

The use of FM systems in pre-school children: management issues and practical considerations

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Introduction

Typical current practice within the UK is to provide FM systems via specialised educational services for use in an educational environment. A body-worn transmitter and receiver are introduced at nursery or school when more formal group sessions require an improved signal to noise ratio.

Publications from the US (Moeller et al 1996) have extended the use and shown the benefits of using FM systems in non educational settings for children from the age of one. With the advent of the Newborn Hearing Screening Programme in the UK it is possible and desirable to begin FM use in suitable environments soon after hearing aid use has been established.

Methods

Five children aged one to three with moderate to profound bilateral sensorineural hearing loss and their parents trialled a small commercial wireless FM system with ear level receiver and body worn transmitter. The table identifies relevant information about each subject:

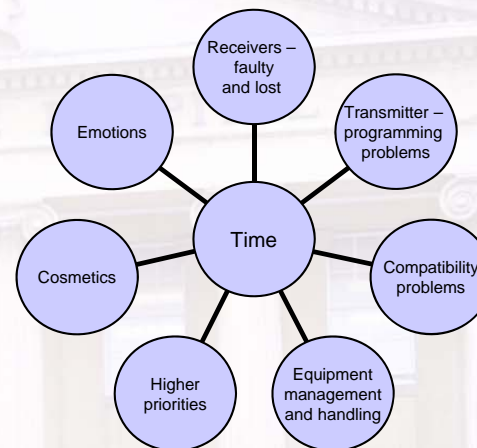
Subject	Age	Degree of hearing loss	Age hearing aids provided	Age hearing aid use established	Setting FM system used
JC	3 years 11 months	Profound	2 months	12 months	Home and nursery
OS	2 years 2 months	Profound	2 months	2 months	Home
OC	3 years 1 month	Moderate	3 months	3 months	Nursery
PG	3 years 7 months	Moderate	4 months	18 months	Nursery
AB	1 year	Profound	1 month	1 month	Home and nursery



Each family was given an FM system and information pack designed to be self explanatory by their Teacher of the Hearing Impaired (ToHI). All ToHIs were experienced in fitting FM systems to older children. The packs contained:

- Easylink transmitter with handbook
- 2 MicroMLxS receivers
- 2 audio shoes
- NDCS booklet – An introductory guide to radio aids
- PEACH questionnaire
- FM listening evaluation for children questionnaire

Management issues and practical considerations



Areas highlighted

All of the families felt that their children would benefit from being able to hear speech more clearly in background noise, as they identified in the PEACH questionnaire. Three out of the five families felt the FM system was beneficial in certain situations, increasing the child's involvement in activities. Nursery staff reported that they were more active participants within the group. Two families eventually decided to defer participating in the study as they were beginning the process of cochlear implant assessment and wished to focus on this.

Equipment management was expected to be the largest problem but was found to be minor compared to emotional issues raised. Initial difficulties with functioning, compatibility and maintenance of the equipment compounded the emotional reaction from both parents and children and meant that fitting took significantly longer than expected. The strength and variety of emotional reactions to the new equipment had not been anticipated. Rejection of body worn FM systems has been documented (Benoit 1989) but because of the discreet nature of the equipment used this was not expected. In this small study it was found that the family's initial reaction to diagnosis and hearing aid use was a predictor for success with the FM system.

The project placed significantly more pressure on teacher time than anticipated resulting in play and language sessions being usurped frustrating both teachers and families.

Next steps

The positive responses from the families and nurseries of three out of five of the children who took part in this pilot study and research on the benefits early introduction of FM justify expanding the project. Our findings suggest that the emotional impact of introducing FM early has to be carefully managed if it is not to jeopardise the scheme. Therefore, in the next phase, to foster confidence in all participants, we plan to pilot joint fitting sessions with parents, ToHI, educational audiologist and audiologist in addition to follow up by ToHI and a central contact for parents and ToHIs to address concerns.



References

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