

Personal Listening Devices and Recreational Noise Induced Hearing Loss: The Talking Point

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Introduction

Use of Personal Listening Devices and Recreational Noise Induced Hearing Loss is being increasingly reported in the recent past. These device-users often request advice from ENT and audiology fraternity regarding their risks.

Aim

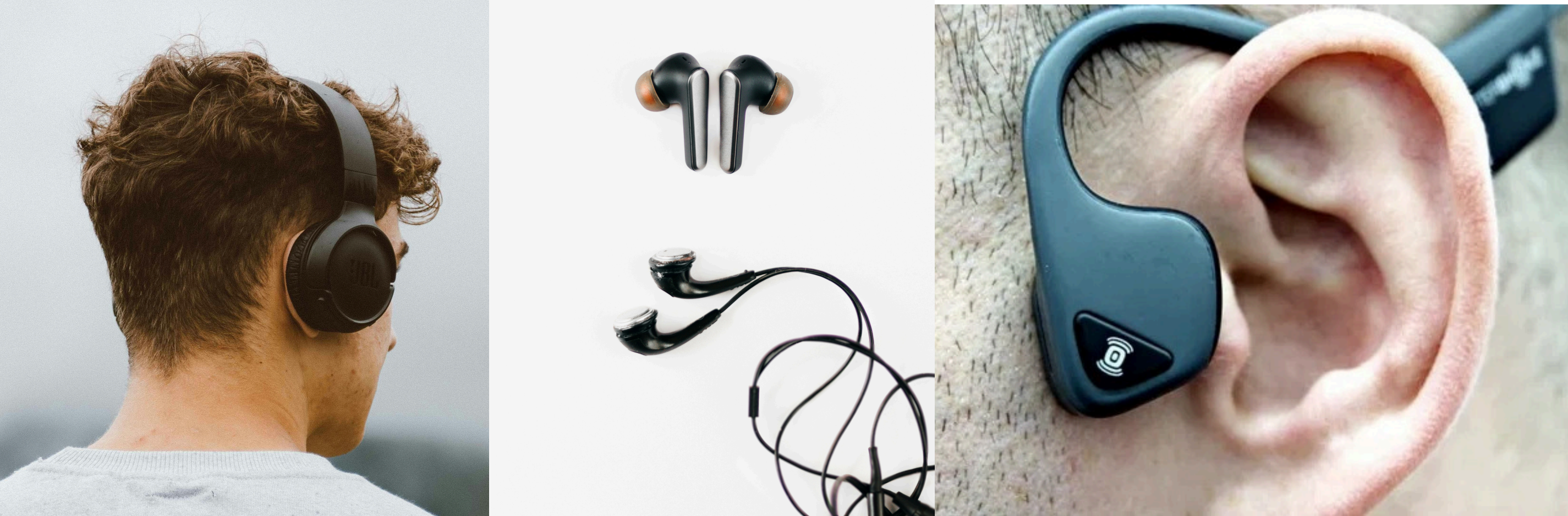
Equip the attending clinician to communicate with listening device-users, regarding potential risks and advise on safe listening practices.

Method

Recent literature review of prospective cross-sectional studies on listening risks and habits including knowledge, attitude and practice among personal listening devices-users.

Discussion

Personal listening devices (PLDs) such as headphones, earbuds (wired/wireless), and bone conduction headphones have become integral to daily life, especially among younger populations.



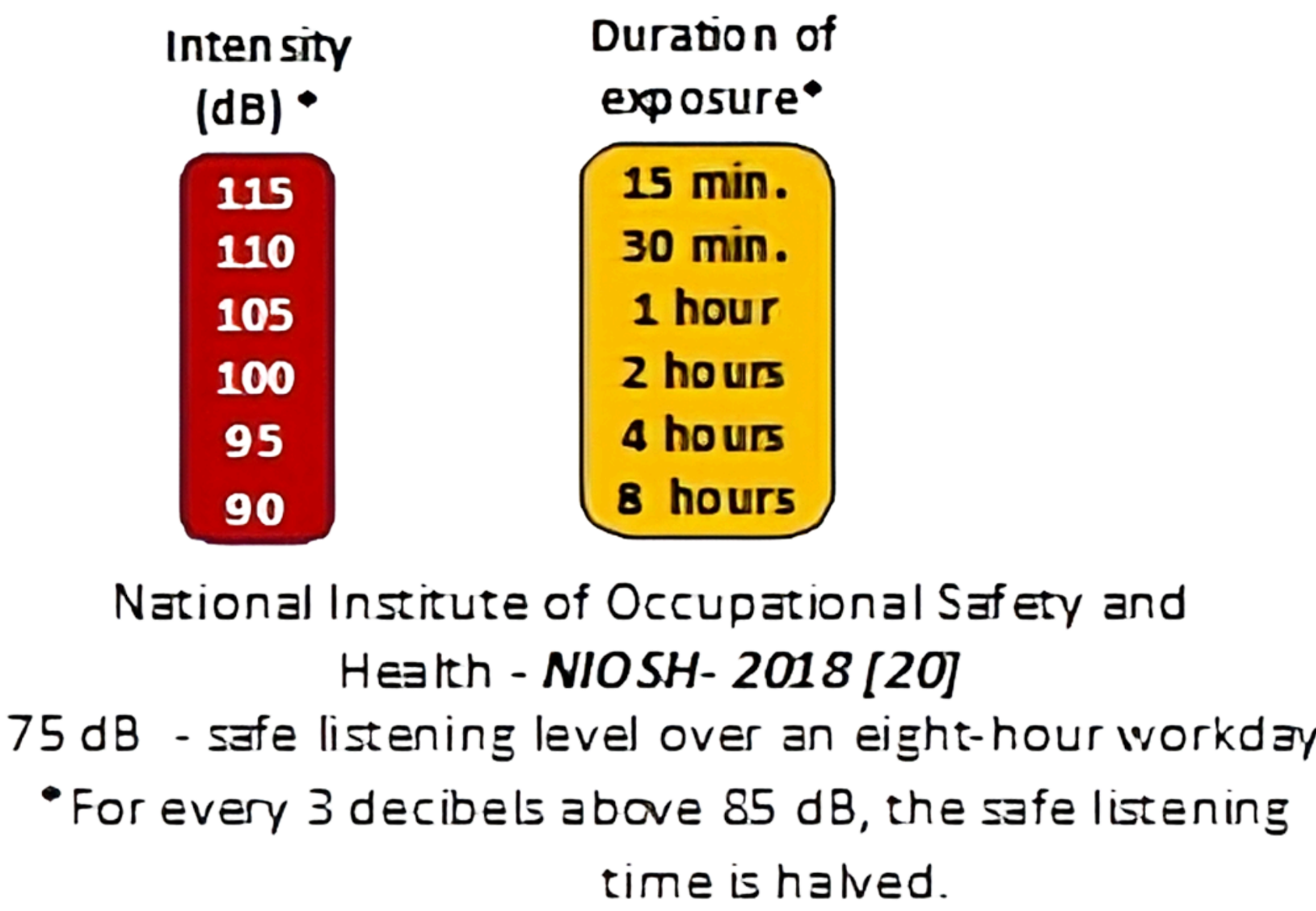
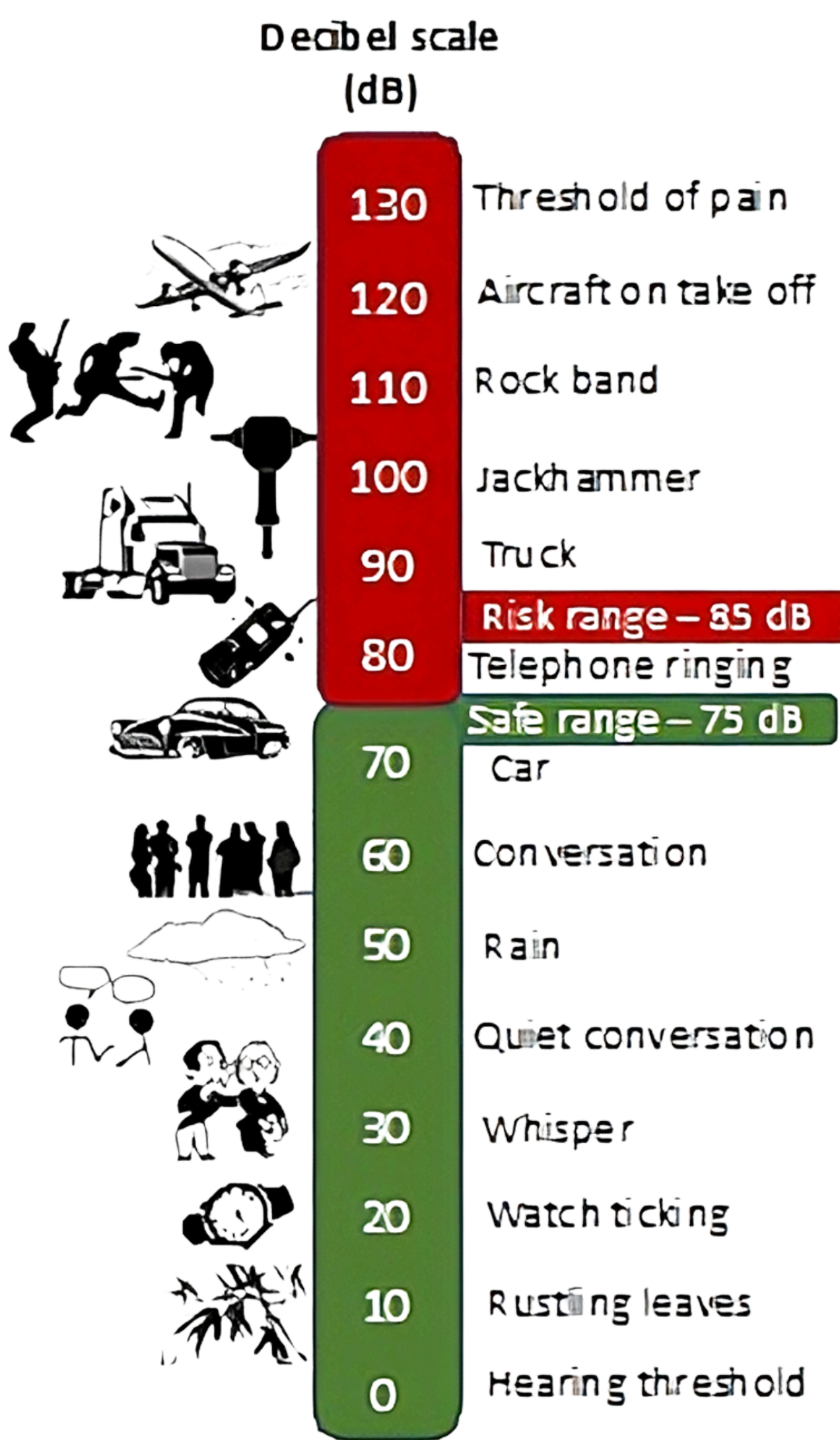
Most devices do not display loudness in decibels but rather as volume percentages (e.g., 60–100%). According to WHO, 60% volume corresponds to 75–80 dB, the safe upper limit. However, this default safety setting may not be activated in all regions, such as in devices sold in the U.S.

An informal but practical warning sign of excessive volume is if others nearby can hear the sound from the user's device. Adolescents often listen at levels between 90–110 dB, well above safe thresholds.

Concerns about Bluetooth radiation remain largely unsubstantiated in the short term. However, caution is advised for children, particularly with Active Noise Cancellation (ANC) features, as these may affect the development of auditory processing in noisy environments.

Early signs of hearing loss may be subtle, including ringing or buzzing (tinnitus), difficulty following conversations or withdrawal from social settings. NIHL may be compounded by other risk factors such as aging, high blood pressure, diabetes, certain infections (e.g., measles, mumps), or ototoxic medications like gentamicin or streptomycin.

A major concern with PLDs is Noise-Induced Hearing Loss (NIHL). The inner ear houses delicate hair cells responsible for hearing. Exposure to sounds above 85 dB - equivalent to a blender can damage these cells, especially with prolonged exposure. Notably, safe listening at 75 dB is limited to 8 hours, and as intensity increases, safe exposure time rapidly decreases.



Rule of 60/60 [10]
Listen at not > 60% volume for maximum 60 minutes

What are ‘Safe Listening Practices’?

One must be aware of device volume setting and listening time duration

Volume control limits of device to be activated

- Listen with 60/60 rule: this rule states that ‘listen not more than 60% device volume for not more than 60 minutes per session’
- Take breaks during listening. Avoid wearing device throughout the day
- Active Noise Cancellation in devices to be limited

Alternate wearing headphone and earbuds devices. Give one’s ears a break!!

Be watchful of hearing issues like
Tinnitus / Difficulty in hearing conversations at noisy places and ear discomfort.

Clean earbud devices regularly

Results

Majority of the studies were on students who had been using personal listening more than four years. In one report ear symptoms were present in almost 33% and hearing loss among 45%. Those who did not comply to volume alerts had 6.7 higher odds of less than 50 score suggesting hearing loss. Similarly, those with previous hearing loss had significantly poorer hearing level when compared to non-users. In another report, among those users with listening time more than 30 minutes a day and total listening more than seven hours a week, hearing was affected in conventional frequencies while those using more than 70% device volume with more listening time had their hearing affected in highest frequencies. Regarding knowledge, attitude and practice, two studies revealed that though majority had good knowledge and positive attitude, it did not translate into practice for preserving hearing.

Key words: Personal listening devices, Recreational noise induced hearing loss, Safe listening practices.

Conclusion

Personal listening device, especially among young adults are on the rise. Potential risk for device-related recreational noise induced hearing loss is a reality. Educating young population for a positive attitude to practice healthy habits towards safe use of listening devices appears to be an urgent mandate. No doubt, a wake-up call for Otolaryngologists and their Audiology colleagues to be primary movers in avoiding this silent, invisible disability of hearing loss among our prime, young yet vulnerable population and their mandate to encourage personal listening device-users to be ‘safe rather than sorry’.

Selected References

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3. Benton, C. (2024). Audiologists raise concern over headphone use in young people. *BBC News*.