

Study of Prevalence of Hearing Loss in School Going Children Between Ages 8 to 14 Years of Jodhpur (Rajasthan)

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ABSTRACT

Introduction: Normal hearing is very important for overall development of child. If a child is suffering from hearing loss, it affects his ability to acquire knowledge and skills. So this study was done to estimate true prevalence in primary schools of Jodhpur region between ages 8 to 14 years.

Material and Methods: Total 1200 students were included in study from various schools of Jodhpur between ages 8 to 14 years. Detailed otological examination done and hearing assessment done in silent room with 512 HZ tuning fork test. All data with history obtained and analysed.

Results: Total 146 students from 1200 students had hearing loss with most common type of hearing loss is conductive.

Conclusion: Hearing loss specially in age group 8 to 14 years of school going children is preventable by simple measures like paying attention to children regarding hearing by their parents, teachers, Para-medical staff and conducting regular screening programs.

Keywords: Hearing Loss, School Going Children, Ages 8 to 14 Years

INTRODUCTION

Hearing loss is one of the most common sensory defects in our population. As per WHO, 63 million people in India are suffering from significantly auditory impairment while 360 million people of world population suffer from disabling hearing loss. Among them number of children is 32 million.¹ Hearing loss greater than 30 DB in the better hearing ear in children known as disabling hearing loss. Normal hearing is very important for overall development of child. If a child is suffering from hearing loss it affects his ability to acquire knowledge and skills. If hearing loss in children left untreated or ignored for a long time it could affect their learning ability and skills indirectly. The percentage of patients suffering from hearing loss come to hospitals for treatment represent the floating tip of ice burg and most cases are undiagnosed in community.² So this study was done to estimate true prevalence in primary schools of Jodhpur region between ages 8 to 14 years.

MATERIAL AND METHODS

This study was done from July 2014 to June 2015. 1200 Students ages 8 to 14 years were selected randomly from various coeducational urban and semi urban schools in and around Jodhpur city of Rajasthan.

Inclusion Criteria

All the children in the age group of 8 to 14 years included in the study because in this age group voluntary threshold could be easily measured and middle ear problems due to

Eustachian tube function are very less.

Exclusion Criteria

Students with congenital defects like cleft palate, congenital hearing loss, cochlear implant surgery students, hearing AIDS using students and students not willing to participate in the study.

The students were briefed about the study. A detailed otological examination was done and any wax or debris was removed and status of tympanic membrane was noted with otoscope. Hearing assessment was done with tuning fork 512 Hz in silent room and hearing status accessed. All data were collected and analyzed.

RESULTS

Total 1200 students 510 female and 690 male were included in the study. Total 146 cases were found some hearing defects as shown in table 1. Conductive hearing loss was found in 130 cases and mixed hearing loss was present in 6 cases. Only 10 cases had sensory neural loss.

Table 2 showed causes of hearing loss on basis of otoscopy and tuning fork test. Most common causing of conductive hearing loss was chronic suppurative otitis media (46.15%) followed by otomycosis (23.07%) and otitis externa (15.33%).

DISCUSSION

Hearing is one of the basic senses and normal hearing is must for development of speech, language and communication. According to IDEA (Individual with Disabilities Education Act) hearing impairment is defined as "impairment in hearing, permanent or fluctuating that adversely affects a child performance". If hearing impairment is so severe that

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Type of hearing loss	Number	Incidence	Prevalence
Conductive	130	89.04%	10.83%
Mixed	6	4.11%	0.5%
Sensory Neural	10	6.85%	0.83%
Total	146	100%	12.16%

Table-1: Type of hearing loss and its prevalence

Causes	Number	Incidence (%)	Prevalence (%)
Chronic suppurative otitis media	60	46.15%	5%
Secretory Otitis Media	20	15.38%	1.66%
Otomycosis	30	23.07%	2.5%
Otitis Externa	10	7.69%	83.83%
Metal Atresia or Stenosis	4	3.07%	0.33%
Others	6	4.61%	0.5%

Table-2: Causes of conductive hearing loss on basis of otoscopy and tuning fork test

it impair child in processing linguistic information through hearing with without amplification that affects a child's education performance, known as "Deafness". Child with hearing impairment due to any cause remained unnoticed and impaired his ability of learning and skills. In our study prevalence rate of hearing loss in our age group was 12.16% in apparently normal school children. Study done by Mishra et al showed prevalence rate of 11.7% in similar study while Tuli et al showed 12.5% prevalence rate comparable to prevalence rate in our study.^{3,4} In study done by Sapra et al in Jaipur and Nduka et al in Nigeria shown higher prevalence rate 31.97% and 50.5% respectively.^{5,6} This may be due to lack of awareness about the problem of hearing loss. In another study done in Iran by Absalan et al showed 8.2% prevalent rate which was less compared to our study.⁷ In our study conductive hearing loss was more common (89.04%) than sensory neural (6.85%). The most cases of conductive hearing loss were chronic suppurative otitis media with prevalence rate of 5%. According WHO the leading cause of hearing loss in children is chronic otitis media. Wax, self-inflicted injury, foreign bodies in external ear, growth in external or middle ear are some other causes. When above mentioned causes are untreated or ignore it affects child's ability of hearing. Study done by Sukhthankar et al showed 24% incidence of conductive deafness which was very less compared to our study (89.04%).⁸ In another study done by department of ENT, PGIMER, Chandigarh found only 6.31% incidence of hearing loss in urban area and 32.8% in rural area.⁹ The low incidence of hearing loss in urban area as compared to rural area is due to increased awareness and education in urban area.^{10,11}

CONCLUSION

Hearing loss was significantly prevalent in age group between 8 to 14 years of age. This hearing loss could lead to delay in the development in speech and language which further leads to learning problems, social isolation and poor self esteem. By creating awareness to this problem amongst teachers and parents to detect this disability to an early stage is utmost importance before the disability reaches to serious end complications. Most common causes of hearing loss in

age group 8 to 14 years were chronic suppurative otitis media. This disease is treatable and correctable, So early detection and management of this disability by parents, teachers and paramedical staff or routine screening programs among schools prevent this disability in school going children.

REFERENCES

1. World Health Organisation web site (online); 2015 [cited 2016 march] Available from: <http://www.who.int/mediacentre/factsheets/fs300/en>.
2. Park K. Iceberg of disease. In Dr. Park.K. Park text book of community medicine 22nd edition 2014:37
3. Mishra SC, Sharma H, Bhusan V, Dayal D (1992): Preliminary study of hearing handicap in school going children. *Ind. Journl. Of Otorhinolaryngology and Head & Neck Surgery*. Vol 1, 3.
4. Tuli BS, Parmar TL, Kumar S. Conductive hearing loss – a retrospective study. *Medical Journal Armed forces India* 1988;48: 47-51
5. Sapra G. Hearing Assessment of school going children of various schools in Jaipur. *Scholars Journl. Applied Med Sci*. 2015;3:638-645
6. Nduka I. Prevention of otologic disorders in Nigeria: The case of primary school children in River State, South of Nigeria. *Middle East Journl. Of internal medicine*. 2014;7:41-46
7. Absalan A. A prevalence study of hearing loss among primary school children in the South East of Iran. *Int. J. otolaryngol*. 2013; Article id 138935
8. Sukhthankar PS, Chamyal PC, Ojha SL. Conductive hearing loss -A retrospective study. *Medical Journl. Armed Forces India* 1992;48: 47-51.
9. Internet article: <http://www.webmd.com/parenting/help-for-parents-hearing-impaired-children>
10. Psarommatis IM, Goritsa E, Douniadakis D, Tsakanikos M, Kontrogianni AD, Apostolopoulos N. Hearing loss in speech language delayed children. 2001;58:205-210
11. Conrad R. The deaf school child. London: Harper Et: Row,1979

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