

Speech and Hearing Science in Ancient India : A Survey of Sanskrit Literature *

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In the context of an awareness of a lack of coordinated information and of a renewed interest in Ayurveda and Sanskrit literature the present study was undertaken. The intention of this study was to compile the available information in the Sanskrit literature with respect to the field of Speech and Hearing.

Some of the findings go along with the lines of modern thinking and some do not. It has been seen that the Sanskrit literature uses efficiency, intelligibility, redundancy, intensity, frequency, cultural and aesthetic values for the evaluation of speech. They have classified speech sounds according to the place of articulation, pitch, quality, primary and secondary efforts. The production of consonants are attributed to venal plexus in different parts of the mouth.

Intonation is related to the sentence structure and different types of intonation have been described for different situations.

Pause is said to attribute to the clarity of the meaning and it is observed to depend upon the breath and meaning. A direct relationship between the duration and of pause and length of the syllable is assumed.

It is very interesting to note that the propagation of the sound waves with

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examples of the "Big Wave and the Small Wave" and the "Budding of the Kadamba Filaments" is explained very well.

Speech disorders like Aphonia, Hoarse Voice, Nasal Voice, Stuttering (Dysarthria), loss of speech are mentioned. In the general classification of diseases Speech and Hearing Disorders come under the category of "Neurological Disorders". Some of the Speech Disorders are recognized to be congenital while only a few are considered as functional. The causes of Speech Disorders are rather conditions in which speech defect is associated.

Pain in the ear, discharge, wax, abscess, polyps, tumors, swellings, etc., are dealt with as the ear disorders/diseases. Most of the diseases are said to be acquired except atresia which is thought as congenital.

It can also be noted that attention was paid to the noise induced hearing loss since it is mentioned that exposure to loud noises causes hearing loss. But no further preventive or curative treatment is advised for this.

In general, the whole system of the medicine is based on the "Theory of Three Humours". All the diseases are said to arise because of the disturbed actions of these three humours.

Similarly treatment is also based on the same theory, in that, all the treatment aims at bringing back the actions of the humours to their original state.

The treatment of the Speech and Hearing Disorders are mainly dealt with under two headings, namely, medical and surgical. In the medical lines of treatment curatives are also suggested and surgery is advised only in cases of cleft lip and injured ears. No reference is available regarding the surgery of cleft palate or of the ear. Tongue exercises are suggested as preventive measures.

It can be observed that the medical treatment of atresia has been dealt with, which has not been mentioned anywhere else. But unless all these drugs are verified experimentally no conclusions can be drawn regarding their use.

This survey of literature has brought out so many interesting details that :

- (1) Using references on other materials more comprehensive studies need to be done.
- (2) Attempts at closer study can be done so that exact translations are established. Explanations of several terms which do not have equivalents in English are essential. This is beyond the scope of time available for this study.
- (3) Clinical trials of suggested therapy and treatment procedures can be done for experimental verification.
- (4) Experimental analysis for some of the (reference) subjects like "Pre-effort and Post-effort with reference to voicing" could be done. These terms may refer to same concepts same as do the voicing studies made by Ladefoged.
- (5) Greater awareness of the same information must be built up in the students of Speech and Hearing.