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Study on Health Impacts of Ear and Headphones among Students Lives in Chandigarh

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Abstract: ***The human ear can be damaged by excessive noise levels. Noise can arise from a variety of occupational/recreational sources causing tinnitus, hearing loss and hyperacusis. The use of different types of earphones for entertainment has become very common/fashionable among our youths. objective: -To assess the prevalence of use of earphones for entertainment and the health impacts of earphones and headphones on student lives in Chandigarh. methodology: A Cross-sectional Study was conducted through random sampling during January-February 2018 in Students lives in Chandigarh. 100 students from Chandigarh who are using earphones or headphones from past five years or more were included in the study. DATA collection Methods and analysis: The pre-structured questionnaire with multiple choice questions were used to collect data from the participants after taking their consent. An analysis was done by using Excel and SPSS software.***
Keywords: Earphones, Headphones, Hyperacusis, Tinnitus, Hearing loss

I. INTRODUCTION

The WHO definition of "hearing impairment" refers to both complete and partial loss of ability to hear. Statistics show - 360 million people in the world suffer from hearing loss. This constitutes a substantial 5.3% of the world's population. In India, prevalence and incidence of hearing impairment are substantially high. This burden of deafness around the world and in India is largely preventable and avoidable. The prevalence of deafness in South-East Asia ranges from 4.6% to 8.8%. The National Sample Survey 58th round (2002) surveyed disability in Indian households and found that hearing disability was the 2nd most common cause of disability and topmost cause of the sensory deficit. The major causes of hearing loss and ear diseases in India have been listed by the WHO survey. Ear wax (15.9%) was the most common cause of reversible hearing loss. Noninfectious causes such as aging and presbycusis are the next most common causes of auditory impairment in India (10.3%). Middle ear infections such as chronic suppurative otitis media (5.2%) and serous otitis media (3%) are other leading causes of hearing loss. The other causes include dry perforation of the tympanic membrane (0.5%) and bilateral genetic and congenital deafness (0.2%). WHO estimates 360 million individuals in the world have disabling hearing loss, of which 91% are adults and only 9% are children. Disabling hearing loss is >40 dB hearing loss in the better ear of a person above the age of 15 years and >30 dB in better ear below the age of 15 years. The noise-induced hearing loss is 100% preventable, but once the patient had it, it is for a lifetime. With the increasing lifespan, we expect the prevalence of deafness as high as 40% above the age of 75 years. Hence, we have to make all the efforts. Further, use of headphones and mobile may further add to the magnitude of the problem. Hearing loss is one of the most common chronic disabling conditions. Loud noise is a major risk factor for hearing loss, and students exposed to loud noises by using earphones and headphones have been established as a high-risk group. With the recent increasing supply of smartphones and MP3 players, the usage of personal sound equipment (earphone) tends to also increase, and this increment causes the population to be exposed to non-occupational noise. Long-term usage of earphone could induce hearing loss, and a few studies have suggested that hearing loss could occur from earphone overuse, regardless of occupational noise exposure Listening to loud music for long periods of time especially with earphones may predispose the person not only to hearing loss but also to ear infection, tinnitus, and dizziness. There is need to study among young adults who are important in planning for prevention and education about using patterns. The noise-induced hearing loss is a preventable disability, and it can be caused by recreational noise and leisure activities such as listening to music player devices. NIHL is increasing among youth, who are consciously expose themselves to loud noise or music for long periods of time and they are unaware of its consequences. Lee et al. showed that continuous use of earphones for three hours led to about 10 decibels (dB) increase in the hearing threshold.

II. OBJECTIVE

To assess the prevalence of use of earphones or headphones for entertainment and the health impacts of ear and headphones on students lives in Chandigarh.

III.MATERIAL AND METHODS

Study design and sampling technique: A Cross-sectional Study was conducted through random sampling.
Study units: Students who are using earphones or headphones from past five years or more from Chandigarh.
Sample size: Total 100 students are included in the study.
Study area: Chandigarh.
Data collection methods and analysis: The pre-structured questionnaire with multiple choice questions was used to collect data from the participants after taking their consent. An analysis was done by using Excel and SPSS software.

IV. RESULTS

Composition of Respondents

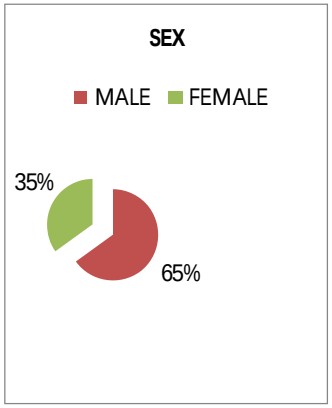

Figure 1

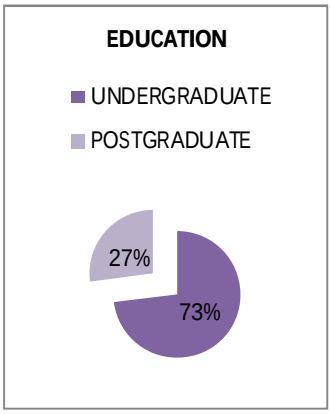

Figure 2

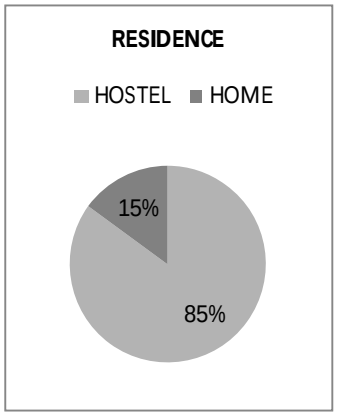

Figure 3

Figure 1 shows gender distribution of respondents. Figure 2 shows respondents graduation details. Figure 3 shows respondents residence details.

Table 1 shows a percentage of respondents using audio devices with their types, the earphone is used by a majority of respondents

Audio device type	Percentage of respondents
Headphone	8%
Earphone	67%
Bluetooth device	7%
All	18%

Table 1

Table 2 shows types of earphone or headphone which are generally used by respondents

Type of earphone and headphone	Percentage of respondents
Supra auricular	14%
Circum auricular	14%
Earbud type	25%
Ear canal type	35%
All	12%

Table 2

Table 3 shows time duration after which respondents are taking a break while using earphone or headphone.

Time duration after which respondents are taking a break	Percentage of respondents
After 1 hour	43%
After 2 hour	24%
After 3 hour	18%
No break	15%

Table 3

Figure 4 a graph shows a level of volume which is maintained by respondents while playing music on their devices with earphones or headphones.

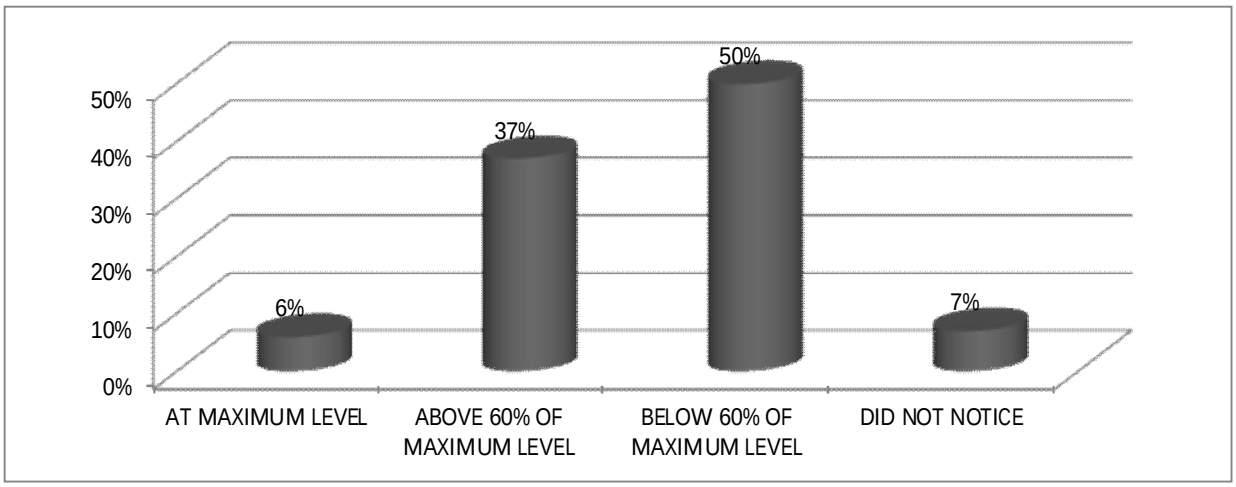

Figure 4

Table 4 shows daily hours spent by respondents on devices with earphone or headphone

Daily hours spent on devices with earphone or headphone	Percentage of respondents
less than 2 hours	21%
2-4 hours	35%
4-6 hours	27%
More than 6 hours	17%

Table 4

Figure 5 shows health problems associated with improper use of earphone or headphone.

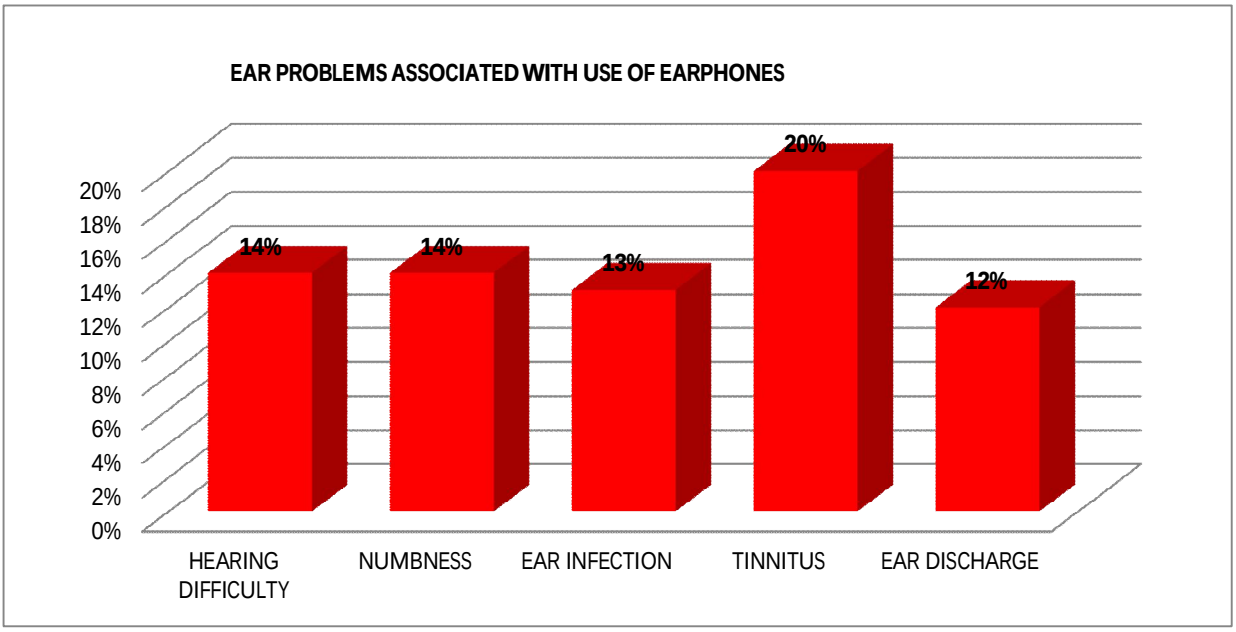

Figure5

Figure 6 shows some bad habits associated with respondents with a usage of earphones.

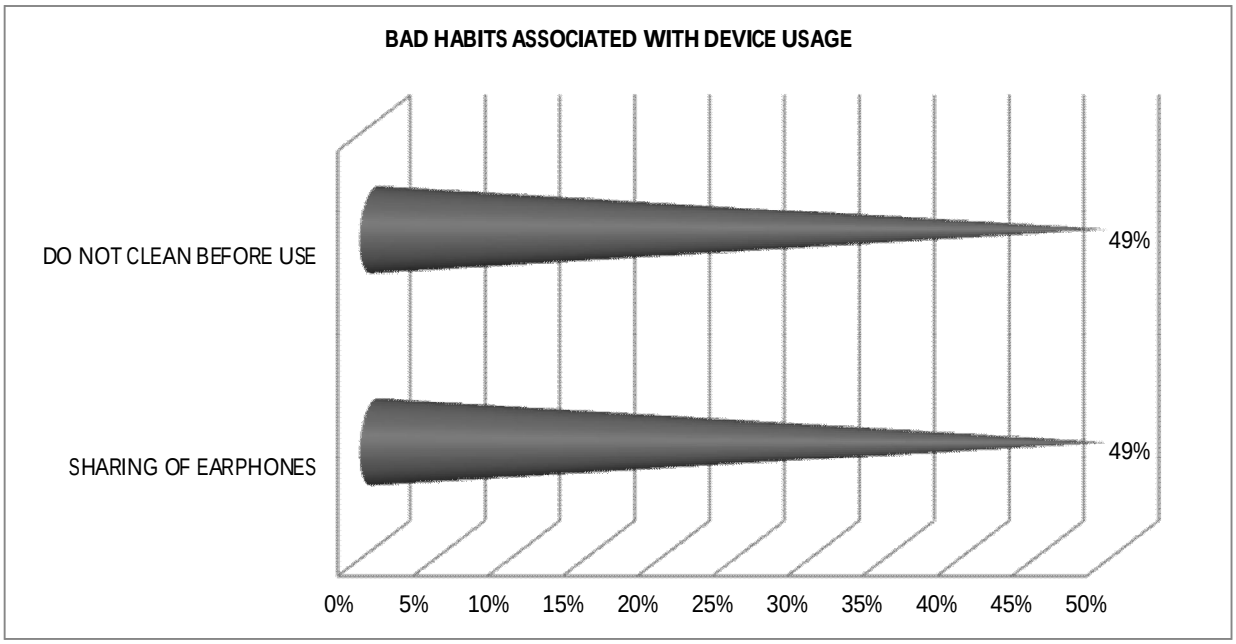

Figure 6

IV. CONCLUSIONS

About Half of students who were participated in the study are unaware of sharing of unclean earphones. Half of the respondents are not aware of the proper volume level with a usage of earphone or headphone that above 60 decibels can cause serious health impacts. Only 43% students are taking a break after usage of standard one-hour duration while 15% of them did not take a break even after 3 hours or more. About 10-15% are suffering from earphone/ headphone related health problems

Recommendations from the study are to create awareness about proper usage of earphone/headphone in students lives in Chandigarh

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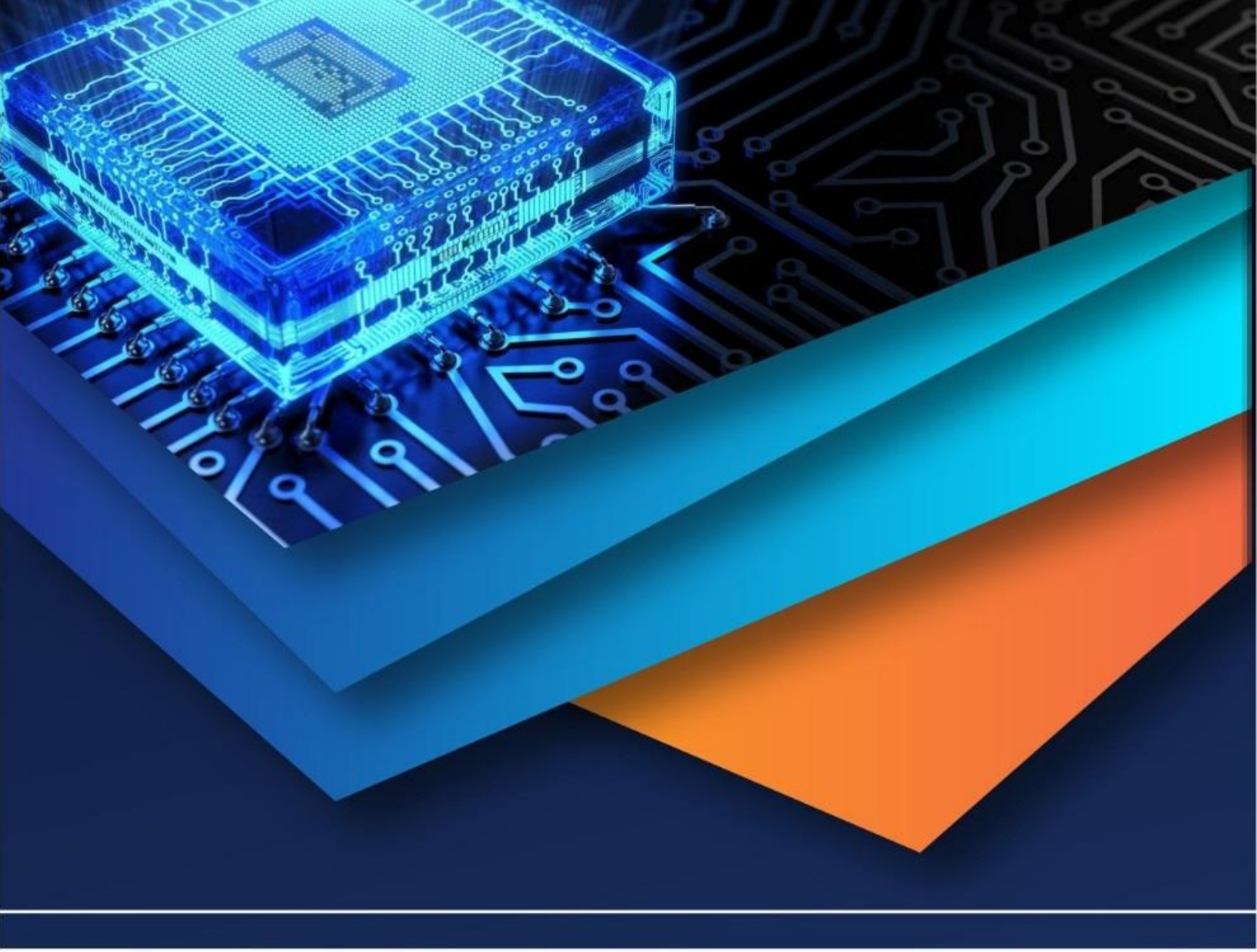

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