Critical Review: Is there Evidence to Support the Use of FM Technology within the Preschool Population?

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Abstract

This critical review examines the current research and trends in using FM technology in preschool children. Study designs include: critical review, case control and cohort study. Overall research supports the use of FM technology in enhancing speech perception for adults and school-age children; however, less attention has been directed at investigating if FM systems are useful in the development of speech and language skills in the preschool population.

Introduction

Sensorineural hearing loss, even to a mild degree, can have a significant impact on a child's ability to perceive speech in noise and quiet. As a result, remediation is necessary in order to facilitate language development. Identifying and treating hearing loss early on in life has posed many challenges for audiologists. The use of amplification has generally been the first step in this process. Advances in hearing instrument technologies over the last decade have provided people with hearing loss benefits of comfort and enhanced speech recognition. Particularly, the use of FM systems has been shown to enhance speech perception for children and adults in the classroom, in auditoriums, churches, and at the theatre (Ross, 1992).

Less attention has been directed at investigating if FM systems are beneficial for infants and young children with hearing loss. Studies have shown that early intervention with hearing aids has significantly improved the speech and language skills of young children with hearing loss. Given that we know FM systems have additional proven benefits for older children and adults, should it be a consideration when fitting young children? In situations where sufficient audibility may not be possible, due to noise or speaker-listener distance, children with hearing loss are particularly vulnerable. Oller and Eilers (1988) contended that the audibility of speech is crucial for speech and language development. Accordingly, since the first 3 years of life are known to be crucial for speech and language development, the benefits of using FM technology need to be further explored for this age group (Moeller et al, 1990). Is there evidence that suggests the use of FM technology is beneficial in hearing aid fittings for preschoolers? To answer this question it is important to examine the current research and trends in using FM technology in young children and what considerations should be evaluated when fitting a young child with an FM syste018(ix862(.)-3.50077( )]TJ
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((FM technology) OR (hearing loss)) AND
((speech intelligibility) OR (audibility) OR

of FM system to improve the listening environment. Furthermore, he noted that in the presence of noise and reverberation, even children with mild hearing losses may have more difficulties hearing compared to their normal hearing counterparts. Noise sources such as open windows, televisions, appliances and talking from adults and other children can make even the home a less than ideal listening environment.

Many studies (Bm

Conclusions

Upon evaluating and analyzing the existing research on the use of FM systems in preschool children, it is clear that the current research is insufficient and further research needs to be conducted on this subject matter. Future studies need to incorporate study designs that can be generalized to all children who have hearing loss so that recommendations and protocols can be developed for the use of FM systems in this population.

Recommendations