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Programmatic Approach to Hearing Health in Low- and Middle-Income Countries

By Ben Sebothoma, PhD, and Katijah Khoza-Shangase, PhD

Low- and middle-income countries (LMICs) continue to experience the highest incidence of hearing loss.[1] With the incidence of hearing loss projected to reach approximately 2.5 billion globally in the next couple of decades[2], LMICs may bear the highest burden of this proportion. Within the South African context, various risk factors, which form part of the quadruple burden of diseases such as the human immunodeficiency virus (HIV)[3,4], diabetes[5], tuberculosis (TB)[6], and hypertension[7] increase the risk of hearing loss, with COVID-19 having potentially added to this challenge.[8] Ntlhakana et al.[9] found that the combined effects of risk factors increase the risk of hearing loss in South African mine workers, with Khoza-Shangase[10] comprehensively discussing these risk factors for this important sector of the South African economy while arguing for their contextualization.

Despite the ever-increasing prevalence of hearing loss in LMICs, such as South Africa, established hearing protocols such as hearing screening do not seem to have improved access to ear and hearing health care to a wider population in these regions. Prevalence of hearing loss remains underreported, thus negatively influencing governmental obligation to provide equitable resources and focus to hearing health care programs.[11] Extreme shortages of ear and hearing health practitioners[12-14], and limited healthcare institutions that provide hearing healthcare services, with preventive ear and hearing care measures taking a back seat[13,15], exacerbate the rapid increase of hearing loss in LMICs. Given that approximately 80% of the South African population, for example, access health through the government funded public health sector, patients who experience ear and hearing related symptoms may not have sufficient access to services due to contextual realities including financial challenges such as transportation money to access health care centres, as well as the general population's limited awareness of the existence of hearing health care practitioners as a profession.[16,17]

The shortage of hearing health practitioners seen through capacity versus demand challenges and the general lack of resources form part of the dilapidated health care system, which lacks the capabilities to deal with most health problems.[18] The strained health care system, at the expense of quality of life, tends to prioritize life-threatening conditions, which hearing loss does not fall under. It is therefore not surprising that some preventive audiological programs such as the hearing conservation programs (HCPs) do not seem to yield positive outcomes of zero ear harm due to excessive noise in mines[19], while early hearing detection and intervention (EHDI) and ototoxicity monitoring programs remain at infancy and developmental stages.[20-22]



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TELEAUDIOLOGY

Teleaudiology emerged as a promising vehicle to deliver hearing health care to a larger population, mitigating the capacity versus demand challenges as far as extreme shortage of hearing health care practitioners is concerned. Khoza-Shangase and Moroe[23] strongly encourage the use of teleaudiol-

ogy within the South African mining context to mitigate the challenges relating to access. Teleaudiological services imply that a hearing health care practitioner can remotely provide audiological care to patients. Because patients do not have to travel long distances to see a professional, this technique seems to address the costs associated with traveling long distances and access problem, and it also opens access to human resources beyond the boundaries of the area where the services are required – thus South African patients, for example could be seen by audiologists outside South Africa as long as trained and regulated patient site facilitators become available.[24] Research has explored and indicated that teleaudiology can be used to provide majority of the audiological services, which include middle ear assessment[25], hearing assessment, hearing aid fitting, programming of cochlear implants, as well as providing aural rehabilitation and counseling.[26]

It is clear that teleaudiology has created some hope in improving access to health care. However, on its own, and without strategic application, the teleaudiology model of service delivery may fall short in achieving its goal; particularly within the realities of the South African context.

It is clear that teleaudiology has created some hope in improving access to health care. However, on its own, and without strategic application, the teleaudiology model of service delivery may fall short in achieving its goal; particularly within the realities of the South African context. Closer examination of teleaudiology in LMICs indicates that this model follows the same traditional method of providing hearing health care, which functions outside and/or parallel to existing health care programs.[27] Current methods of provision of ear and hearing care in the South African context still primarily comprise of standalone audiology clinics in state hospitals or private practices in private clinics or rooms. Khoza-Shangase has consistently argued, for example, for a programmatic approach to ototoxicity assessment and monitoring within the quadruple burden of disease in South Africa.[21,28-29] This is where, for example, audiology forms part of all HIV/AIDS and TB programmes in the country, such that budgeting falls under the "life threatening conditions" budget; thus, allowing for increased access as well as sustainability of all preventive audiology initiatives. The traditional method of providing hearing health care has, therefore, been less effective due to the burden of disease prioritization budget allocation approach adopted by National governments – where hearing loss is viewed as non-life-threatening, and thus is of less priority to other conditions. In countries such as South Africa, health resources are distributed inequitably, with hearing health receiving a modicum of those resources, and efficacy proven approaches such as universal newborn hearing screening programs not government mandated. The lack of infrastructural development for technological advancements, as well as lack of training and/or availability of patient site facilitators also prohibit teleaudiology to function optimally.[30]

PROGRAMMATIC APPROACH

Given that hearing health in LMICs often receives the modicum of resources, with priority given to major burdens of diseases (e.g., quadruple burden of disease in South Africa), this continues to affect ear and hearing health care provision. Therefore, an alternative model of health care, which may capitalize on the already resource allocated health care initiatives that are considered priority can allow for relatively equitable sharing of resources, which might be useful, particularly for hearing health. Current authors, therefore, argue that a programmatic approach towards ear and hearing care, where ear and hearing health forms part of existing health programs may be a useful alternative. Programmatic approach is a model that encourages different health programs to function within the same umbrella and share resources. Given that a programmatic approach to health care may allow different health care programs such as school health program; prevention of mother-to-child transmission (PMTCT) of HIV; child immunization programme, maternal, child and women's health and nutrition (MCWH&N); HIV awareness programmes; ward-based primary health care outreach etc. that are already budgeted for, have monitoring embedded in them, and are already accepted by various professionals and paraprofessionals, this approach may be a cost-efficient and responsible alternative that improves service delivery. This might be even more productive as it might allow for the use of task shifting, where already existing paraprofessionals can be utilized with audiologists serving as program managers, thus addressing the capacity versus demand challenges.

Khoza-Shangase[31] argues that it is imperative that ear and hearing health care practitioners devote attention and resources to health programs that are aimed at burdens of disease, and health programs that garner department of health support, and are therefore better resourced and sustainable, to achieve preventive outcomes as far as ear health and function are concerned. Shapiro and Galowitz[32] believe that a programmatic approach enables a number of programs to operate under the same umbrella. Current authors are of the view that a programmatic approach to hearing health is the best and alternative solution, particularly in resource-constrained environments. This approach may not only be helpful in as far as resources are concerned, but also strengthen the interdisciplinary collaboration, and improve preventive care. Coupled with teleaudiology, this approach would enhance ear and hearing care within these contexts.

References for this article can be found at http://bit.ly/HJcurrent.