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PREVALENCE OF HEARING IMPAIRMENTS IN DIFFERENT AGE GROUPS OF ELURU, WEST GODAVARI DISTRICT, A.P.

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ABSTRACT
Current human studies are indicating different hearing problems are common among general public. Hearing problems are projected to become among the top ten disabilities according to the WHO in the near future. Here we describe the prevalence common hearing problems in different age groups, causes, types and usage of hearing aids. The objectives of the present study demonstrates the disorders of ear, to recognize the magnitude of the problem, to create awareness among the people about the problem, and to encourage the sufferers to use hearing aids.

KEYWORDS: Hearing problems, Hearing aids.

INTRODUCTION
The human body is a marvel of nature and each and every large or tiny organ has a specific and important function. There are five senses in the human body system that help understand and interpret its surroundings. These five senses are normally- sense of touch, sense of smell, sense of taste, The ability to see and the sense of hearing. These senses enable us to be lead a normal, healthy life. Through hearing ability, we can communicate with others and enjoy so many things. The ear is not only the organ of hearing, but it plays an important role in maintaining balance of the body. There are several disorders which disturb hearing functions including ear infections, migraine associated vertigo, tinnitus and so on. Of all these, the most common disorder is hearing loss. In a survey it was found that more than 30 million Americans are suffering from hearing loss and only about 6 million are wearing hearing aids. National council on the aging survey of seniors found that untreated hearing loss has serious emotional and social consequences.

REVIEW OF LITERATURE
Outer Ear is divided into the pinna and the external auditory meatus. The pinna, also known as the auricle is the external ear part that is located and seen on each side of our head. It is made up of cartilage and soft tissue. This helps in maintaining a particular ear shape and also remains pliable. The pinna is like a funnel that collects the sound vibration from around us and funnels them towards the external auditory meatus. The external auditory meatus is also called as the ear cannal. The ear canal helps understand and determine the source and direction of the sound. It is only ¼ inch in diameter, extends from the pinna to the tympanic membrane. The tympanic membrane is commonly called as the eardrum. The middle ear is the structure that begins at the end of the tympanic membarane. There are three tiny bones known as the ossicles that make up the middle ear. These bones connect the eardrum to the innerear. Sound waves funneled in through the pinna, hit the eardrum. The three tiny bones forming the osscles are malleus, incus and stapes. The malleus also known as the hammer is connected to the eardrum on one side and the incus, known as the anvil on the other side. The anvil is connected to the third bone stapes, also called the stirrup. The sound waves converted into mechanical energy are transferred through this ossicular chain. There is an in and out movement at the stirrup base known as the stapes footplate, that matches the incoming sound waves. The beginning of the inner ear is marked by the oval window that fits in the stapes footplate. The middle ear is present in the mastoid section of the temporal bone. The inner ear houses the sensory organs that help in hearing and maintaining balance. The part of human ear involved in the function of hearing is the cochlea. The bony structure that is shaped like a snail and filled with endolymph and perilymph fluid is called the cochlea. The sensory receptor called the organ of corti is present inside the cochela. It has hair cells and nerve receptors required for hearing. The middle ear movement pushes the mechanical energy in the oval window inside the cochela. The tiny hair cells are stimulated due to the force that moves the fluids inside the cochela. Pitches or

the specific sound frequencies stimulate specific individual hair cells in the inner ear. Thus, certain frequencies are responded by certain hair cells. The hair cells translate signals into nerve impulses. The cochelar portion of the VIII cranial nerve, the acoustic nerve, transmit the nerve impulses to the brain.

A human ear can detect sounds that are in the range of frequency between 16 hertz to 16384 hertz. The following table will give you an idea of the various sound decibels that help human beings perceive different sounds.

Decibels	Perception of sound
0dB	The lowest sound that can be heard by a healthy ear of an 18 year old
20dB	Very soft whisper
45dB	Softly spoken voice
60dB	An average voice spoken
70dB	A loud shout
80dB	A loud motorbike that is driven on a narrow street
90dB	Lawn mover
100-120dB	Heavy metal rock concert
120-140dB	A jet engine with in a range of 250 yards

Different ear problems

Hearing problems are the most common sensory deficit in human populations, with hearing loss alone affecting more than 250 million people worldwide.[4,3] Normal functioning of the ear depends upon a proper working of all the parts of the auditory pathway. Since ear is a very delicate organ, it is damaged by various reasons and loses its normal functioning. There are a number of problems associated with external, middle and inner ear, including ear infections, hearing loss, meniere's desease, acoustic, neuroma, migraine associated vertigo, tinnitus, and so on. Ear infections are mainly caused by bacterial fungal or viral infections and can affect external, middle or inner ear. They cause symptoms like ear pain, fever, ear blockage, temporary hearing loss and dizziness.

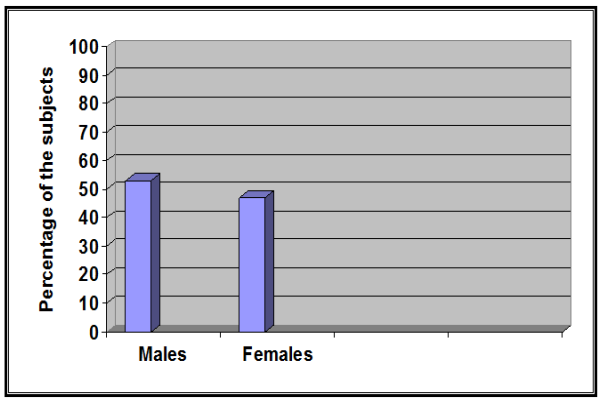
MATERIALS AND METHODS

A survey method was followed and the data was collected from the patients of Kamala ENT hospital, Eluru.

RESULTS

Table 1: Percentage of samples of males and females.

S.No	Sex	Percentage of the subjects
1	Males	53
2	Females	47



Graph: 1.

Table 2: Percentage of different age groups.

S.No	Age groups	Percentage of the samples
1	10-20	17
2	21-30	17
3	31-40	26
4	41-50	20
5	51-60	10
6	61-70	10

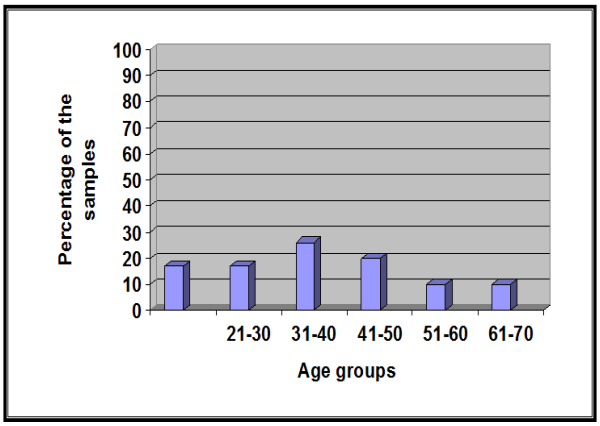


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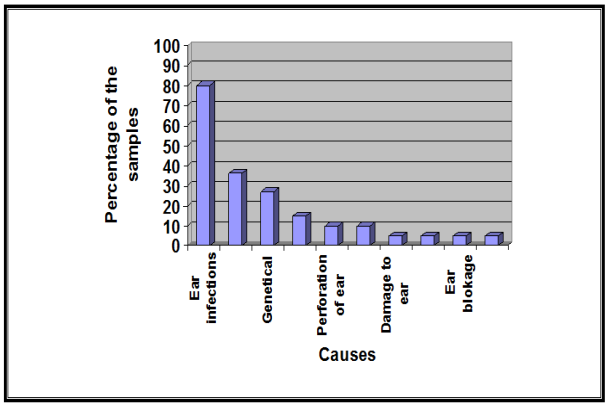
Table 3: Causes for Hearing problems [Hearing loss].

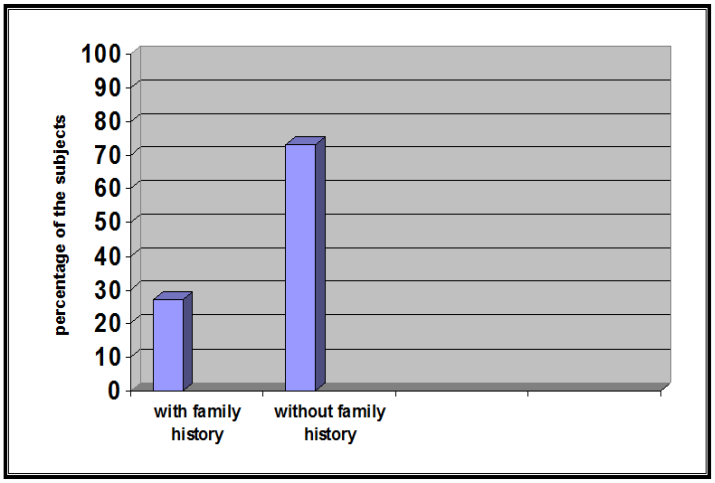
S.No	Causes	Percentage of the subjects
1	Ear infections	80
2	Aging	36
3	Genetical	27
4	Damage to auditory nerve	15
5	Perforation of ear drum	10
6	Side effects of drugs	10
7	Damage to ear	5
8	Premature birth	5
9	Ear blockage	5
10	Skull injury	5



Graph. 3.

Table 4: Familial History.

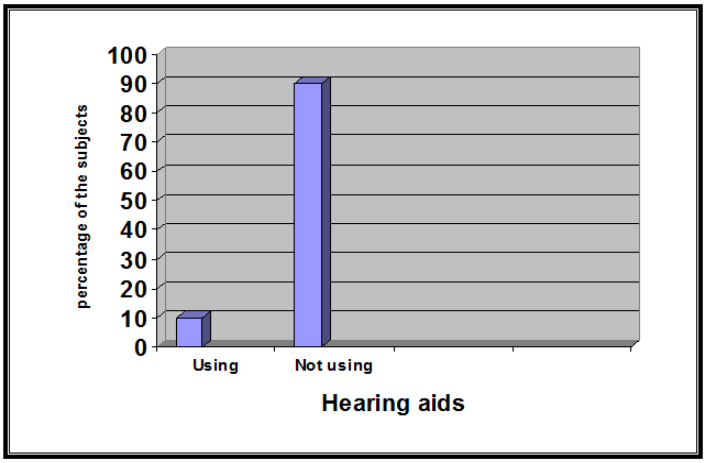
S.No	With family history	Without family history
1	27	73



Graph. 4.

Table. 5: Usage of Hearing Aids.

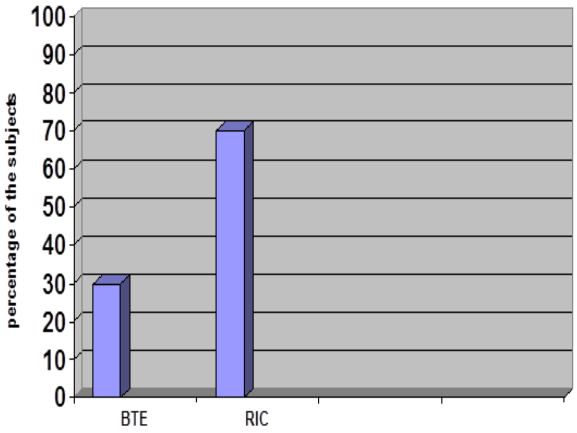
S.No	Percentage of the subjects using hearing aids	Percentage of the subjects not using hearing aids
1	10	90



Graph: 5.

Table 6: Types of hearing aids used.

S.No	Types of hearing aids	Percentage of the subjects
1	BTE-Behind the ear aids	30
2	RIC-Receiver in the canal ear aids	70



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DISCUSSION

Table.1 shows that in the study 53% are males and 47% are females. 10-20 age groups are 17%, 21-30 age groups are 17%, 31-40 age groups are 26%, 41-50 age groups are 20%, 51-60 age groups are 10% and 61-70 age groups are 10% oserved in table.2. table. 3 observed that there are many causes of hearing problems -80% of the subjects are suffering from hear infections, 36% of the subjects are aged people, 27% of are genetical, 15% of the subjects suffered from damage to auditory nerve,10% of the subjects suffered from preparation of ear drum, 10% of the cases suffered from side effects of drugs, 5% of the cases were premature babies, 5% of the cases suffered from ear blockage, 5% of the suffered from skull injury. Table.4 shows that in the study 27% of the subjects are with family history and 73% are without family history. Table – 5 observed that only 10% of the subjects are using hearing aids and 90% of the subjects are not using hearing aids. In table – 6 observed that out of 10% of the subjects 30% are using BTE – Behind the ear aids and 70% are using RIC – Receiver in the canal hearing aid. Hearing aids may protect against cognitive impairment and disability, improving quality of life of aged people (2).

CONCLUSION

Ear is a very sensitive organ and needs to be protected from damage. Hearing problems effect not only health but also the life style. Our ear helps us understand the words of people around us, enjoy music hear our children's laugh and even help us hearing ourselves. Thus make sure stay away from sounds that damage hearing and also do not make loud sounds that may damage someone else's sense of hearing. The examination of the role of age, sex, socio-economic group, and noise exposure in population hearing impairment is important (1). "If eyes are the windows to the soul, ears are doors to the mind" without ears, you will plunge into the dark world of silence.

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