Comparison of Hearing Aided Children's Language Environment with and without the Use of FM Systems

Imran Mulla, Supervisor: Dr. Wendy McCracken, Advisor: Dr. Kevin Munro.
Audiology and Deafness Group, School of Psychological Sciences, University of Manchester, UK

Background

•The national rollout of the Newborn Hearing Screening Programme in England was completed in March 2006 (www.hearing.screening.nhs.uk)

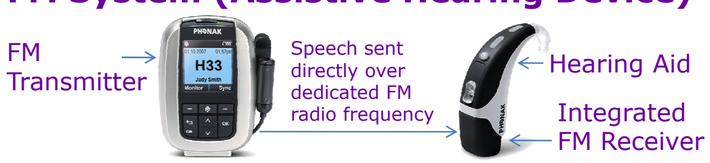
•This unique development has been matched by government sponsored initiatives aimed at raising the standard of early intervention services to families (www.dcsf.gov.uk)

•Alongside these developments, amplification technology has seen rapid advancements, including hearing aids with integrated FM receivers and digital FM technology

•FM amplification has been widely used in educational settings by providing a short microphone distance between speaker and listener (Boothroyd, 1992).

•To date the advantages of integrated FM and the potential benefits of FM systems for pre-school hearing aided children have yet to be formally assessed and explored

FM System (Assistive Hearing Device)



Studies

Longitudinal: a 6 month longitudinal qualitative study to explore parental use of FM systems with very early identified pre-school children

Sub-study: use of LENA to compare adult word counts (AWC), child vocalisations (CV) and conversational turns (CT) in controlled environments with and without FM use

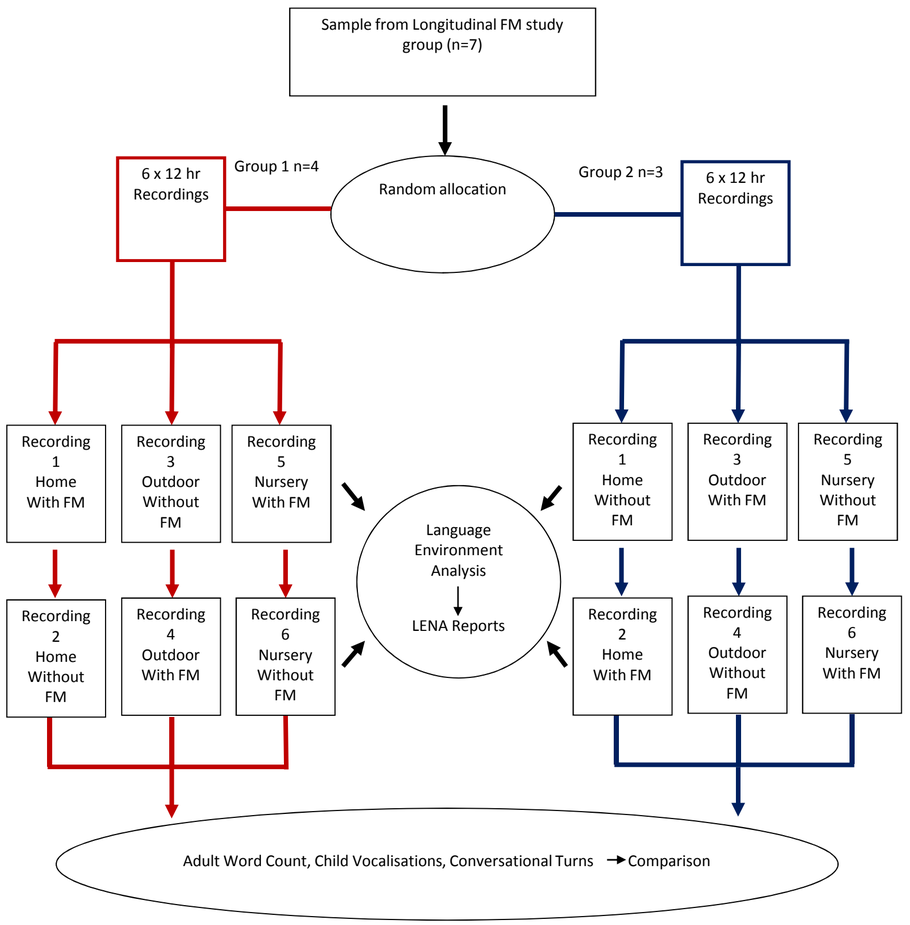
Aim

To compare the language environment of hearing aided children with and without the use of an FM system

Research Question

Is there a difference in the language environment of a hearing aided child when using an FM system compared to when not using an FM system?

Method



Sample

Id	Age at Entry	Hearing Loss	Hearing Aid	Fm Transmitter	FM Receiver
B1	22m	Mod-Sev	Naida SP	Inspiro	mI11i
B2	18m	Severe	Naida UP	Inspiro	mI10i
B3	11m	Moderate	Nios V	Inspiro	mI12i
T1	24m	Severe	Naida SP	Inspiro	mI11i
T2	11m	Moderate	Naida SP	Inspiro	mI11i
T3	16m	Mod-Sev	Naida SP	Inspiro	mI11i
S1	32m	Moderate	Nios V	Inspiro	mI12i

Impact of Study

Findings from this study :

• Will provide detailed information on the language environment of pre-school hard of hearing children

• Will provide quantitative comparisons of AWC's, CV's and CT's with and without FM system use for hearing aided children

•Can be used to counsel parents of hearing aided children on the possible advantages of FM system use with their child

•Can influence service providers decision making process on FM system use with pre-school hearing aided children

References

Boothroyd A (1992) The Fm Wireless Link In Ross, M *FM Auditory Training Systems* Timomium Press, Maryland.
www.hearing.screening.nhs.uk: National Programme: why newborn hearing screening is important. Available: http://hearing.screening.nhs.uk/nationalprog
www.dcsf.gov.uk: Monitoring protocol for deaf babies and children: Available: http://www.dcsf.gov.uk/everychildmatters

Acknowledgements

Sincere thanks are extended to the children, families, audiology services and teachers of the deaf without whom this study is not possible. Thank you also to the ESRC for their funding and Phonak UK for their support throughout.

Contact Information: imran.mulla@postgrad.manchester.ac.uk