–30 months, an individual refresher training session is offered to the parents for adapting their responsiveness to the current verbal level of the child via dialogic book reading. The programme also benefits parents of paediatric cochlear implant (CI) candidates preimplantation and postimplantation.

Conclusions: The *MPP* is evidence-based (see Glanemann et al., this volume) and meets the current need for effective family-centred educational intervention after *UNHS*.

1. Introduction

The identification of HL by *Universal Newborn Hearing Screening (UNHS)* programmes aims at enhancing the child's communicative, academic and social development. These programmes have noticeably improved the likelihood for these children to develop an oral language competence that is comparable to their hearing peers [1–3]. However, early identification is only beneficial when quality services for the child and its family are implemented to take advantage of this

Abbreviations: CI, cochlear implant; CHIP, Colorado Home Intervention Program; FLIP, Linz Family Centred Intervention Program; HL, hearing loss; HPLI, Heidelberg Parent-based Language Intervention; ITTTT, It Takes Two To Talk; MPP, Muenster Parental Programme; NH, normal hearing; PALS, Playing and Learning Program; RE/PMT, Responsiveness Education/Prelinguistic Milieu Teaching; RFI, Relationship Focused Intervention; STEEP, Steps Towards Effective Enjoyable Parenting; UNHS, Universal Newborn Hearing Screening.

* Corresponding author at: Department of Phoniatrics and Pedaudiology, University Hospital Muenster, Kardinal-von-Galen Ring 10, 48129 Muenster, Germany. Tel.: +49 251 8356905.
E-mail address: Karen.Reichmuth@uni-muenster.de (K. Reichmuth).

0165-5876/$ – see front matter © 2013 Elsevier Ireland Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.ijporl.2013.10.002

early detection [3–5]. Moreover, parents may become distressed when the confirmation of HL is not followed by immediate support and can consequently fear losing the advantage of early identification [4].

Especially for parents with no family history of HL, the diagnosis comes unexpectedly and at a time when they are fully engaged in bonding with their newborn. They are easily overwhelmed by grief, with a need for making decisions concerning communication mode or cochlear implantation, and uncertainty and helplessness in the face of an unexpected situation for which they could not prepare [6]. Consequently, parents often lack confidence in child rearing and may express irritations in their behaviour and communication towards their child. This in turn can influence their intuitive and child-oriented parental behavioural repertoire, also called *intuitive parenting* [7,8]. This mostly unconscious set of behaviours is easily irritated when parents are confronted with unexpected conditions like illness or special needs of the child [9]. Beyond that, the infants with HL may show varied forms of communicative signals due to differences in auditory access [6]. In this situation, support for the parents is needed to help them discover and value the individual communicative signals of their child.

In particular, the nature of the interaction between the child with HL and his/her parents and the quality of the language environment the child experiences have been emphasised as crucial influential factors his/her language development [10–12]. Besides early identification and near-term fitting of adequate hearing devices, it is the early start of educational intervention in combination with a high level of parental participation that best predicts successful language development [13–15].

As a consequence, health care professionals are confronted with much younger children and their families than in previous decades. Therefore, existing early educational intervention concepts have to be adapted to the infant's preverbal period and to meet the special needs of parents [16,17].

To face this challenge, after the nation-wide implementation of *UNHS* programmes in Germany in 2009, we have aimed to develop a programme that supports families in the initial period following confirmation of HL. This parental programme needed to be targeted at early onset ages, placing emphasis on high family involvement, with the ability to be specific to the needs of parents and their infants with HL. The result of these considerations is the *Muenster Parental Programme (MPP)* which is utilised as a module of early intervention in a multi-professional team supporting families immediately after the confirmation of the HL. The overall objective of the *MPP* is to empower parents by (re)building confidence in their own parental skills and to give them the opportunity to share their experiences with other affected families. Resourcing parents with communication and behavioural skills and enabling exchange with other concerned parents has been shown to reduce parental stress [10]. Parents themselves value the contact with other affected parents and consider this interaction to be very supportive [16,18].

Clark [19] stresses that drawing on the patterns of early language learning in children with NH as a model for those with a HL is important. Consequently, a programme that aims at improving parents' natural communication skills towards their preverbal hearing-impaired infant should consider not only knowledge about normal preverbal development but also the supporting role parents take on intuitively in the process of language development. Moreover the characteristics and further functions of *intuitive parenting* as parental support for preverbal development should be looked at in more detail.

1.1. Preverbal communication: dialogue from the very first moment

The preverbal stage encompasses about the first 18 months of an infant's life characterised by two major transitions (1) the transition from preintentional to intentional communication and (2) the transition from presymbolic to symbolic communication [20,21]. Parents support their infant on his/her way to intentional and symbolic communication as a foundation for verbal communication. From birth on, the dialogic character of communicative exchange between infant and parent is an outstanding attribute of their preverbal communication [8,22]. The infant needs help to categorise environmental stimuli and his/her own unconscious behaviour. Parents intuitively answer promptly to the infants' signals, such as vocalisations or yawning as well as non-verbal behaviours. They mirror the infant's vocalisation or mime and interpret the affect lying behind it. These parental responses in daily activities help the infant to learn about his/her own affects and self-efficacy, as a foundation for later intentional communication. Preverbal dialogues present the ideal condition and frame for such learning [8,22,23]. In these dialogues, parents intuitively adjust their interactive behaviour to the infant's limited repertoire by parsing, exaggerating and repeating while concentrating on the infant's focus of attention. So this feedback structures and clarifies perceived stimuli for the infant, as well as the interaction [23,24]. The prosodically modified parental speech style of *intuitive parenting* serves different functions throughout the first year including (a) regulation of attention and affects, (b) communication of intentions and emotions, (c) perception of prosodic features serving different meanings, and finally (d) stressing first words [23,24].

Both infants and parents are biologically predisposed for these early dialogues, which help the child to learn about its social and physical environment and to become an effective communicative partner [8]. In this way, parents intuitively support the child's development by emphasising its newly emergent skills [6]. The older the child becomes the more that parents expand their responses [8].

A main resource of this intuitive and highly didactic parental behaviour is responsiveness. In the literature the concept of 'parental responsiveness' overlaps with the concept of 'maternal sensitivity' (see [25–27] for discussion). Both concepts are closely related [27] without a satisfactory differentiation between them until now. Consequently, the following definition of 'parental responsiveness' that underlies the *MPP* is provided for clarification.

1.2. Parental responsiveness

To be '*responsive*' means to allow the child to be the leading person in communication, to react immediately to its communicative attempts by imitating the child's signal and to respond to this in an expanding way [28,29]. Parental responsiveness provides contingent responses in shared activities that build on joint attention [26,29]. Responses not only refer to vocalisations but also to other notable changes in child's attention, play behaviour or facial expression [26]. In particular, regarding timing and quality parents intuitively finetune their responses [8].

To be raised by parents who offer a highly responsive parenting style has been shown to be beneficial for many developmental domains, such as language, cognitive, emotional and social development [26]. Responsive maternal behaviour has been found to have a positive effect for the child's development, whereas an overstimulating, directive and controlling parenting style is associated with lower developmental outcomes [26,28,30].

Consequently, many parental programmes focus on enhancing parental responsiveness as a key area for parents of children with a developmental delay or risk for a delay [26]. Programmes that focus on enhancing parental responsiveness are labelled as