

## Using Earphone and its Complications: An Increasing Pattern in Adolescents and Young Adults

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### Dear Editor,

Listening to music player devices, as a leisure activity, is on the rise among adolescents and young adults. However, this activity results in many social and health problems (1-4), and needs to be studied with a holistic approach.

One of the previous studies in this field has reported an increase in hearing problems in younger people, so that among subjects between 6 and 19 years, about 14.9% had low or high-frequency hearing loss in at least one ear, also 12.5% suffered from audiometric evidence of noise-induced hearing loss (NIHL) (5). This problem might be related to increasing use of music player devices among them (1, 2, 6). Unfortunately, the adolescents or young people expose themselves to loud noise or music for a long period, while they are unaware of its consequences (4).

Another problem arises when people use earphones not only for listening to music, but also for eliminating the surrounding noise in bed to sleep at night or in transportation systems such as bus and metro train. The main problem is that hearing impairments or hearing loss may not be recognized for many years; so, treatment and intervention maybe difficult when it is detected (4-7). Regarding the increase in the use of portable music players and entertainment devices such as mobile phones, there is some concern about the hearing damage and hearing problems, especially among adolescents and young adults.

Health consequences of using headphones and earphones: documented studies on the consequences of prolonged use of the headphone among adolescents and young adults are rarely found in the literature and a few studies have been conducted on the harmful effects of using headphone and music player (1, 2, 8, 9). In addition,

the information about the negative short-term and or long-term complications of using headphone has not been conveyed adequately to the general population. Regarding the potential harmful effects of using earphone, the question must be answered whether its use is secure or not. Thus, we are going to discuss some of the problems cause by using such devices.

Hearing loss/hearing complications: while using earphones, the sound reaches directly the ears. Sound intensity more than 85 decibels can cause hearing complications and hearing loss (10). Ideally, one should not use earphones continuously for more than 15 minutes (8, 10). There is a threat of hearing loss beyond this time.

Ear infections: sometimes individuals share the earphone and music player devices with each other. This action could cause ear infections. In addition, the bacteria from ears of the others can easily be transmitted via your headphones (9).

Numbness of the ears: recent studies have shown that the individuals that use earphones, headphones, and other music player devices for listening to loud music most of the time during the day or night have felt numbness in ears (6, 8). In this situation the hearing ability of them gets numb temporarily. Numbness of ears could be harmful and cause deafness.

Sensation of pain in ears: The individuals that use the earphones and headphones often complain of pain in their ears. The users sometimes complain of some strange sound buzzing inside of the ears or a sharp pain in a specific point of this part of the body

Harmful effects on the brain: the electromagnetic waves generated by earphones and headphone could have serious effects on the brain. Although, no reasonable medical evidence has yet been found to prove it, the persons who

frequently use Bluetooth, headphones, and earphones are more prone to brain related problems.

Life threatening accidents: nowadays, the number of accidents has increased with the drivers who use earphones or headphones. Car or road accidents among people that use headphones, earphones, and other music player have increased dramatically. The person that cannot hear the horn may become the victim of accidents. On the other hand, to save the life of the individual using earphones, the lives of other people might be endangered (2, 8).

Public health implications of earphone using: recently due to propagation of new music player devices in Iran, a competition has developed among adolescents to buy these devices and listen to music in leisure times. Therefore, using headphones and music player devices has increased dramatically among Iranian adolescents and young adults (1). It seems that many of these individuals should be motivated to change their patterns of listening to music. Planning and teaching programs in this field for young adults, especially in high schools is too important. In addition, alerting the adolescents and their parents about the complications of earphone using, especially at schools could be effective regarding rational use of these devices among adolescents. However, there is still much to learn regarding music player devices exposure as a risk factor for NIHL. Although many questions related to exposures, effects, attitudes, knowledge, and practice of listening to music at work settings, pastime, and changing technologies have remained unanswered; recently many studies and reports strongly support establishing and ongoing efforts for educating and warning general population, music professionals, and music venue employees regarding the risks of listening to music with higher frequency. Finally, conducting and planning the research in this area and on elementary to high school students is recommended.

However, the people who use headphones can protect their hearing by using noise-cancelling headphones and avoiding the use of players in noisy places. Furthermore, limiting the time of listening per day or week and tak-

ing breaks during continuous use can be an effective solution too. To preserve their hearing, adolescents and young adults must limit using portable music players for a short time or avoid using earphones at all (11).

## Footnote

**Authors' Contribution:** Hossein Ansari and Asghar Mohammadpoorasl jointly prepared the letter.

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