

## Original Article

# IMPACT OF HEARING LOSS ON DAILY LIFE STYLE AND SCHOOLING AMONG CHILDREN BETWEEN 5 AND 15 YEARS AGE-GROUP

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## ABSTRACT

**Background:** "Hearing"- one of the five special senses with which a human is gifted. At times, due to variety of reasons, this sense is impaired. Hearing impairment of any degree has a profound effect on children. It delays development of speech, slows educational progress and leads to being stigmatized.

**Objectives:** To document the impact of hearing loss in daily life style and schooling of children between 5 and 15 years age-group.

**Materials & methods:** This was cross-sectional study done in Children between 5 and 15 years age-group with hearing loss, coming to an ENT OPD, New Civil Hospital, Surat during the period of 1<sup>st</sup> August 2011 to 31 July 2012.

**Results:** A total of 246 children were studied. Mean age of the study population was 9±3.46 years. Most common impact in life of children with hearing loss was that "they were not admitted to school by their parents" (31.3%). Among them, 84.4% had congenital deafness and 15.6% had acquired deafness. This difference was statistically significant. (p= 0.002,  $\chi^2= 8.63$ ). As per parents' perception, academic performance of the children was significantly associated with type of school (normal Vs deaf & mute school") (p< 0.001).

**Conclusion:** Most common impact was that "children being not admitted to school" and "children were lagging behind in studies". Among the congenitally deaf children, the quality of life was significantly better in those who attended these special schools (p<0.001).

**Keywords:** Hearing loss, Life style, schooling

## INTRODUCTION

"Hearing"- one of the five special senses with which a human is gifted. At times, due to variety of reasons, this sense is impaired. WHO estimates that prevalence of hearing impairment is 4% in worldwide<sup>1</sup>. In India, prevalence of hearing loss is 6.3%<sup>2</sup>. Government of India launched National Programme for Prevention and Control of Deafness (NPPCD) during years 2006-2008.

In India, Prevalence of hearing loss is 11.7% of the school going population (5-15 years)<sup>3</sup>. It is important to find the hearing impairment in school going children because at this age child has to build his vocabulary and has to learn auditory discrimination. Hearing impairment of any degree has a profound effect on children. It delays development of speech, slows educational progress and leads to being stigmatized. Hearing-impaired children who are identified early and appropriately managed have improved outcomes

in speech, language, cognitive and social development.

Proper documentation regarding quality of life in children with hearing loss is needed. New Civil Hospital is a tertiary care center in South Gujarat, where large number of patients of hearing loss comes or is referred from PHC's/CHC's from different parts of south Gujarat.

The objective in this study is to establish the impact of hearing loss in daily life style and schooling of children with hearing loss. From these factors, suitable recommendations shall be given for improve the quality of the life.

## OBJECTIVES

To document the impact of hearing loss in daily life style and schooling of children between 5 and 15 years age-group.

## MATERIALS AND METHODS

This was a cross-sectional study done in Children between 5 and 15 years age-group with hearing loss, coming to an ENT OPD, New Civil Hospital, Surat. The study was conducted during the period of 1<sup>st</sup> August 2011 to 31 July 2012. Those children whose parents/guardian refused to participate in study were excluded from study. Children included in the study visited first ENT OPD where complete ear-nose-throat examinations were done by ENT specialist. Then children were referred to audiologist if necessary for audiometry. If hearing loss detected in audiometry test, those children were included in study after necessary verbal consent of their parents/ guardians. A Pre-designed and pretested proforma was used for the interview. The clinical diagnosis and audiometry reports were noted from the case paper. In case of any doubt, immediate clarification was done from concerned doctor to avoid confusion. Pretesting was done in 20 patients. Certain questions modified, some rearranged and some added/ removed to elicit required information. Data was collected and entered in MS Office XL sheet and analysis was done by using the EPI Info software.

## RESULTS

A total of 246 children belonging to 5 to 15 years were studied. Out of them 61.8% were males and 38.2% were females. Thus, in this study the M: F ratio was 1.7:1. Mean age of the study population was  $9 \pm 3.46$  years.

In present study, 72% children had congenital permanent hearing loss, followed by 2% had acquired permanent hearing loss and 26% children had temporary hearing loss.

Majority of children (71.5%) had sensory neural hearing loss, followed by 26.4% having conductive hearing loss and 2.1% having mixed hearing loss. In congenital deafness, 98.3% children had sensory neuronal type of hearing loss. In acquired deafness, conductive hearing loss was present in 94.2% children.

In Congenital hearing loss Severe and Profound degree of hearing loss together constituted 92.7% children while in acquired hearing loss mild and moderate degree together constituted 85.5% children.

Among 246 children, 53 (21.5%) did not present with complaints of hearing loss. In these 53 children, hearing loss was detected during examination and investigation.

As per parents' perception, 57.1% congenitally deaf children and 47.8% acquirally deaf children had one or other kind of impact on their life. Remaining children with hearing loss were adjusting their life.

Most common impact in life of such children with hearing loss was that "they were not admitted to school" (31.3%). Among these children, majority had

congenital deafness (84.4%) followed by 15.6% had acquired deafness.

Second most common impact was lagging behind in the studies (24.8%). This was also more common in congenital deafness (55.7%) than acquired deafness (44.3%).

Among children with congenital deafness, 30.5% children have to be admitted in deaf and mute school because these children cannot attend main stream school. Other effects (parent's perspective) in children with congenital deafness were "not able to do any work" (4.5%), "not understand anything" (3.4%), "loneliness" (2.3%), "have to use sign language" (2.3%), "harass by other children" (1.1%) and "aggressive behavior" (1.1%).

Out of the total study population, majority (46.8%) were attending the normal school as compared to 22.0% who were admitted in deaf and mute school. A big proportion of children (31.2%) were not going to any type of school.

Among the 177 children with congenital deafness almost equal number of children was attending the normal and deaf & mute school. i.e. 32.8% and 30.5% respectively. No children with acquired deafness were admitted to a deaf & mute school.

In congenital deafness, higher number of the female children (40.3%) was not attending the school as compared to male children (34.5%). There was no significant association between gender and admission to school in congenital deafness. ( $p = 0.22$ )

However in acquired deafness higher numbers of male children (21.4%) were not attending school as compared to female (11.1%). There was no significant association between gender and admission to school in acquired deafness. ( $p = 0.13$ ).

Among the 31.3% children who were not going to school, 84.4% had congenital deafness and 15.6% had acquired deafness. This difference was statistically significant. ( $p = 0.002$ ,  $\chi^2 = 8.63$ ). Among the children having congenital deafness, 43.0% parents said that "due to deafness the children were not admitted in normal schools and they were not aware about the existence of the deaf & mute school". In 32.3% children the parents feel "the child to be too young to go to school". Other reasons were "Certificate for being deaf & mute was not available", "Refusal by the school authorities", "Distance / Cost", "Child ran away from the school due to neglect", "Mental retardation" and "Waiting for the child to hear / talk". Among the children with acquired deafness, most common reason was "recurrent episodes of illness" (58.3%) and in 41.7% children parents feels the child to be too young to go to school.

In congenitally deaf children, majority of deaf and mute school attendee children had no effect on academic performance (88.9%) as compared to those who go to normal school (48.3%). Among the children going to normal school, 48.3% are lagging behind in study,

10.3% did not understand anything, 6.9% loneliness, 5.2% not able to do any work, 3.5% harassed by other children, 3.5% become aggressive and 3.5% have to use sign language.

Problems faced by children going to deaf and mute school, 11.1% are lagging behind in study, 9.3% not able to do any work and 3.7% have to use sign language.

As per parents' perception, academic performance of the children were significantly associated with type of school (normal Vs deaf & mute school") ( $p < 0.001$ ). Among the children with congenital deafness, 51.8% children were going to normal school and 48.2% children were going to deaf and mute school. Among children going to normal school 51.7% had effect on quality of life due to their deafness while for those going to deaf & mute school only 11.1% had effect on quality of life. There was significant association between effect on quality of life and type of schooling in children with congenital deafness ( $p < 0.001$ ).

## DISCUSSIONS

In the present study, male constituted 61.8% as compared to females who constituted 38.2% of total study population. In a similar study by Ganga N et al for deaf children an overwhelming male predominance of 60.3% male against 39.7% female is seen<sup>4</sup>. According to National American Academy on an Aging Society analysis of data, 61% male against 39% female are suffering from hearing loss. Men of all ages are more likely than women to have hearing loss<sup>5</sup>. Thus, the current study and previous studies done globally show that hearing loss is more common in males. However, more community based studies should be undertaken to understand the societal dynamics involved.

In present study, 72% children had congenital permanent hearing loss, followed by 2% had acquired permanent hearing loss and 26% children had temporary hearing loss. More children with congenital hearing loss come to New Civil Hospital Surat. Reason may be that it is the only government tertiary care center in Surat district which provides the documentary disability/fitness certificate.

Among total children, 21.5% did not present with complaints of hearing loss. In these children, hearing loss was detected during examination and investigation. Out of these children, 96.2% had acquired hearing loss while only 3.8% had congenital sensory neural hearing loss. The reason could probably be that the parents were more concerned about the visible ear discharge compared to the mild hearing loss in the child which might not have affected the child's day to day activities. Thus more IEC activities are needed for parents/ caregivers and children to generate awareness about the association between hearing loss and ear discharge. Overall 1 in 5 children were not aware that they were suffering from hearing loss and the impact of this on their quality of life could be tremend-

ous. Thus regular health checkups, effective school health surveys and IEC activities are the need of the day.

The quality of life of these children was affected at various levels due to their hearing loss. Most common effect was that 31.3% children were not admitted to school and 24.8% children were lagging behind in studies. These effects were more commonly seen in children with congenital deafness. Other effects in children with congenital deafness as per the parents perception were: not able to do any work (4.5%); not understand anything (3.4%); loneliness (2.3%); have to use sign language (2.3%); harassed by other children (1.1%) and behaved aggressively (1.1%). Thus there may be a significant role of medical social workers trained in behavioral issues in helping these children with coping strategies.

The education of deaf children has long been a subject of controversy. The usual option available is mainstream education with specialist support or special class in a mainstream school. A school for the deaf having specialist philosophy, using a sign bilingual approach or an oral approach can also be the next option. Whatever the educational placement of the deaf child, it is important to ensure that child's educational and social needs are met<sup>28</sup>.

In our study, among children with congenital deafness, almost equal number of children was attending the main stream school as well as special school for deaf (32.8% and 30.5% respectively). More females (40.3%) as compared to males (34.5%) were not attending the school. In the children with acquired deafness, no children were admitted to special school for deaf. However, 17.4% among them were not admitted to any school.

In the present study, among the children who were not going to school, 84.1% were congenitally deaf and 15.6% had acquired deafness. Among the parents of congenitally deaf children, the most common reason (43.0%) for not going to school was "not aware about the existence of a deaf & mute school". "Too young to go to school" was the next common reason (32.3%). In the children with acquired deafness, the most common reason was "recurrent episodes of illness" (58.3%).

In this study, parents were asked how the choice of school has affected the quality of life of congenitally deaf children. It was found that 88.9% children studying in the special school for deaf have a better quality of life as compared to 48.3% children studying in the mainstream school as per the statements made by the parents of these children. Among the congenitally deaf children going to normal school, quality of life was affected in 51.7% due to their deafness while amongst those going to the deaf and mute school, only 11.1% stated that their quality of the life was affected due to their deafness [Figure: 9]. Thus among the congenitally deaf children, the quality of life was significantly better in those who attended these special schools

( $p < 0.001$ ). This is the desired outcome in rehabilitation strategies.

As per MohdKhairi et al study hearing loss was significantly associated poor academic performance of students in school ( $p < 0.001$ )<sup>33</sup>. Nunes et al study found that deaf students in mainstream schools report feeling socially isolated and lonely and have lower self-esteem than those students in special schools. Deaf adults who attended special schools have more positive memories of their school days than those educated in mainstream schools. Pupils who experienced both types of school environment often report a strong preference for special schools<sup>32</sup>.

## CONCLUSIONS

Most common effect was that children were not admitted to school and children were lagging behind in studies. Among the parents of congenitally deaf children, the most common reason for not going to school was "not aware about the existence of a deaf & mute school". "Too young to go to school" was the next common reason. In the children with acquired deafness, the most common reason was "recurrent episodes of illness". Among the congenitally deaf children, the quality of life was significantly better in those who attended these special schools ( $p < 0.001$ ).

## RECOMMENDATIONS

Needs of special training given to the deaf and mute children as part of National Programme for Preven-

tion and Control of Deafness to adjusting their quality of the life. There is a need of awareness generation regarding type of school available for deaf and mute children among parents. This could significantly better the quality of the life among the deaf & mute children. There is also need to establish more special schools for deaf and mute to cater the affected children.

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