

NAGUVANAHALLI SCREENING—A PILOT PROJECT

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This is a report on the collaborative project with the Junior Jaycees of Mysore to screen the school going children for speech and hearing problems in a nearby village. This village, was selected because of the following reasons.

1. Absence of any medical facilities. In this village with a population of 5,000 there is no qualified doctor. Hence it was thought that screening programme would disclose a large number of school going children with speech and hearing problems. Further, it would educate the inhabitants about speech and hearing problems.

2. Proximity of the village to Mysore City—nine miles. Because of this, transport problems of personnel and instruments were considerably reduced and it was thought that the referred cases could come to the Institute for further tests more easily.

3. Active co-operation given by the Chairman of the village panchayat and the Junior Jaycees of Mysore. They made arrangements for getting rooms in the high school, and for free power supply for the use of the audiometers.

In addition to screening the children for speech and hearing disorders, an intelligence test was also administered. 410 school-going children in the age group of 5-16, distributed from primary level to secondary level of education were tested for speech and hearing problems.

Hearing Evaluation: Method

Equipment: The screening was done using two portable audiometers—Beltone 12-D (ISO 1964). Audiometers were checked for proper functioning before each screening and biological calibration was done periodically which was substituted by electroacoustic calibration on acquiring the Bruel and Kjaer calibration equipment.

Test environment: The testing was done in two separate rooms in the high school building. The rooms were reasonably quiet as the school is situated in a relatively calm locality of the village. The children awaiting their turn were seated outside in the verandah while the testing was in progress. Psychological and Speech Evaluation were carried out in a separate room.

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Ear examination: Examination of the external ear was conducted with unaided eyes. The students were asked to give information regarding past ear troubles, if any.

The frequencies tested were 1000 HZ, 2000 HZ, 4000 HZ, and 500 HZ. The presentation level at frequencies 1000 HZ, 2000 HZ, and 4000 HZ, were 20 dB and 30 dB, for 500 HZ. These levels were validated in the Institute on 50 children with normal E.N.T. and hearing findings, (Nikam '70). The frequencies were presented in the order given above to each subject.

Children in the age group of 5-7 years were conditioned to put coloured chips or marble in a tin-box every time the tone was heard. Co-operation from these children was enlisted using positive reinforcers—chocolates. For older group standard audiometric procedure was used.

The test was considered positive (i.e., the examinee has failed) if there was no response at the given level in two or more frequencies in the same ear or in the same frequency in both the ears. However, if the test was positive only for 2000 HZ, or 4000 HZ, in one ear the other ear being negative, then the test was extended to frequencies 6000 HZ, and 8000 HZ. (presentation level as in 2000 HZ, and 4000 HZ). This additional precaution was taken to catch early progressive sensory-neural hearing loss cases. The students obtaining positive results on the test were referred to the Institute for a thorough check-up.

Results

18.9 per cent of the examinees had hearing problem. Tinnitus and/or discharge and/or hearing loss. Breakdown for boys and girls were 19.3 per cent and 18.19 per cent respectively. The percentage of false positives could not be determined because most of the referred examinees did not come to the Institute for further tests.

Speech Evaluation: Method

Initially the oral and nasal structures were examined for any gross deviations. Two Kannada passages selected from a popular Kannada magazine were used as test materials. These passages varied in terms of difficulty of language structure. The more difficult of which was used with the high school students and the less difficult with the middle school students. The voice quality, articulation, rhythm were examined for deviations while the passages were being read. Each examinee was asked as to whether he was previously a stutterer, and if the reply was in the affirmative, he was asked to describe the now-non-existent problem. He also filled up a separate form prepared for such spontaneous recovery of stuttering including the description of the problem, the tendency for inheritance, the nature and manner of recovery and the level of recovery.

The percentage of Students with speech problem is considerably low as Compared With the hearing problem. It is 3.9 per cent, the breakdown for boys and girls was 53 per cent: and 1.3 per cent respectively. Out of 14 boys with speech, problem 2 had articulation problem, 5 had voice problem and 7 had stuttering. Out of two girls one had articulation problem and the other suspected of voice problem. There were 4 boys with spontaneous recovery from stuttering.

Intelligence Testing: Method

Two Seguin-form boards were used for this purpose. Each trial was timed by an Omega Stop Watch. Each student performed the test thrice, prior to which standardized instructions were given. At lower age groups children were rewarded for their performance with chocolates.

Results

The mean I.Q. of the school going children was found to be 82.90 with a S.D. of 17.45. This was calculated on 300 students, as, out of 417 students 30 students were above 16 years and were not tested, 37 young children could not perform after single demonstration, 50 children did not get tested as they were very irregular to school, more so for screening (as it was done only on Sundays). Normative data used was derived in Dasara exhibition screening (Bharath **Raj** 1971).

Before starting this programme on 6-9-70, a lecture was given by Mr N. S. Viswanath to the High School students and staff regarding speech and hearing mechanisms and their disorders, followed by a discussion. In the month of December Mr M. N. Vyasa Murthy, Lecturer in Audiology, addressed a gathering of teachers from seven villages around Naguvanahalli on Speech and Hearing problems with special reference to education.

Dr Rathna, Professor of Speech Pathology, gave a lecture on working of the hearing mechanisms to the villagers and how it can be disrupted. He also clarified some of the doubts which the villagers expressed about hearing loss, 'dumbness' and stuttering. Pamphlets on Speech and Hearing problems and on nature or service available in the Institute, were distributed.

Conclusion

Following observations on this project are pertinent:

1. The follow-up of the positives was not satisfactory. Those who did come to the Institute were unable to stay on financial grounds or due to the inevitable delay which is involved in a thorough check-up. Out of 95 positives referred to the clinic 20 reported to the clinic. Out of 20, 5 were false positives, 10 were

tested incompletely and 5 were true positives, breakdown, one had bilateral conductive hearing loss; two had severe unilateral conductive hearing loss in left ear, one had mixed hearing loss and one had mild unilateral sensori-neural hearing loss.

Thus it is necessary to arrange to bring all the referral cases from any village soon after the day's screening. An effort should also be made to give a thorough check-up in the minimum possible time.

2. To establish better criteria, it is necessary to randomly select a group of students with negative results and bring them for threshold test in the Institute. This will be useful from two points of view.

(a) We may be able to detect hearing losses in students who apparently showed no hearing loss in screening.

(b) A comparison of the percentage of false negatives with the percentage of false positives will throw light on the adequacy (or inadequacy) of our criteria.

3. Screening of non-school-going children in the village is desirable.

4. Publicity work should be conducted more vigorously including screening of films on Speech and Hearing problems—their prevention and rehabilitation.

5. Priority should be given to such projects as expenditure involved is small. (This project was completed at an expenditure of Rs 58 only).

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