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Hearing impairment and ear diseases in rural part of Haryana

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Abstract
The limitations in hearing screening methods, execution of treatment plans forms a dearth insight to identify hearing disorders at earliest in the rural parts of India. The current study was conducted to analyze the distribution of hearing impairment among the cluster of villages in Pachgaon of Gurgaon District, Haryana. A total of 738 participants participated in the survey. There were 13 questions adapted from similar kind of studies which was related to self-assessment of hearing quality and history of any kind of pathological condition. The outcome of present questionnaire-based investigation revealed that a good percentage of population in rural part of Haryana were at risk of hearing loss. The finding of the present study also showed that population in the age range of 8 to 17 years were having more prevalence of ear discharge than higher age group. Proper measure should be taken by audiologists and government for management of hearing loss among these population to enhance their quality of hearing and life.

Keywords: Haryana, Hearing Loss, India, Rural.

Introduction
Communication disorders are often being referred to those hidden disabling conditions, which usually affects the social and emotional well-being of an individual.[1-2] One such kind of communication disorder is "Hearing Impairment". There is variation in the prevalence of hearing impairment reported across several studies across the globe. This wide range of variability across the numerous studies could be due to modes of collecting information was different in those studies, for example such as definition and classification of the disorder, total number of population studied, the age of the participants included in that particular study, rural versus urban population, etc. The rural section in India forms a challenging area owing to many limitations. Literature also supports that the disabling hearing impairment is accounted more in rural areas (15.14%) than in urban areas (5.9%).[3] Apart from poverty there is high ignorance and acceptance of hearing problems in rural India. The limitations in hearing screening procedures, implementation of management plans forms a dearth insight to identify hearing disorders at earliest in the rural parts of India.

Need for the Study: Awareness of problems related to hearing and speech disorders is always less in rural areas compared to the urban areas. From the above literature it was observed that there was lack of literature regarding hearing disorders in rural part of Haryana, India. Panchgaon, is a cluster of villages in Gurgaon district of Haryana, that was selected for the survey and screening of hearing disorder in a rural area of Haryana. Hence, the current study was conducted to analyze the distribution of hearing impairment among the cluster of villages in Pachgaon of Gurgaon District, Haryana.

Aim of the Study
The aim of the study was to estimate the hearing disorder in rural area of Haryana. The specific intent of conducting the study was to identify the individuals with hearing disorder by conducting door-to-door survey and screen the suspected individuals in order to understand the nature and characteristic of the hearing impairment in that particular region.

Materials and Method
The Department of Audiology and Speech Language Pathology, Amity Medical School, Amity University, Haryana conducted a door to door survey as a part of the annual activity in Panchgaon (a village of Gurgaon district, Haryana). A total of 738 participants participated in the survey, which includes 212 participants in the age range of 8 to 17 years, 226 participants in the age range of 18 to 35 years, 160 participants in the age range of 36 to 55 years and 140 participants above 56 years. All the participants from the villages were selected randomly based on their willingness to participate in the study. All the participants were explained in detail about the purpose of the study and oral consent were taken from all participants. Most of them were belonging from low-to-medium socio-economic status and had education up to primary level. There were 13 questions adapted from similar kind of studies which was related to self-assessment of hearing quality and history of any kind of pathological condition. The questions were 'hear but don't always understand what others are saying', 'trouble in hearing when people speak softly', 'history/active ear discharge', 'always listen music at maximum volume', 'talk over phone for more than 3 hours a day', 'trouble in understanding someone if they are speaking in a different room', 'trouble in hearing when they are not facing me', 'people tell to turn down

the TV', 'hard to hear in group setting', 'difficulty in understanding words while watching play or movie', 'trouble in hearing over telephone', 'trouble in hearing in a restaurant', 'trouble in making out words in a song'. These questionnaires were translated in to Hindi and reverse translation was carried out make sure that the meaning of the content remains the same. These translated questions in Hindi were proofread by a native speaker of Hindi as well as having knowledge of English too. The survey was carried out for all the individuals irrespective of age and the gender residing in that village. These questions were closed-set task in 3-point rating scale i.e. no, sometime and yes. All the participants were instructed to answer these questions in writing/verbally while selecting the most appropriate single answer under the close supervision of 2 experienced audiologists. The data collected was then analyzed using SPSS (version 17, IBM Corporation, Bengaluru, India), which included descriptive statistics, percentages and proportions of the subjects included in the study, with respect to a particular response. Pearson's correlation test was done to assess the correlation between the responses of different questions within the group.

Results and Discussion

A total of 738 participants participated in the survey. In total of 738 participants, 328 participants (44%) were at risk of hearing loss, whereas, 104 participants (14%) were having ear discharge. Among the 212 participants in the age range of 8 to 17 years, 28% found to be at risk of hearing loss according to questions related to self-assessment of hearing impairment and 21% were having ear discharge. Among 226 participants in the age range of 18 to 35 years, 45% were at risk of hearing loss and only 7% were suffering from ear discharge. There were 160 participants in the age range of 36 to 55 years, 43% were found to be at risk of hearing loss, whereas, 16% were having ear discharge. Among 140 participants above 56 years, 70% of the participants were at risk of hearing loss and only 10% of the participants were having active ear discharge. Pearson's correlation test showed strong positive correlation between outcome of different questions i.e. 'hear but don't always understand what others are saying', 'trouble in hearing when people speak softly'. Similarly, strong positive correlation seen between different questions i.e. 'talk over phone for more than 3 hours a day', 'trouble in understanding someone if they are speaking in a different room', 'trouble in hearing when they are not facing me'. Findings of the present study is in consonance with the previous literature.[4]

Summary and Conclusion

The finding of the present study revealed that a good percentage of population in rural part of Haryana were at risk of hearing loss. The outcome of the current study also showed that population in the age range of 8 to 17 years were having more prevalence of ear discharge than higher age group. The older adults (>56 years) were at higher risk of hearing impairment compared to lower age groups. The present study highlights the importance of hearing screening in rural part of Haryana and there is urgent need of audiological and otological evaluation among these populations as prevention is better than cure. Proper measure should be taken by audiologists and government for management of hearing loss among these population to enhance their quality of hearing and life.

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