

Original Research Article

Current Rehabilitative Concepts in Ear Nose and Throat department, University of Medical Sciences Teaching Hospital (UNIMEDTH): Challenges encountered

Comment [D1]: Reformulate

Abstract

Comment [D2]: The summary needs to be brief and mention the superior numbers in the results and discussion

Introduction:

Unaddressed communication disorders are multidimensional, affecting individuals physiologically, psychologically and emotionally. The quality of life of these individuals can be improved with rehabilitative measures, justifying this study.

The study therefore aims to assess the impact of rehabilitation on these patients, determine the challenges and proffer possible solutions.

Method:

Eighteen months prospective study on audiological and speech disorders among ENT patients in the University of Medical Sciences Teaching Hospital, Ondo State, from April 2021 to September 2022 was carried out. History was taken, general examination and full E.N.T. examinations were done. Those with audiological disorders from canal blockage due to foreign bodies, debris and impacted wax had ear syringing. Others with persistent audiological condition were further evaluated and treated accordingly, with Hearing Aids trial and fitting inclusive. Patients with speech disorder had speech therapy after baseline audiological screening. Data were represented in tables and figures. P value < 0.05 was statistically significant.

Result:

930 patients presented at the ENT clinic. 537 (57.74%) females and 393 (42.26%) males. Of this, 405 (43.55%) patients had audiological conditions while 23 (2.47%) had speech disorders. Impacted wax, tinnitus, hearing loss, foreign body in the ear and delayed speech development were commonest. 297 had syringing while 105 patients were further evaluated. 369 of 405 patients were successfully rehabilitated. 3 stroke patients had good speech recovery.

Predominant challenges encountered were unavailability of instruments and uncooperativeness of elderly patients. Weekly savings and incorporation of dedicated relatives for home therapy ensures solutions respectively.

Conclusion: Rehabilitation in E.N.T., though gradually progressive, is beneficial. The guiding concept is patience.

Keywords: Rehabilitation, Concept, Audiological, Disorder, Speech

INTRODUCTION:

Unaddressed communication disorders are multidimensional, affecting individuals physiologically, psychologically and emotionally. This is due to the fact that man's ability to interact and interrelate with his/her environment is basically tied to hearing and speech and this is instrumental to his/her general wellbeing. Hence, any condition that threatens the ability to effortlessly utilize the sense of hearing and speech in day-to-day tasks resultantly affects other basic activities of these individuals [1, 2]. Communication disorders are disorders that affect hearing and speech organs and prevent the individual from effectively engaging in any

Comment [D3]: source

meaningful conversation. American Speech and Hearing Association [3] defined communication disorders as impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication disorder is often manifested in the hearing, speech and processing of language. Such conditions are numerous and may include; hearing loss, tinnitus, canal blockage, vertigo, Speech disorders etc. These disorders are often caused by several factors but most of the causes were mainly congenital factors, ototoxicity, infections etc. For those with speech disorders, the causes were majorly, congenital and stroke related whereas for hearing disorders, it was mostly age, ototoxic drugs, childhood infections etc. [4; 5; 6].

Comment [D4]: source

Communication disorders are often associated with poor cognitive ability, depression, loneliness, restricted access to public services, stigma, isolation, discrimination, poor career choice, financial burden, lack of job satisfaction etc. Furthermore, impairs communications also reduces the quality of one's life leading to lack of satisfaction in virtually all activities. Hence, the need for audiologic and speech rehabilitation once a patient is diagnosed with a communication disorder.

Comment [D5]: source

PREVALENCE: The continent of Africa is still struggling to have reliable healthcare related data and Nigeria is no exception to this. However, there is a general allusion to the high prevalence of communication disorders in the country like in many other developing and third world countries. 17 different studies reviewed on communication disorders generally and on hearing and speech disorders separately confirmed this particularly in children. Communication disorders is reported to be within the range of 0.5% to 7% if not higher [7; 8, 9, 10, 2, 11, 12, 13, 14, 15]. For instance, Iloje et al [10] in their study using a sample of 965 children reported that 80 of them (8.3%) had speech and language disorders. Kodiya et al [16] also reported that 26.2%

in a sample 5485 had hearing disorders. This put the prevalence of communication disorders in Nigeria between 10%-15%, a significantly high figure hence the need for Audiological and speech intervention or rehabilitation services.

AUDIOLOGIC AND SPEECH REHABILITATION: Audiologic and Speech rehabilitations are rehabilitation programmes and/or services that primarily seeks to help patients with hearing and speech disorders overcome the challenges caused by these conditions, consequently improving the quality of their day-to-day life. Audiologic and speech rehabilitation is relatively new in Nigeria hence, most patients are unaware of rehab services and programmes available in the country. Audiological and speech rehab services are numerous and include among others; hearing technologies selections and fitting (hearing aids, cochlear implants and middle ear implants), sign language and other means of sensory substitution (such as speech reading, use of print on palm or Tadoma, signed communication), and rehabilitative therapy to enhance perceptive skills and develop communication and linguistic abilities and speech (re)training services [6; 3]. It was against this backdrop that this study was set to investigate the audiological and speech rehabilitating services available for patients and their impacts at the University of Medical Sciences Teaching Hospital and challenges confronting service delivery.

Comment [D6]: source

METHODOLOGY

Aim

The aim of this study was to investigate the impact of audiologic and speech rehabilitation programmes and /or services on speech and hearing disorders among ENT patients in UNIMEDTH. Secondly, the study also aims at investigating the prevalence of audiological and speech disorders among ENT patients.

Patients and Methods

Patients were Ear, Nose and Throat patients with Audiologic and speech disorders in the University of Medical Sciences Teaching Hospital (UNIMEDTH) Ondo Complex, Ondo State that visited the clinic between April 2021 and October 2022 (i.e. 18 months).

This is a prospective study assessing data of patients with Hearing loss, Tinnitus, Canal blockage, speech Disorders etc that visited ENT clinic of the University of Medical Sciences Teaching Hospital Ondo Complex, Ondo State during the period under review. Subsequently, data of each group or category of disorder were collected, evaluated and the outcomes of the different rehabilitation programmes administered were also analyzed. Between this period, 930 patients visited the clinic. Otitis Media, Hearing loss, Tinnitus, Ear foreign bodies, otitis externa, Speech disorders, Rhino sinusitis, allergic rhinitis, Tonsillitis, BPPV, Otolgia, Nasopharyngeal tumor, nasal polyps, Epistaxis, thyroglossal cyst etc. were the most frequently occurring conditions among patients. Only data of patients with hearing and speech related disorders were of interest to the study as such patients with hearing loss, tinnitus, ear foreign bodies, BPPV, and speech disorders were examined

The findings of this study are presented below beginning with the prevalence of each pathology.

RESULT:

Table 1: The findings of the study are presented below first with demographic data of Patients

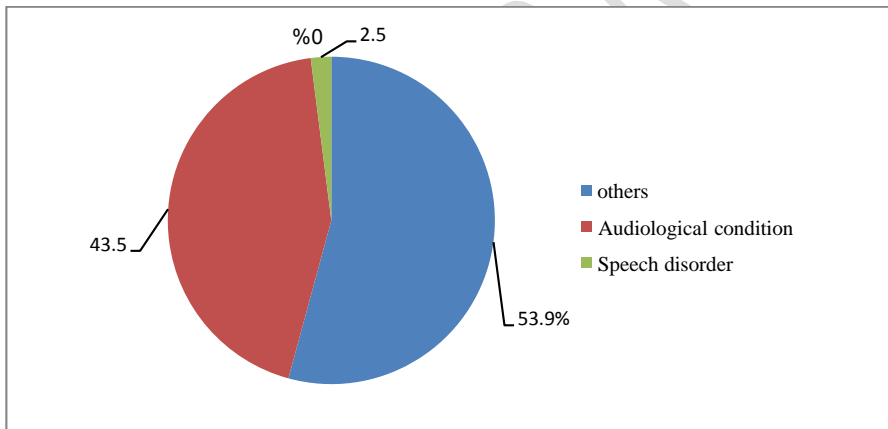
Gender	Adults	Paediatrics	Civil servants	farmers	Artisans	Trader	students	Total (%)
Male	275	118	227	52	44	29	41	393 42.26%

Comment [D7]: source

Female	361	176	334	22	78	47	56	537
								57.74%
Total	636	294	561	74	122	76	97	930
(%)	68.39%	31.61%	60.32%	7.96%	13.12%	8.17%	10.43%	100%

Table 1 above revealed that female patients (57.74%) presented with audiological conditions than their male counterparts (42.26%) in a ratio (M: F) of 1:1.4. More adults presented with communication disorders than children especially hearing loss.

Figure 1: Representation of ENT Pathologies



From the Chart above, a combination of nose and throat conditions such as Rhinitis, Rhinosinusitis, nasal polyp, epistaxis, nasopharyngeal tumour, tonsillitis, thyroglossal cyst etc with 502 (53.98%) were the most occurring conditions followed by hearing related conditions such as hearing loss, tinnitus, canal blockage, otalgia, Otitis media etc with 405 (43.55%)

whereas speech disorders were the least appearing conditions with 23 (2.47%). From this, hearing disorders were the commonest ENT conditions among patients with an estimated figure of 4 out of every 10 patients.

Table 2: Pathology and Rehabilitation Services

S/N	Pathology	Frequency	Rehabilitative service	Outcome
1	Hearing loss	105	Counseling, H/A trial and fitting, hearing conservation program etc.	Moderately success
2	Tinnitus	45	Pathological based treatment option	Moderately effective
3	Canal blockage coexisting with other conditions	297	Ear syringing & manual removal	Highly effective
4	Vestibular disorders	4	Pharmacology option and exercises	successful
5	Speech disorder	23	Speech therapy	successful
6	Otalgia	21	pharmacology	successful

From Table 2 above, audiologic and speech rehabilitation were largely successful baring few limitations encountered. Some patients had two or more conditions coexisting. For example, some patients with cerumen impaction also presented with otalgia and hearing loss. Out of the 105 patients with hearing loss who were further evaluated, all benefited from Hearing Aid trial and were therefore recommended for fitting. 23 patients with speech disorders all needed speech

therapy however, only 3 patients with stroke related speech problem proceeded for therapy and all regained their lost speech.

DISCUSSION:

The findings of this study agreed with findings from previous studies on the gender and prevalence of the conditions among patients. On gender representation where more female presented with audiological and speech disorders than their male counterparts, Ravi et al [17] found that male are susceptible to communication disorders than female but men rarely seek medical intervention for their conditions and this explains why more female were diagnosed with audiological and speech conditions than male in this study. On the age range with more communication disorders, it was discovered that more adults have hearing loss especially the elderly whereas more paediatric have speech disorders. This finding is also confirmed by WHO [6] and National Institute of Health reports that hearing loss increases with age due to sensory degeneration that is associated with aging.

On the prevalence of ENT conditions, audiological disorders as confirmed in this study are the most frequently occurring ENT conditions among patients across the world. This is corroborated by Konadath, Chatni, Lakshmi and Saini [18] study to ascertain the prevalence of communication disorders in six islands in Lakshadweep which found 119 out of 188 (63.30%) to have audiological conditions. The above authors further confirmed that speech disorders such as fluency, voice, articulation, language etc. although have lower prevalence rate when compared to audiological conditions but are still significantly widespread among patients.

On rehabilitation/or treatment services administered, treatment of patients with cerumen impaction, canal blockage, otalgia etc. through irrigation, manual removal and drugs were the

most effective. Whereas speech, tinnitus and vestibular rehabs were the most difficult and less effective procedures administered to patients. This is apparently because tinnitus treatment and speech therapy are difficult to find, requires time, efforts and consistency to achieve meaningful success compared to other conditions that can be easily treated using drugs.

Every Patient that present in any hospital comes with the assurance and hope that their condition would be treated however mild such health challenge might seem. Audiologic and Speech rehab aim at bringing these expectations to pass in all patients with hearing and speech disorders. These programmes were not different in Unimedth as majority of patients were successfully treated. These Rehab services have contributed hugely in the reduction of speech and hearing disorders in the country in line with the Sustainable Development Goal (SDGs) and WHO demand on global health. Hence, the revelations of this study confirmed previous studies that hearing and speech rehabilitation services are cornerstones to combating widespread communication disorders as the more people benefit from these services the lesser the prevalence of these disorders and their associated psychological challenges [19; 6 ; 20].

Audiologic and Speech rehabilitations are indispensable intervention programmes with significant milestones in the lives of patients with communication disorders regardless of the scale of these rehab services available. Patients with communication disorder that presented at the clinic were either successfully rehabilitated or counseled on what to do especially for those with financial challenges and the outcome is that more patients are becoming aware of rehabilitation services available and the need for rehabilitation compared to 3-4 years ago. The findings of this study further confirmed previous studies that those who seek intervention services for their hearing and speech conditions are likely to have better opportunities to

overcome problems associated with their conditions and live satisfactorily than those who do not [21, 22; 23].

Every new health programme in a traditional Nigerian society is bound to struggle on account of many factors hence speech and hearing rehab is no exception. More than 50 percent of patients were unable to carry out rehabilitation programme or procedures recommended due to financial difficulties which also buttress the current financial struggles in the country. Besides this, unavailability of most audiological and speech instruments in the hospital, cultural beliefs and practices, ignorance etc prevented some patients from gaining access to quality rehabilitation services. Evidence of this study supports revelations of previous studies that audiological and speech rehabilitations in low income countries is always hindered by the cost of service delivery, lack of equipment and personnel, and the general poor healthcare services [24, 25, 26]. Notwithstanding these challenges, audiological and speech rehabilitations have always achieve maximum success and patients' needs are readily met.

RECOMMENDATION:

Communication disorders are public health conditions with huge implications that span beyond the individual to the general society if not treated as early as possible once detected hence the following recommendations are made:

- Organizing community sensitization programmes with the aim of creating awareness of the prevalence, causes and implications of speech and audiological conditions, ways of preventing these conditions as well as the hearing healthcare services available in the country.

- Subsidizing hearing healthcare services for the general public in order to encourage access to rehabilitation services as a greater majority of the citizenry cannot afford the cost of healthcare services in the country.
- The government should ensure effort is made in establishing functional audiological and speech centers across the 774 Local governments in the country in order to facilitate systematic hearing and speech screening and rehabilitation services.
- Promoting free health screening programmes by the masses especially for the paediatric population by the government and private individuals.

CONCLUSION:

Audiological and speech (re)habilitations play fundamental roles in restoring the loss functions of individuals with communicative disorders thereby mitigating the negative impacts of the conditions and enhancing their day-to-day quality of life. Such services as hearing technologies, alternative communicative modalities and speech therapy / service do not just assist the individual but also enhance the quality of one's life leading to huge satisfaction in general life tasks. Patients that presented at the clinic in the period under review were successfully rehabilitated except for those who were forestalled from rehabilitation services on the grounds of financial challenges, unavailability of instruments and other factors. It was however recommended that considering the high prevalence of audiological and speech disorders among patients in the country, effort should be made to promote awareness about the negative implication of these disorders and available rehabilitative services that will help patients overcome the associated challenges. Rehabilitation though gradually progressive, is beneficial. The guiding concept is patience.

Ethical Consideration: A letter for Ethical clearance was sought and received from Research Ethics Committee, Ear, Nose and Throat Department, University of Medical Sciences Teaching Hospital, Ondo State, Nigeria.

Data Availability statement: Data of this study are available and can be accessed if reasonable request is made to the lead author and is granted by others.

Limitation:

Major limitation was high cost of hearing aids and non-availability of instruments.

REFERENCE:

1. Varsha NS and Praveena J. Prevalence of speech language and hearing impairment in school going children of rural area: a longitudinal study. *International-Journal-of-Community-Medicine-and-Public Health*,2020;23946032.Doi:<http://dx.doi.org/10.18203/2394-6040.ijcmph>.
2. Somefun OA, Lesi FEA, Danfulani MA and Olusanya BO. Communication disorders in Nigeria Children. *Int J Pediatr Otorhinolaryngol*. 2006 Apr;70(4):697-702.doi: 10.1016/j.ijporl.2005.09.003. Epub 2005 Oct 6.
3. American Speech and Hearing Association (ASHA). Adult hearing screening (practice portal). Retrieved December 22, 2022.https://www.asha.org/practice_portal/professional-issues/Adult-Hearing-Screening/
4. Fakhrahehimi S, Dahqan A and Bakhshani NM. Causes of speech disorders in primary School Students of Zahedan. *Zahedan journal of research in medical sciences*(2013)

5. Goulart BNG, Chari BM, Almeida CPB Factors associated with speech, hearing and language disorders among children in a primary care outpatient center. *J Hum Growth Dev.* 2017; 27(3):281-287. DOI: <http://dxdoi.org/107322/jhgd.124092>
6. World Health Organization (2021) Hearing screening considerations for implementation. 978-92; 4, 0032767. <https://www.who.int/health-topics/hearing-loss>
7. Aremu SK, Afolabi OA, Alabi BS and Elemukan IO. Epidemiological profile of speech and language disorder in North Central Nigeria. *Int J Biomed Sci.* 2011 Dec; 7(4): 268–272.
8. Adegbiyi WA, Olajide GT, Olubi OO, Ali A, Adeniyi A. Community disorders among Children in a Developing Country, Nigeria. *Int J. biomedical Sciences* 2019. 12 (4). PP. 1-6. <HTTP://EPRINTS.ABUAD.EDU.NG/ID/EPRINT/788>
9. Ikenga V.O and Oparaodu U.A. Pattern of communication disorders in tertiary hospitals in Nigeria. *Greener Journal of Medical Sciences*, 2021: Vol. 11(2), pp. 240-242, <https://gjournals.org/GJMS>
10. Iloeje S.O and Izuora G.I. The pattern and prognosis of speech disorders among children in Enugu, Nigeria. *Annals of Tropical Paediatrics*: <https://doi.org/10.1080/02724936.1991.1174747>
11. Olusanya BO, Okolo AA and Ijaduola GTA. The hearing profile of Nigeria School Children. *international-journal-of-pediatric-otorhinolaryngology*, 2000 vol 55; (173-179): [https://doi.org/10.1016/S0165-5876\(00\)00393-1](https://doi.org/10.1016/S0165-5876(00)00393-1)
12. Lasisi AO, Abiona T and Gureye O. The prevalence and correlates of self-reported hearing impairment in the Ibadan Study of Ageing. *Trans R Soc Trop Med Hyg.* 2010 Aug; 104(8): 518–523. doi: 10.1016/j.trstmh.2010.03.009

13. Shuaibu I.Y, Chitumu D, Mohammed B, Shofoluwe N, Usman MA, Bakari A and Lawal. Pattern of hearing loss in a tertiary hospital in the north Western Nigeria. *Sahel Medical journal*: DOI: 10.4103/smj.smj_57_17
14. Nwosu N. Systemic Review of the Prevalence of Speech and Language Disorders in Nigeria. *International journal of humanity and social science*. May 2015, Vol. 5, No. 5: ISSN 2220-8488 (Print), 2221-0989 (Online)
15. Bakare MO, Ebigbo PO, &Ubochi VN, Prevalence of autism spectrum disorder among Nigerian children with intellectual disability: A stopgap assessment. *Journal of Health Care for the Poor and Underserved*, 2012, 23 (2), 513-518.
16. Kodiya AM, Afolabi OA and Ahmad BM. The burden of hearing loss in Kaduna, Nigeria: A 4-Year Study at the National Ear Care Centre. *Ear Nose and Throat Journal*. 2012: Vol 9 <https://doi.org/10.1177/014556131209100407>
17. Ravi SK, Sumanth P, Saraswati T, Chinoor MAB, Ashwini N, Ahemed E. Prevalence of communication disorders among school children in Ballari, South India: A cross-sectional study. *Clinical Ep and Global H*; 2021. <https://doi.org/10.1016/j.cegh.2021.100851>
18. Konadath S, Chatni S, Lakshmi MS, and Saini JK. Prevalence of communication disorders in a group of Islands in India. *Clinical Epidemiology and global Health*;2017(79-86). www.elsevier.com/locate/cegh
19. Brodie A, Smith B and Ray J. The impact of rehabilitation on quality of life after hearing loss: a systematic review. *Eur Arch Otorhinolaryngol*. 2018; 275(10): 2435–2440. doi: 10.1007/s00405-018-5100-7

20. Nwosu N. Practical steps in the rehabilitation of children with speech and language impairment in Nigeria. *Niger J Paed* 2015; 42 (4): 293–298. DOI:<http://dx.doi.org/10.4314/njp.v42i4.2>
21. Meryer C and Hickson L. What factors influence help-seeking for hearing impairment and hearing aid adoption in older adults?. *Int J Audiol*. 2012 Feb; 51(2):66-74. doi: 10.3109/14992027.2011.611178
22. Edgett LMD. Help-seeking for advanced rehabilitation by adults with hearing loss: an ecological model. PhD Thesis. Vancouver, Canada: University of British Columbia, 2002. Google Scholar
23. Caldera AV, Wickremasinghe R, Munasinghe TU, Perera KM, Mutiah N, Tilakaratne D et al. Availability of rehabilitation services for communication disorders in Sri Lanka: a cross sectional survey. *BMJ*: <http://dx.doi.org/20.1136/bmjopen-2023-071620>
24. Bhattarai B, Sanghavi T, Abhishek B.P. Challenges in delivering tele-practice services for communication disorders among Audiologists and Speech Language Pathologists. *Indian Journal of Otolaryngology and Head & Neck Surgery*: 2022, 74, 4360-4365.
25. Brouillette R. Rehabilitation of hearing loss: challenges and opportunities in developing countries. *JOUR*: 2011/01/01. 141-153.
26. World Health Organization. Deafness and hearing loss. 2019, Retrieved from <https://www.who.int/newsroom/fact/details/deafness-and-hearing>