



Schoolchildren wearing hearing aids. MADAGASCAR

PIET VAN HASSELT

Hearing aid systems in low-resource settings



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For many patients there is an effective medical treatment for their hearing difficulties. Often, however, no medical or surgical solution is possible. For this large group of patients the next step typically involves rehabilitation – and hearing aid fitting is usually a key part of the process. Modern hearing aids do more than amplify sound. They process sound in dozens of different ways to improve hearing. Many hearing aids help to filter out competing speakers and background noise. They boost soft speech sounds and reduce the intensity of unpleasant loud noise. With a well-fitted hearing aid, satisfaction can be high and the hearing aid leads to an improved quality of life for the wearer. For adults with hearing loss, a well-functioning hearing aid may mean the difference between paid work and unemployment. For children with hearing loss, a hearing aid may be the difference between academic success and school failure. Above all, hearing aids enable both adults and children to communicate better. Connecting with others is a basic human need that cannot be ignored, and this is where hearing aids have the biggest impact.

For these reasons, and many more, a recent World Health Assembly resolution urged member states to 'improve access to affordable, cost-effective, high quality, assistive hearing technologies and products, including hearing aids'.¹

Access to hearing aids: a very unequal picture

Today, over 466 million people live with disabling hearing loss. It is predicted that by 2050 nearly one in 10 people will have a hearing loss. The distribution of these hearing losses is not uniform across the world and two-thirds of people with severe to profound hearing loss live in a low- or middle-income country (LMIC). The production of all hearing aids today only fulfills 10% of global need, and in developing countries this figure is less than 3%.²

In upper-income countries, there are very well-developed hearing aid purchase and fitting support systems. Yet in LMICs, where the need for hearing aids is the greatest, the situation can be very different, with a lack of access to hearing aids and their associated rehabilitation services. The World Health Organization (WHO) estimated in 2007 that 35 million hearing aids are needed each year in LMICs, but only one million hearing aids are fitted.³

There are a number of reasons for this unmet need, but the most obvious and immediate is the discrepancy between the cost of hearing aids and the purchasing power of potential users in LMICs. The hearing aid global market is dominated by five European/North American manufacturers. They focus on producing

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high-quality hearing aids with advanced features, which provide excellent rehabilitative support but are not appropriate for many patients in LMICs, simply because they are not affordable. There are other costs associated with hearing aid use that patients may not be able to afford either, such as maintenance expenses and the regular purchase of hearing aid batteries; in addition, those with more severe hearing loss need custom-made earmoulds.

Another effect of the dominance of hearing aid manufacturers based in high-income countries is that hearing aids may lack features that would make them more adapted to use in LMICs, such as resistance to dust and moisture. For this reason, WHO has produced a document recommending evidence-based design features that are considered essential for hearing aids to be used in LMICs.⁴

There has been some effort to overcome obstacles linked to hearing aid technology itself, such as the production in some regions of alternative hearing aid brands available at much lower cost (but of lower quality), the bulk purchase of hearing aids by government or non-government agencies at a substantially reduced price, the availability in some regions of funding options through basic private health insurance plans or from consumer loans, and the development of rechargeable hearing aid batteries.

Access to hearing aids is not enough

It is not enough to hand patients a hearing aid – successful fitting needs an appropriate fitting service and a strong support system. Who will assess the patients' hearing, fit the hearing aids and provide follow-up care? LMICs generally have a shortage of professionals to provide hearing assessments and rehabilitation services. Many health professionals migrate to upper-income countries in search of improved opportunities. Audiologists are often the key professionals in the hearing healthcare system – they have the most knowledge of hearing aids and hearing aid fitting. Yet they are among those likely to travel abroad for career advancement. For example, over 50% of Indian audiologists are estimated to have relocated to other nations.⁵

This lack of personnel is a major barrier to hearing healthcare and shows that it is important not to focus exclusively on hearing technology itself and consider all the other factors needed to meet the growing need for hearing aids in LMICs.

A comprehensive approach involving the community

Hearing aid fitting services are often neglected because it is thought by health service managers that there is a lack of demand for such a service. Will anyone use a hearing aid service? The answer to this most basic question seems obvious – of course patients with hearing loss will want treatment! – but this is not always correct, because community awareness is still lacking in many LMICs. Individuals need to know that hearing loss can be treated and that affordable hearing healthcare is available in their local area. Raising community awareness is essential. It may need to be done before starting a service, even if all other parts of the hearing aid fitting system are in place. World Hearing Day (3 March each year) is an appropriate time to schedule awareness-raising activities that spread information about hearing loss and ways to manage the disorder.

Participation of health personnel at community level is also crucial. Community healthcare workers frequently see both adults and children with hearing impairment and can play a role in raising awareness and in establishing comprehensive hearing aid services. It has also been shown in some settings that healthcare workers, nurses, special education teachers and others with a background in rehabilitation can successfully assess hearing, fit hearing aids and provide essential follow-up services. What is needed is a quality training programme, a stable workforce and ongoing guidance and support from those professionals who are available in the community.

This issue of *Community Ear & Hearing Health* gives readers a chance to consider the bigger picture: what hearing aids are and how they are fitted, what their impact is, practical considerations when starting a hearing aid service, and some of the barriers that must be overcome for successful hearing aid fitting.

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